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Kiowa-Tanoan: A Synchronic and Diachronic Study

Logan Sutton

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KIOWA-TANOAN: A SYNCHRONIC AND DIACHRONIC STUDY

by

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B.A., Linguistics, Indiana University, 2004
M.A., Linguistics, Indiana University, 2006

DISSERTATION

Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

Linguistics

The University of New Mexico
Albuquerque, New Mexico

July 2014
DEDICATION

To a future of continued vibrant linguistic diversity

and those who work so hard to preserve it…
ACKNOWLEDGEMENTS

Such a large and detail-oriented work could not have been achieved by the efforts of a single person. I owe the results to many individuals.

First and foremost, credit must be given to those speakers of Kiowa-Tanoan languages who have generously shared their knowledge with linguists and anthropologists and to those through whose effort the languages continue to be spoken today. In particular I wish to personally thank those speakers of different varieties of Tewa and Tiwa with whom I have had the honor of working. While I must leave their names and communities anonymous in this work, these remarkable individuals have taught me much about their languages. It has been a genuine pleasure to work with all of them.

Any scientist must acknowledge those before him or her on whose work s/he is building. That is particularly true in a research dissertation such as this, which relies heavily on previous documentation of the languages under study. Without the outstanding efforts of all of the individuals mentioned in the literature review of chapter 3, a work such as this could never have been attempted.

My dissertation committee provided me with valuable input throughout the writing and defense process. Dr. Watkins was able to inform me of details of the past 30-odd years of Kiowa-Tanoan research not to be found in the literature as well as lending a critical eye to my data and analysis as one of the most prominent Kiowa-Tanoan researchers in the field. As another Kiowa-Tanoanist, Dr. Debenport and I have had many discussions on working among the Pueblos, with all of the benefits and challenges it brings. Dr. Maddieson helped me to wade through confounding sets of data to try to
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Finally, I must thank my family and friends who have provided me with personal support at various points as this work developed.
All of the above may be credited with providing support and discussion of one kind or another over the years. Any errors or faults that are to be found in the following chapters, however, can only be credited to the author.
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ABSTRACT

This dissertation provides a comparative-historical analysis and reconstruction of the phonological system and of the pronominal system of Proto-Kiowa-Tanoan, the theoretized ancestor of a family of seven languages located in the Pueblo Southwest and Great Plains. The modern constituent members of the family are Kiowa, Rio Grande Tewa, Arizona Tewa, Picuris Northern Tiwa, Taos Northern Tiwa, Southern Tiwa, and Towa. The dissertation is divided into three parts, plus a concluding discussion.

Part I is a thorough overview of the background of Kiowa-Tanoan language study. This includes a comprehensive review of the literature, published and unpublished, which describes the structures and functions of the languages as well as a grammatical overview of the family.

The second part of this study follows up on Kenneth Hale’s (1962, 1967) groundbreaking establishment of some of the major sound correspondences and
phonological reconstructions. The present research reconfirms many of his findings on consonants, adds a few more correspondences, and suggests revisions to some of Hale’s reconstructions. In addition, the vowel system of the family is reconstructed, this dissertation suggesting that the modern vowel systems may have evolved from a much smaller vowel inventory than is found in the modern languages. The analysis and reconstruction points to intricate historical interrelations between vowels and adjacent consonants in the development of the modern languages from their common ancestor.

Part III of the dissertation analyzes the complex system of pronominal indexation proclitics found in all languages of the family. These morphemes index from one to three core arguments, in 50-90 synchronically portmanteau forms, organized into 6 or more paradigms. The paradigms show heavy influence from a person-animacy-topicality hierarchy often realized through alternations in grammatical voice. The dissertation proposes a reconstruction of the Proto-Kiowa-Tanoan pronominal indexation paradigms, building on the preceding phonological reconstruction.

Finally, the conclusion in Part IV provides discussion of the potential internal structure of the language family. Possible family trees are considered on the basis of shared innovations in the phonology and morphology of the languages. This conclusion also points to future directions for the study of Kiowa-Tanoan languages.
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1 Introduction

This dissertation is the product of about a decade of gradually evolving research and thought on the Kiowa-Tanoan languages with both a synchronic and diachronic perspective in mind. Indeed this thesis represents but a portion of a more extensive project to document and describe the synchronic grammars of all of the extant Kiowa-Tanoan languages, to collect and synthesize all documentation on the languages to date, and to reconstruct the grammar of the ancestral language from which they descend and the changes they have undergone over the millennia. This is all with the intended goal of a) contributing to our collective scientific knowledge of linguistic diversity as a typology-minded linguist, and moreover b) ultimately providing resources to the communities where these languages are spoken. Hopefully this will help to ensure that at least this small corner of the vast linguistic diversity of the world does not disappear anytime soon. However, this dissertation is simply an early milestone along the course of this greater project.

The most immediate goal of this dissertation is to reconstruct certain aspects of the phonology and grammar of Proto-Kiowa-Tanoan and the historical changes that have taken place within the family to arrive at the modern languages. In this dissertation I aim to establish the major sound correspondences to reconstruct the formal phonological patterns as groundwork for then reconstructing some of the more prevalent grammatical and semantic patterns that are to be found in these languages. In particular I will be looking at argument marking, especially the large and complex set of pronominal indexation verbal proclitics and the interrelated voice alternations. While there are numerous other areas ripe for investigation, this area is one of the most grammaticalized
and constitutes one of the most highly salient parts of the bound morphology in the languages. It thus provides an ideal starting point for diachronic morphosyntactic research. Indeed the phonology and argument indexation are two topics that have drawn the most investigation to date, although this dissertation aims to address the topics in far more detail than any previously (see the literature review of chapter 3). The following chapters will therefore establish the necessary background information for understanding the Kiowa-Tanoan languages as viewed here before digging into the analysis and reconstruction of the phonological and argument indexation systems. The next few sections of this introductory chapter will lay out the preliminaries.

1.1 The Kiowa-Tanoan Languages

Before delving further into the nature and details of this dissertation research and surveying the previous studies of Kiowa-Tanoan languages, I will first clarify for the readers what the Kiowa-Tanoan languages are, who speak them, and how I will be viewing them in this research project. Kiowa-Tanoan is a small family of languages presently spoken by Native American communities located in New Mexico, Arizona, Texas, and Oklahoma. Apart from the relatively well-known Kiowa of the Great Plains, the Kiowa-Tanoan languages and the peoples who speak them seem to be little known as distinct Native tribes to the popular American imagination outside of New Mexico. At best, the Kiowa-Tanoan speakers of the Southwest tend to be grouped with speakers of Keresan, Zuni, and Hopi under the undifferentiating label “Pueblo(an)”. Indeed the Kiowa-Tanoan speaking peoples of the Southwest do participate in the material, religious, and cultural framework by which anthropologists define the Pueblo cultural
region and, like the other groups, descend and inherit from the Anasazi and Mogollon traditions of the region. In fact, 13 out of the 22 modern Pueblo communities\(^1\) speak a Kiowa-Tanoan language. Linguistically, however, Kiowa-Tanoan is quite distinct from the Keresan, Zuni, and Uto-Aztecan languages of the Southwest and from the nearby non-Puebloan Apachean languages as well. More brief information on the history and prehistory of the Kiowa-Tanoan speaking peoples will be given in chapter 0.

The Kiowa-Tanoan can minimally be divided into four indisputably distinct language groups, bearing the wonderfully euphonic names Kiowa [ˈkajowa], Tewa [ˈtewa], Tiwa [ˈtiwa], and Towa [ˈtowa].

- **Kiowa** is spoken in a dispersed community in southwestern Oklahoma on former reservation land roughly bordered by the modern towns of Carnegie, Anadarko, Hobart, and Lawton (in Caddo, Comanche, and Kiowa counties).

- **Tewa** is spoken on six Pueblo reservations in New Mexico, just north of Santa Fe—Tesuque, Pojoaque, San Ildefonso, Nambé, Santa Clara, and Ohkay Owingeh (formerly known as San Juan)\(^2\)—and in Tewa Village (formerly sometimes called Hano) on the Hopi Reservation in northeastern Arizona.

- **Tiwa** is spoken on four Pueblo reservations in New Mexico—at Isleta and Sandia in the vicinity of Albuquerque in north-central New Mexico, and at Picuris and Taos in the vicinity of the city of Taos in the northern part of the state—and at the Ysleta del Sur reservation located within the greater metropolitan area of El Paso, TX.

---

\(^1\) Strictly speaking there are only 21 Pueblo Reservations: 19 in New Mexico, Ysleta del Sur in the vicinity of El Paso, TX, and the Hopi Reservation in Arizona. I am here distinguishing Tewa Village, AZ as a distinct community, even though it is politically a part of Hopi.

\(^2\) The communities are listed from south to north.
• **Towa** is spoken solely at Jemez Pueblo, in the Jemez Mountains west of the interstate between Albuquerque and Santa Fe.

The speech situation in each of these communities will be shortly described in chapter 0. Given that these language groups are distributed across 14 speech communities, and even more before the advent of Europeans, some of these groups have a fair amount of dialectal distinction. Since some of these distinctions strain mutual intelligibility, a linguistic analyst must consider how to accommodate these differences when declaring how many languages constitute the family.

For the purpose of my analysis, I have opted to take a conservative “splitting” strategy, considering a variety to be a distinct language wherever there is reported difficulty in mutual intelligibility and obvious major structural differences (cf. chapters 3, 5, 0, 0). By this method, **Kiowa** and **Towa** can each be considered single languages, any variation among speakers being relatively minor. **Tewa** is divided into two languages: **Arizona Tewa**, spoken only at Tewa Village in Arizona, and **Rio Grande Tewa**, spoken at the six New Mexican Pueblos. While there are notable dialect differences among those six speech communities, they are apparently not sufficient to impede mutual intelligibility and Rio Grande Tewa speakers from one Pueblo can easily converse with speakers from another (Kroskrity 2000; anonymous Rio Grande Tewa consultants, personal communication). Mutual intelligibility between Arizona and Rio Grande Tewa comes only after speakers from the respective communities have had significant exposure to the other variety. The languages are thus quite close, but are too distinct to be deemed “the same language” for present purposes. **Tiwa** is here divided into three languages, following Trager (1964): **Southern Tiwa**, spoken at Sandia, Isleta, and Ysleta del Sur,
**Picuris Northern Tiwa**, and **Taos Northern Tiwa**, each spoken at the Pueblo after which they are named. Reports of mutual intelligibility among the Tiwa communities are varied. Sandia, Isleta, and Ysleta del Sur have some notable dialect differences, but are easily mutually intelligible\(^3\). Picuris speakers can reportedly understand speakers from Taos to a degree, but Taos speakers apparently have greater difficulty understanding people from Picuris. I have heard Taos speakers say they can understand people from Isleta, but I’m not sure that these comments represent actual full mutual intelligibility so much as a recognition that Southern Tiwa is obviously much more similar to Taos Tiwa than are any of the other languages located geographically in between\(^4\). In any case, objective phonological and grammatical differences among these three varieties are sufficient to treat them distinctly for present purposes. These are thus the seven Kiowa-Tanoan languages spoken at the time of writing.

Also of note are two languages that are no longer spoken. The Piro language was spoken at several villages south of Isleta at the time of the Spanish *Entrada* in 1540, most centralized on the Rio Grande in the area of modern day Socorro, NM and in the Manzano Mountains to the east. After the Pueblo Revolt of 1680, the remaining Piro established two communities in the area of modern day El Paso, where the last speakers were residing when the language ceased to be spoken in the late 19\(^{th}\) or early 20\(^{th}\) century.

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\(^3\) See chapter 0 for description of the current speech situation at Ysleta del Sur and the origin of this community.

\(^4\) Interestingly, one of these Taos speakers when making such a comment also indicated he couldn’t understand people from Sandia. Given the context and the geographical distance between the Southern and Northern Tiwa communities, I would surmise that most modern Taos speakers simply have too few encounters with Isleta speakers and even fewer with Sandia speakers—a much smaller community than Isleta—to have a strong representation of these Southern Tiwa varieties. As stated, they’ve probably had enough experience to notice the similarities between Taos and Isleta, at least, but perhaps not enough to objectively gauge conversational mutual intelligibility. This might be especially true given the presence of English as a general lingua franca to fall back on nowadays.
The only records of the Piro language that exist are two overlapping word lists constituting about 180 words collected in the late mid-19th century, a translation of the Lord’s Prayer, first published in 1860, and records of (Hispanicized) place names (see chapter 3.8 for references). While the transcriptions are wanting, as with other transcriptions from this time period, and there is not sufficient data to give even a scant grammatical sketch of the language, these documents provide enough material to establish that Piro was a Kiowa-Tanoan language and was very close to (Southern) Tiwa. The little analysis suggests that it might indeed be best considered a fourth Tiwa language, but there is also the possibility that it constitutes a fifth branch to the family which became differentiated from Tiwa before that branch underwent internal division.

Piro data will be considered in the present analysis insofar as possible, but are hardly sufficient to take part in the primary discussion.

The other extinct language on which we have any information is the language of Pecos Pueblo, which was the largest and most powerful Pueblo in New Mexico at the time of the *Entrada*, but declined in population until it was finally abandoned by its last 17 residents in 1838. These final Pecos residents took refuge at the Pueblo of Jemez. The records we have of Pecos are even more sparse and unreliable than those of Piro. Adolph Bandelier and F. W. Hodge independently collected some few words from Pecos survivors at Jemez (Bandelier 1890, 1892, Hodge 1896) and John P. Harrington also

\footnote{Assuming these data are truly representative of Piro. It must be remembered that these elicitations of Piro language were collected about 200 years after the Piro had moved to the El Paso area along with a large number of Southern Tiwas. While these Piro and Tiwa originally established separate communities, eventually there was some amount of merger (witness that the only modern Pueblo in the El Paso area is Ysleta del Sur, which identifies itself as Tiwa). This suggests the possibility that the Piro of the late 19th century when linguistic data were collected from the last remaining speakers may have been heavily influenced by Tiwa. See also the arguments presented in Leap (1971), although his discussion is not without a number of problems, as described in chapter 3.8.}
interviewed one or two people of Pecos descent in the first decade of the 20th century (Harrington 1916:474, 477). The few data gathered show the language to be very close to the language of Jemez. This, plus the fact that Jemez Pueblo was the locale of their resettlement despite the closer proximity of other (Tewa and Keres) Pueblos, suggests that the language was indeed either a dialect of Towa or a closely related language. However, it must be kept in mind that Harrington did his fieldwork about seven decades after those few remaining Pecos people moved to Jemez, where they would have had to have linguistically assimilated to some degree in order to participate in the community. Given these circumstances and since Harrington does not much discuss the context of his elicitation, the accuracy of these few data as representative of the speech of Pecos Pueblo itself is difficult to ascertain. I will thus continue to go along with the theory that Pecos spoke a Towa language for the purpose of any following historical discussion, but it will have no significant contribution to my arguments and reconstructions and nothing here is contingent upon the assumption.

1.2 A Note on Terminology

Having established the Kiowa-Tanoan speech varieties that will here be considered distinct languages—Kiowa, Arizona Tewa, Rio Grande Tewa, Picuris Northern Tiwa, Taos Northern Tiwa, Southern Tiwa, Towa, and, insofar as they will be discussed, Piro and Pecos (Towa)—a few more terminological uses in this dissertation should be clarified. Each of these languages will be denoted by their full names as given

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6 Ortmann (2012:151-152, fn. 1), however, argues that Pecos may have spoken a Tewa language. I have also heard this opinion expressed by some Tewa community members, although it was not clear in context whether it was meant that Pecos was indeed ethnically Tewa or if it was simply recognized that Pecos was Tanoan.
Usually use of the terms “Tewa” and “Tiwa”, when speaking of the languages, will be limited to discussion that applies to all of the varieties within those respective branches. Occasionally these names may be used to denote a particular language that is being discussed, e.g. I may call Rio Grande Tewa “Tewa” for short, but only when context makes it unambiguous as to which variety I refer and I endeavor to be as clear as possible.

Another set of terms whose uses should be clarified are “Kiowa-Tanoan”, “Proto-Kiowa-Tanoan” (and other “Proto-X” varieties), “Pre-Proto-Kiowa-Tanoan”, and “Tanoan”. Kiowa-Tanoan (which will occasionally be abbreviated as KT) will be used to refer to the family as a whole and occasionally to the speakers of the constituent languages. Proto-Kiowa-Tanoan (occasionally abbreviated PKT) will be used to refer to the ancestral language from which all of the Kiowa-Tanoan languages are believed to descend and denotes the generalized linguistic variety that is the main target of the reconstruction efforts in this dissertation. Intermediate language stages between Proto-Kiowa-Tanoan will similarly be denoted, as per standard practice, by Proto- plus the appropriate descendant varieties: Proto-Tewa thus denotes the most immediate ancestor of Arizona Tewa and Rio Grande Tewa; Proto-Tiwa denotes the most immediate ancestor of Southern Tiwa and Northern Tiwa; Proto-Tewa-Tiwa denotes the most immediate ancestor of the Tewa languages and the Tiwa languages together, under the analysis of

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7 Occasional abbreviations, such as Taos or Taos Tiwa for Taos Northern Tiwa, for instance, may be used for stylistic variation, but should not cause any confusion. Similarly denoting a variety by the Pueblo at which it is spoken, e.g. Santa Clara or Santa Clara Tewa for Santa Clara Rio Grande Tewa when speaking about a particular dialect, should also be clear.

8 That is, it refers to the last stage of a language that is thought to have been spoken at one time before any of the modern attested branches of Kiowa-Tanoan began to be distinguished as separate languages.

9 Northern Tiwa is itself a generalized term to denote Picuris Northern Tiwa and Taos Northern Tiwa.
the family’s internal structure that posits this as a historical unit; and so on. Pre-Proto-
Kiowa-Tanoan will be used to discuss hypothesized stages of the ancestral Proto-Kiowa-
Tanoan language before the PKT stage that immediately preceded the break-up into
descendant languages. Finally, Tanoan requires some further discussion.

The term “Tanoan”, originally “Tañoan”, was first coined by Powell in his (1891)
classification of indigenous languages of the Americas as the name of the family
consisting of the Tewa, Tiwa, Towa, and Piro languages. The name itself derives from
Tano, Tewa tʰa nʊʔ, (Harrington 1912c, 1916:104)\textsuperscript{10}, the name given to the Tewa-
speaking people living south of Santa Fe, mainly in the Galisteo Basin (the “Southern
Tewa”). This name \textit{sans} the tilde was quickly accepted as the cover term for this group of
languages, with the (correct) assumption that they were related. Powell originally
classified Kiowa as an isolate of the “Kiowan” family, the cultural and geographic
distinctions between the nomadic buffalo-hunter Kiowa of the Great Plains and the
sedentary farmers of the Southwestern Pueblos not making a possible linguistic
relationship stand out. Although John P. Harrington (1910b, 1928) posited a relationship
between Kiowa and the Tanoan languages, it would not be until the 1950s (Miller 1959,
Trager 1951, Trager and Crowell Trager 1959) that the relationship would be accepted as
a strong and probable hypothesis (and the family name “Kiowa-Tanoan” established),
and not until Hale (1962, 1967) that the relationship was definitively proven by
conventionally accepted methods.

\textsuperscript{10} Harrington (1912c) reports tʰā ’nuĝe ɨ’ t'o’wa (tʰa- nʊɡé- ɨŋ t’ōwa = dwell-down. below people), “the
people who live in the lower settlements”, as the fuller name and Harrington (1916:104, 1919:78, 82) gives
\textit{Panut’owa}. “Tano” obviously must derive from a more abbreviated form, thus the suggested tʰa nʊʔ
(dwell-beneath/near), which would fit phonologically and semantically.
The hyphenated form of the family name thus reflects this late recognition of a relationship between Kiowa and the other languages of the family, which is first and foremost based on geographic and cultural separation. The hyphenation was seemingly supported by the proposals of internal family relationships that have largely been accepted since Trager (1951), which posits Kiowa as the first language to separate from the rest of the family, thus implying that “Tanoan” denotes a true linguistic genetic grouping. However, apparently at a Kiowa-Tanoan conference in 1980, the Kiowa-Tanoanists of the time decided to adopt a more conservative “flat” structure to the four main branches of the family—with no closer internal relationships posited among Kiowa, Tewa, Tiwa, and Towa—until more comparative-historical research could be done. This decision seems to be published only in footnotes in Kroskrity (1984:95, fn. 3) and Zaharlick (1982). Hale and Harris (1979) report such a move as well, although they explicitly maintain the Tewa-Tiwa grouping of previous decades. I will address the topic of family internal structure more fully in chapter 0 of this dissertation. Because the accepted internal structure of the family has never been particularly well argued or supported by data demonstrating shared innovations\(^\text{11}\), I will not be using Tanoan in this genetic sense in this dissertation. My use of the term will be a matter of convenience to denote the geographical (and areal linguistic) grouping of Kiowa-Tanoan languages located in the Southwest. Evaluation of “Tanoan” as a genetic grouping (as opposed to Kiowa) will await the discussion of the internal structure of the family in chapter 0.

\(^{11}\) The one publication to attempt such a justification that has had enough time to circulate is Watkins (1977), which posits such shared innovations. See Sutton (2009) and chapter 0 of the present dissertation for criticism of Watkins’ arguments. More recently, archaeologist Scott Ortman (2010, 2012) has similarly brought to bear linguistic arguments in favor of the traditional internal structure of the family. Comments and criticisms of Ortman’s work will be given in chapter 3.9 and in chapter 0’s discussion of the internal structure of Kiowa-Tanoan.
1.3 Structure of the Dissertation

The goal of this dissertation is to provide a comparative-historical perspective on the Kiowa-Tanoan languages by taking the first steps towards reconstructing the proto-language from which they all descend and, by extension, the changes that the individual languages have undergone since the time of that theoretical ancestor. Of course, such a work can only hope to address but a small subset of the linguistic structures that exist in the seven extant Kiowa-Tanoan languages, their dialects, and their ancestral varieties. This work will therefore focus on some of those phonological and morphosyntactic points emphasized in the general grammatical sketch given in chapter 5. Specifically, this dissertation will reconstruct the inventory of phonological segments of Proto-Kiowa-Tanoan and the large and elaborate set of pronominal indexation markers that are attached to verbs. Hopefully the reconstructions to be presented will provide a strong springboard from which further research into Kiowa-Tanoan, both synchronic and diachronic, may advance into areas not thoroughly explored in this dissertation.

The remainder of this work will be organized into four parts. Part I will be comprised of chapters 2-5 and will present the background on the communities where the Kiowa-Tanoan languages are spoken, the literature in which the languages are discussed and analyzed, and will provide a very general typological sketch of the major structural features of the languages in the family. Part II will consist of chapters 6-10 and will provide an overview of the synchronic phonological systems of the individual languages before delving into a reconstruction of the consonants and vowels of the ancestral languages. Chapters 11-20 will constitute Part III, which will present a description of the complex synchronic pronominal indexation system found in all of the Kiowa-Tanoan
languages, argue for the cognate status of the numerous forms within the system, analyze the sound correspondences, and develop a reconstruction of the Proto-Kiowa-Tanoan indexation system. Finally, Part IV will consist only of chapter 21, the concluding chapter. The following provides a more detailed chapter-by-chapter breakdown.

Part I will open with chapter 0, which will present a brief overview of the known history and prehistory of the Kiowa-Tanoan speaking peoples, the communities in which they currently reside, and some of the major historical communities no longer extant with which they are known or thought to have been affiliated. While far from comprehensive, this should put the people and their languages in the appropriate geographical, socio-cultural, and historical context for the reader. Such context will be especially important when taking the linguistic data into account in cross-disciplinary studies.

Chapter 3 will follow this up with a fairly comprehensive survey of previous linguistic and anthropological research on the Kiowa-Tanoan languages, both published and unpublished. While the literature on Southwest archaeology pertaining to Kiowa-Tanoan speaking peoples is extensive and that on other aspects of Puebloan culture only a little less so, the published literature on Kiowa-Tanoan languages is fairly modest by comparison. There is actually a wealth of data on these languages accessible to the motivated researcher, but this is only to be found in otherwise unpublished dissertations, theses, and scholarly archives. This survey will hopefully provide future Kiowa-Tanoanists and members of the Kiowa-Tanoan communities with a clearer grasp of the resources available. The review is organized by language with a final section on comparative-historical research and works that make mention of more than one Kiowa-Tanoan language.
Chapter 4 will explicate the methodology to be used in the dissertation and how the linguistic data are being viewed. It also includes some discussion of the theoretical framework of the author and addresses both the synchronic analysis of the languages and the means used for reconstructing the diachronic changes. This chapter will also necessitate some discussion of certain issues pertinent to any researcher doing work among the Southwestern Pueblos.

With this background reference in the reader’s hand, chapter 5 will begin our exploration of the Kiowa-Tanoan languages themselves by presenting an overview of the general phonological and morphosyntactic structures of the family. The overview will point out those features shared across the languages as well as those areas in which the languages differ. Emphasis will be given to those aspects of the grammar that will form the focus of the reconstruction in the subsequent chapters of the dissertation—phonology and argument marking—and to those structure the reader needs to be familiar with in order to follow the discussion in those chapters.

Chapter 0 will begin Part II by detailing the phonological structure of all of the modern Kiowa-Tanoan languages. The chapter will proceed language-by-language, presenting and illustrating the segmental and suprasegmental inventories, syllabic structure and phonotactic constraints, and the major phonological alternations. This information is a prerequisite for following the phonological reconstructions of chapters 0-10 and of chapter 0.

Chapter 0 will review the previous comparative-historical analyses of Kiowa-Tanoan and present comments and criticisms of these. There has not been much work in
this area done to date, but it is important to consider the claims and hypotheses that have been proposed by previous researchers before proceeding with my own analysis.

Chapter 0 will begin my own comparative-historical analysis of Kiowa-Tanoan and the reconstruction of the phonological system of the ancestral language of the family. An evaluation of regular correspondences among sound segments and of patterns of phonotactic structure will provide a valuable baseline for rigorously evaluating correspondences in the grammatical constructions analyzed in Part III. Specifically, this chapter will address the vowels, which prove critical to an understanding of the phonological changes the languages of the family have undergone. The chapter will illustrate sound correspondences with cognate sets and present argumentation for the reconstructed vowels of the proto-language.

Chapter 0 continues the phonological reconstruction of Kiowa-Tanoan with an analysis of the stem-initial consonants. While these consonants have received more attention in the literature reviewed in chapter 0 than vowels or stem-final consonants, this chapter will show that a new approach is needed to develop the stem-initial consonant inventory. Evidence for the reconstructed consonants comes especially from the vowel reconstruction of the previous chapter as well as typological patterns of sound change and coarticulatory effects.

Chapter 10 will conclude the phonological analysis with a tentative analysis and reconstruction of consonants found word-internally. These include stem-initial consonants that undergo changes in compound constructions (when bound to another stem) as well as stem-final and coda consonants. These latter in particular have a strong
tie-in with the vowel changes of chapter 0. This dissertation will be the first to address such stem-final consonants in Kiowa-Tanoan.

Having grounded ourselves in the purely formal correspondences, we can begin to isolate and affirm morphological correspondences as well. Part III will be the venue for such a foray into grammatical reconstruction as I analyze the argument marking strategies of the languages. This section will focus especially on the large sets of synchronically portmanteau pronominal proclitics that may index the person, number, and noun class of up to three arguments in a clause and have elicited the fascination (and frustration) of almost every linguist who has ever studied a Kiowa-Tanoan language.

This foray will begin in chapter 0 with an overview of the synchronic systems of pronominal indexation markers as they exist within the languages of each of the four primary branches of Kiowa-Tanoan. The large array of pronominal proclitics in each language can be divided into five functionally and formally distinct paradigms, which will serve as a means of organizing these sets throughout the analysis.

Chapter 0 is analogous to chapter 0 in reviewing the previous analyses of the pronominal systems, either within a single language or across the languages of the family. As in the other literature review chapters, I provide comments and criticisms on the benefits and shortcomings of these previous analyses before moving on to my own.

The next few chapters begin my analysis of the pronominal indexation proclitic paradigms by presenting arguments for the cognate status of pronominal forms across languages. With so many pronominal proclitics and a number of formal and functional changes have taken place since the break-up of Proto-Kiowa-Tanoan, it must first be determined which pronominal forms should even be compared as cognates before
reconstruction can even proceed. These chapters undertake this challenge, addressing the pronominal systems one paradigm at a time. Chapter 0 starts with the intransitive paradigm, which only indexes a single argument and is ostensibly the simplest. Chapter 0 then analyzes the intransitive-dative series, a uniquely Kiowa-Tanoan paradigm for indexing two arguments between which hold certain types of indirect relationships.

Chapter 0 moves on to the transitive paradigm, which also indexes two arguments, but makes more distinctions than the previous series and ultimately constitutes the largest set or pronominal proclitics. Chapter 0 then turns to the reflexive series, a subset of the transitive (functionally, at least, but also often formally). This series has wider use than its name implies, as well as a more complicated history of development when comparing across the modern languages. Chapter 0 goes quickly through the transitive-dative paradigm. Even though this set functionally indexes up to three arguments, and is thus potentially comprised of the largest set of pronominals, we find that the pronominal forms of this series are largely derived from the paradigms reviewed in the previous chapters. Chapter 0 finally argues for correspondences among the last series of pronominals: that subset of the transitive and transitive-dative which index a speech-act participant (SAP) as a primary object. Configurations where a third person is acting on a first or second person have a special grammatical status in Kiowa-Tanoan (as is further addressed in chapter 0), and so the pronominal forms that index these configurations are addressed separately from the rest of the paradigms to which they otherwise belong.

Having determined at length which pronominals should even be considered cognate among the languages—and thus what the proto-language system may have been like—chapter 0 undertakes the formal reconstruction of the pronominal proclitics.
Regular sound correspondences are identified among the proposed cognates, some of which appear to be (relatively) unique to the pronominal system, but most of which have corrolaries in the correspondence sets presented in Par II. Following from the general shape of the Proto-Kiowa-Tanoan pronominal indexation system and the identification of sound correspondences, the chapter then presents a reconstruction of the actual pronominal forms.

As a final note to the pronominal indexation system, chapter 0 analyzes the voice system which ties into the use of the pronominal proclitics. As we find in chapter 0, argument configurations where a third person acts upon a speech-act participant are given special grammatical status, reflected in the manipulation of grammatical voice. Voice is also used for information tracking purposes more generally. However, each of the Kiowa-Tanoan languages shows a different range of uses for its voice system. This chapter therefore reconstructs the usage of voice in Proto-Kiowa-Tanoan on the basis of the pronominal indexation reconstruction of the preceding chapters.

Finally, in Part IV we’ll arrive at the summary and conclusion in chapter 0. Synthesizing the findings of Part I and Part II, I shall briefly evaluate the evidence for shared innovations and conservativeness among the four branches of the language family in order to provide a motivated account to the internal structure of the Kiowa-Tanoan family tree. Thus far in Kiowa-Tanoan research, two family trees have been posited: one with a flat structure of four equidistant sub-branches and one with Kiowa the first to separate from the rest, followed by Towa, and finally a split between Tewa and Tiwa. Little evidence has been put forward in support of the latter organization and the former is only admitting to a lack of detailed research. The first part of chapter 0 will critically
evaluate the possible tree structures and posit a revision based on the evidence presented in Part II and Part III. While the trail for this complex pursuit will not be traversed very far here, I hope to have at least established a solid groundwork for following it in future. In particular if we have a clearer idea of the internal structure of Kiowa-Tanoan, we can further consider possible external influences upon the family from neighboring languages, and reevaluate the proposals for deeper genetic relations, especially the popular Azteco-Tanoan hypothesis. Reestablishing theories of deeper genetic relations will have to await consideration and comparison with similar comparative-reconstruction research done on other language families. As a concluding note, I will address the present gaps in knowledge within Kiowa-Tanoan, both at the synchronic and diachronic level, as a suggestion for directions that future research might want to take.
Part I: Background and Overview of the Kiowa-Tanoan Language

Family
2  History of the Kiowa-Tanoan Speaking Peoples

I do not intend to give a summary of all that is known, or conjectured, of the history and prehistory of the Kiowa-Tanoan speaking peoples in this dissertation. For one, this would involve covering two large, multi-ethnic cultural areas: the American Southwest and the Central and Southern Plains. The historical, archaeological, and ethnographic literature for both is quite vast and the social, cultural, and political complexities of these areas far too intricate to warrant the effort of a full review in this dissertation¹. I will limit myself here to a short excursus on relevant facts (or theories) of prehistoric and historic Kiowa-Tanoan communities followed by brief comments on the communities where the languages are spoken today or in the recent past. I will also provide suggested literature for the reader interested in the rich extralinguistic history and ethnology of the Kiowa-Tanoan speaking groups.

Section 2.1 presents a very short general overview of the prehistoric Southwest based on archaeological records and a short general history of the Pueblo region following contact with the Spanish. Section 2.2 will touch on some of the Pueblos that were abandoned following contact with the Spanish, with particular attention given to Pecos Pueblo (section 2.2.1). Section 2.3 addresses the modern Tewa-speaking Pueblos, describing some notable aspects of their individual histories and their current states in terms of population and economy. The survey moves north to south through Ohkay Owingeh (2.3.1), Santa Clara Pueblo (2.3.2), San Ildefonso Pueblo (2.3.3), Nambé

¹ Having hopefully established many of the general structural correspondents and Kiowa-Tanoan-internal developments in this dissertation, it would certainly be worth addressing these external factors as they pertain to language contact and areal linguistics in more detail. While the literature is sprinkled with (usually vague) comments about lexical borrowings or linguistic contact, there is no appreciable published study to my knowledge for either the Southwest or the Plains.
Pueblo (2.3.4), Pojoaque Pueblo (2.3.5), and Tesuque Pueblo (2.3.6), followed by the western outlier of Tewa Village in Arizona (2.3.7). Section 2.4 then provides a similar survey of the Tiwa-speaking Pueblos, describing Taos Pueblo (2.4.1), Picuris Pueblo (2.4.2), Sandia Pueblo (2.4.3), Isleta Pueblo (2.4.4), and finally the southern outlier Ysleta del Sur Pueblo of Texas (2.4.5). Section 2.5 describes the one surviving Towa-speaking community, Jemez Pueblo (2.5.1). Finally, section 2.6 provides a description of the Kiowa and their history on the Great Plains, far removed from the events of the Southwest. Section 2.7 summarizes and concludes the chapter.

### 2.1 Prehistory and History of the Southwest

#### 2.1.1 Southwestern Prehistory

As far as can be reasonably determined at present, the Kiowa-Tanoan peoples appear to be descendants of the ancient prehistoric hunter-gatherers indigenous to the Colorado Plateau before the advent of agriculture from Central America (Hill 2001, 2002, 2008). Speculation on their movements before settling in this region will probably have to await more certain establishment of deep linguistic genetic relationships. These peoples probably would have ranged between the upper San Juan and Rio Grande drainages and their tributaries and among the plains and valleys surrounding the southern Rocky Mountains and Sangre de Cristos of southern Colorado and northern New Mexico. Whether, and how much, they would have shared this territory with the ancestors of the Keresan, Zuni, or Northern Uto-Aztecan-speaking peoples during this period is not certain. Any peoples in the region would have probably subsisted primarily on mule deer, elk, pronghorn, and small game, such as rabbits and fowl, supplemented by larger game
such as mountain goats, North American bison, and bear when possible. They also would have gathered piñon nuts and wild fruits such as chokecherries and prickly pears.

A purely nomadic lifestyle appears to have given way to (semi-)sedentary dwelling in pit-houses by the beginning of the Common Era. This change appears to have been brought about particularly by the introduction of domesticated maize, bean, and squash agriculture probably acquired by trade with Uto-Aztecan-speaking peoples migrating north out of Mexico. The ability to grow their own food and create storable surplus allowed for population growth and an increasingly sedentary lifestyle. Above ground rock and adobe structures began to appear in around 700 AD (Pueblo I period), which were to develop into increasingly large and complex apartment building structures. The pit-house structures would be retained, but transformed from residential to ceremonial function as kivas. At the same time, baskets began to be complemented by ceramic pottery, the designs and details of which are especially used to date and identify different developments in the Pueblo area. By 1100 AD (Pueblo III period), these apartment structures began to culminate into the impressive architectural marvels seen at Chaco Canyon, NM and Mesa Verde, CO. It is to the material culture of the Pueblo III period in particular that the popular label “Anasazi” is often applied, although this term has largely been replaced in archaeology by the “Basketmaker I, II, III” and “Pueblo I, II, III, IV” labels when greater specificity is desired.

The Pueblo III period transitioned to the Classical Pueblo period (Pueblo IV) in around 1300 AD as the major settlements of Mesa Verde and Chaco Canyon were rapidly depopulated. A major drought through the latter half of the 13th century induced the peoples living in the San Juan drainage to migrate south, merging with or settling near the
populations already based along the Rio Grande and its tributaries. It is still an open
question whether these northern immigrants consisted of Kiowa-Tanoan speakers or were
primarily Keresan, although it is fairly certain that Kiowa-Tanoan—at least Tiwa—was
already well established along the Rio Grande. It is the villages that developed as a
product of this southern migration that the Spanish encountered when they first entered
New Mexico.

For the most accurate information on the prehistory of the Pueblo region, the
reader is referred to the vast and rich archaeological literature of the Southwest. Hewett
(1930/1943) is an early summary of research to date targeted towards a general academic
audience. Cordell (1979), Irwin-Williams (1979), Martin (1979), Plog (1979), Woodbury
(1979), and Woodbury and Zubrow (1979) all provide summaries of the state of
prehistoric studies at the end of the 1970s in the Smithsonian Handbook of Native
American Indians (Ortiz 1979a). Ortman (2012), reviewed from a linguistic perspective
in chapter 3.9, does do an outstanding job at summarizing the current state of
archaeological research on prehistory, albeit biased towards the thesis for which he is
arguing (that the Tewa inhabited the villages at Mesa Verde). The 1990s and 2000s have
seen a number of collections of articles addressing various stages and various aspects of
the prehistory of the region. These include Adler (1996), Kamp (2002), Kohler et al.
(2010), Mills (2002), Roth (2010), Spielmann (1991), Varien and Potter (2008), and
Wilshusen et al. (2012). This list does not pretend at being complete.
2.1.2 Post-Contact Southwestern History

The first contact that the Pueblos had with Europeans was with Spanish explorers and colonists coming out of New Spain (modern Mexico). Initially cordial reception of the Spanish by the Pueblos almost immediately turned hostile as the Pueblos bristled at the aggressive arrogance of the European intruders. Following rumors of large cities of gold and wealth and the report of Fray Marcos de Niza who taken a small exploratory expedition in 1539 as far as the Zuni village of Hawikuh, Francisco Vásquez de Coronado led a large expedition into the Pueblo area in 1540, and event known as the Spanish *Entrada*. Moving through the Zuni, Southern Tiwa, and Pecos villages (and on into the Caddoan villages on the Plains), Coronado did not find the wealth that was hoped for. Instead during the course of his stay among the Pueblos, his troops drained the food and blanket reserves of the villages and molested women while the small group of Franciscan friars he had brought attempted to convert the Native people to Catholicism. Needless to say, this left a severely negative impression of Europeans with the Pueblos.

The next 50 years witnessed a handful of small Spanish expeditions into New Mexico, all of which resulted in skirmishes and violent military action against the Pueblos. The next major contact did not come until 1598, when Juan de Oñate led a colonizing expedition into the Pueblo area to establish a permanent Spanish presence. Basing themselves at Yuque-Yunque and Ohkay Owingeh, Oñate’s group initiated an intensive program of missionary activity and colonization while searching for precious metals. As with the Coronado expedition, the Spanish had no qualms about levying Pueblo resources and violently suppressing any resistance with military force. Following the arrival of a new governor, Pedro de Peralta, and the founding of the city of Santa Fe
in 1610 at the site of a Tano Pueblo, the Spanish only intensified their program of suppressing indigenous religious practices, levying food and cotton supplies, and conscripting slave labor from the Pueblos, a system called *encomienda*.

This abuse continued for 70 years, until 1680. In the late 1670s, the Pueblos began conspiring to rise up against the Spanish and drive them out of their territory. Setting aside traditional enmities amongst themselves, almost every Pueblo joined in the conspiracy and on August 10, 1680, a massive pan-Pueblo assault on Spanish holdings began. Killing 21 missionaries and 400 colonists and laying siege to the capitol at Santa Fe, the Puebloans took the Spanish off-guard and forced them out of their villages. The governor, Antonio de Otermín, led the survivors in retreat first down to the Southern Tiwa Pueblos of Sandia and Isleta to regroup, and then on south to the Spanish colony of El Paso. Otermín led a foray into New Mexico the following year to investigate the possibility of reconquest, but found the environment still hostile, although he did burn most of the southern Pueblos.

The years following the revolt were hardly peaceful for the Pueblos. The abuses of the Spanish had taken their toll on Pueblo resources; nomadic peoples began aggressively raiding the villages; and Pueblos began to war amongst themselves as the power vacuum left by the Spanish attempted to resolve itself. Taking advantage of this chaos, Spanish governor Diego de Vargas led a successful reconquest of the Pueblo region in 1692. Using peaceful persuasion as much as possible—but subsequently military force to quell the substantial resistance, de Vargas was able to force the Pueblos to allow Spanish reentry. The ensuing peace was temporary and in 1696 a second revolt was launched by the northern Pueblos with the assistance of allied Navajo and Apache.
However, de Vargas was successful in crushing the rebellion and compelled the Pueblos to lay down arms, while others fled out of the Pueblo region. This would be the last major uprising of the Pueblos, although the revolts and changes in overall Spanish policy did result in more peaceful and less abusive relations between the Pueblos and the Spanish colonists.

This early Spanish period took a drastic toll on the Pueblos in terms of population, the number of villages, and social structure. When the Spanish first colonized in 1598, it is estimated that the population within the Pueblos may have been as high as 60,000 or more (Dozier 1970: 130). By 1700, following years of Spanish abuses, the revolts and reconquest, and other warfare, this population was down to around 15,000. Subsequent epidemics over the next 150 years would lead the Pueblos to reach an all-time low of 9,000 by 1850 while the number of inhabited villages would ultimately be reduced to the 19 Pueblos found in New Mexico today.

The relative population size of certain Pueblos also changed quite drastically. Table 2-1 shows the 1680 populations of the different Kiowa-Tanoan Pueblos as reported by Fray Augustín de Vetancurt (Dozier 1970: 122).

Table 2-1: Estimated Tanoan Pueblo Populations in 1680

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Galisteo</td>
<td>800</td>
<td>San Ildefonso</td>
<td>800</td>
</tr>
<tr>
<td>Isleta</td>
<td>2,000</td>
<td>San Juan</td>
<td>300</td>
</tr>
<tr>
<td>Jemez</td>
<td>3,000</td>
<td>Sandia</td>
<td>3,000</td>
</tr>
<tr>
<td>Nambé</td>
<td>600 (may include adjacent Pueblos)</td>
<td>Santa Clara</td>
<td>300</td>
</tr>
<tr>
<td>Pecos</td>
<td>2,000</td>
<td>Taos</td>
<td>2,000</td>
</tr>
<tr>
<td>Picuris</td>
<td>3,000</td>
<td>Tesuque</td>
<td>200</td>
</tr>
<tr>
<td>Pojoaque</td>
<td>?? (earliest: 130 in 1750)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
By the 1800s these numbers were all in the lower triple- and double-digits. The reader should refer to the following sections for modern population estimates.

Following the tumultuous Revolt period, the Pueblos and the neighboring Hispanic villages lived in relative peace as they all attempted to recuperate. The Pueblo area passed from Spanish into Mexican jurisdiction with the independence of the Republic of Mexico in 1821, although this seems to have little effect on the area of New Mexico and Arizona. Mexican governance was short-lived as New Mexico territory passed into US hands in 1846 with the American victory in the Mexican-American War. While at first unhappy with this change, leading to a small rebellion of Pueblos and Hispanic residents against the new American governor in 1847, the Pueblos temporarily benefited from this change of administration. The US military undertook an aggressive campaign against the Comanche, Navajo, and Apache who had been raiding New Mexican communities for years.

However, American governance also would eventually lead to American assimilationist policy, with boarding schools established in Santa Fe and Albuquerque attempting to eradicate indigenous languages and practices. While the effects of these policies were not as immediately dire among the Pueblos as they were elsewhere in the US, by the end of the 20th century they had taken a heavy toll. While all of the known Pueblo languages spoken at the time of the Spanish Entrada are still actively spoken today, with the exception of Piro, it is rare for children to acquire them. Most Pueblo communities thus find themselves having to consider methods of language revitalization and maintenance outside of their traditional practices.
The Pueblos have been quite tenacious in maintaining their traditional religion and spiritual practices, but of course almost over 400 years of contact with Europeans has introduced a number of social changes. The most salient early introduction was the advent of Catholicism. Most of the Pueblo population is at least nominally Catholic nowadays, and many are practitioners of both Catholicism and the indigenous religion. With Spanish Catholicism also came certain practices. When Spanish missionary activity began, they would assign a patron saint to each of the Pueblos. In the modern period, each Pueblo holds a Feast Day on the date associated with their patron saint as one of the largest (public) annual ceremonies. On Feast Days the Pueblos are open to the public and visitors are welcome to view native dances and enter people’s homes to be fed. The practice of Feast Days is undoubtedly derived from traditional harvest ceremonies wherein the community would share the bounty of the year’s crop. Today, however, Feast Days are distributed throughout the year.

Contact with the Spanish also introduced changes to Pueblo government structure. Traditionally Pueblos were theocratic, the religious leaders (called by the Spanish caciques) holding ultimate say over the affairs of the Pueblo. Following Spanish colonization, a number of other governing positions were created, including the position of governor, who was in charge of handling the secular affairs of the community. It is debated whether the position of war captain was also only introduced following Spanish contact or if it is derived from an earlier indigenous position. While the 20th century and American influence has introduced the secular ideology of democracy and representation—realized in some Pueblos by constitutions and tribal councils—the
general split between secular and religious authority is more or less retained amongst all of the Pueblos.

There is a huge literature—academic and popular—that provides something of a survey of the Pueblo area within the historical period. Such accounts consider not only the Tanoan-speaking communities, but also those that speak Keresan, Zuni, and Hopi (and perhaps occasionally provide discussion of the adjacent non-Puebloan Apachean-speaking groups). I will just mention a few of these pieces that seem to be prominent or of good quality.

Perhaps the biggest classic works that provide an overview of Pueblo history and contemporary life are Dozier’s (1970) detailed and general survey (see also Dozier 1960, 1964b), Eggan (1950), which examines contemporary life in the Western Pueblos, and Spicer (1962), which studies the effects on the Pueblos of colonization by Spain, Mexico, and the US. The articles in Ortiz (1972) are of outstanding quality and are almost always cited in studies of the Pueblos. More recent publications that are exemplary are the works of historian and native Jemez member Joe Sando. Sando (1976, 1992, 1998) all building on those earlier works but are able to add insight from a member of one of the communities. Similar works intended for a more general audience are Crane (1928), Goddard (1931), Stubbs (1950), and Underhill (1946/1991). Articles that summarize history within the Smithsonian Handbook of North American Indians, Volume 9: Southwest include Simmons (1979a, b), which together review the Pueblo area from earliest Spanish contact into the modern period, Lange (1979), which discusses Pueblo relations with other Native American groups in adjacent regions, and Eggan (1979), which gives a general overview of the Pueblos.
For information on Pueblo religion, sensitive though the topic is, Parsons (1939b) stands as one of the masterpieces of Southwestern ethnology. On the topic of the Pueblo Revolts, a number of popular literature pieces have appeared in the past 20 years. Probably foremost among these is Roberts (2005). Sando (1979a) is an earlier, but detailed, account intended for an academic audience, while Wilcox (2009) is an archaeologist’s attempt to recast our understanding of Native American perseverance as illustrated by the Pueblo Revolt. Twitchell (1916) publishes excerpts of de Vargas’ journal on the 1696 rebellion. The articles in Sando and Agoyo (2005) discuss Po’pe, one of the leaders of the revolt. Carrillo (2004) gives an overview of the saints assigned to the individual Pueblos, the reason for these associations, and brief details of the history of each village.

As stated, there are many more articles and books on the topic of the Pueblo region as a whole (or of some subset of the Pueblos). The interested reader would not have to look very far to uncover these. Literature addressing individual Tanoan-speaking Pueblos will be pointed out in the relevant sections below.

2.2 Pueblos Abandoned Following Contact

When the Spanish made their first foray into New Mexico in 1540, and still when they returned to colonize in 1598, there were dozens of sedentary farming communities along the Rio Grande Valley and other major waterways of north-central New Mexico. Hodge (1935) counts approximately 80-120 in the Spanish documents (the exact number being confounded by a proliferation of spellings and alternative names from different languages). Many of these villages, perhaps the numerical majority of them, spoke a
Kiowa-Tanoan language, some variety of Tewa, Tiwa, Towa, or Piro (or Tompiro, if this was linguistically distinct from Piro). Over the years, Spanish oppression, disease, depredations from nomadic peoples, and especially the tumultuous period of the Pueblo Revolts and Spanish Reconquest, the majority of these communities were to be abandoned. For the most part, the surviving populations of the abandoned communities would simply move to join with their linguistic relatives at a nearby Pueblo. Some communities disappeared more slowly as intermarriage with the descendants of Spanish colonists increasingly blurred the lines between Native and non-Native communities.

I will not attempt to survey here all of the Pueblos abandoned after Spanish contact. The most notable insofar as they represent the disappearance of an entire ethnic group are the Tano Pueblos of the Galisteo Basin south of Santa Fe, the Piro Pueblos in the area around the modern day city of Socorro (which itself is a settlement established at an original Piro Pueblo called Socorro), the Tompiro Pueblos along both sides of the Manzano Mountains, and Pecos Pueblo, to be further described below. No less important, however, are the numerous Southern Tiwa Pueblos located along the Rio Grande in the modern Albuquerque area and on the east side of the Sandia Mountains, as well as the many Tewa Pueblos north of Santa Fe, which still survive as the names of villages, e.g. Abiquiú (ˀɑ́vékʰuʔ perhaps chokecherry point), Cuyamuge (k’u yemuge place of falling rocks), and the Towa Pueblos of the Jemez Mountains that would eventually merge into Jemez Pueblo.

Aside from archaeological accounts that I have not surveyed yet, there are not many references beyond those given elsewhere in this chapter that discuss in detail Pueblos that were abandoned only after the Spanish colonized the area. Schroeder (1964)
considers the question of what language was spoken by the Tompiro at the Saline Pueblos of the Manzano Mountains. Also mentioned with Ohkay Owingeh below, San Juan Pueblo (1987) is a collection of papers about Yuque-Yunque/San Gabriel Pueblo. Elliott (1993) is a museum publication that overviews the archaeological reports and history of the Towa Pueblo of Giusewa. Schroeder (1979a) provides a detailed grosser overview of Pueblos abandoned within the historical period. While not addressing any of the Pueblos as such, Hickerson (1994) analyzes the documents that tell of the nomadic traders that the Spanish called *Jumanos*, who she proposes spoke a Kiowa-Tanoan language. Literature describing research on the once large and powerful Pecos Pueblo will be discussed in the following subsection.

### 2.2.1 Pecos Pueblo

The one abandoned Pueblo I will address in any detail here is Pecos Pueblo ("Cicuye", possible the same as the later recorded name *k’ak’ora* *place where the stone is on top*). When the Spanish first arrived in New Mexico, this was one of if not the largest of the villages they found, with a population somewhere between 2,000 and 5,000. Located in Glorieta Pass on the edge of the Sangre de Cristos and the New Mexican Plains, Pecos served as a major trading center both before European contact and after. Today the ruins of Pecos are located just off of NM State Road 63, 25 miles southeast of Santa Fe.

Pecos was established in the mid-15th century when various nearby communities within the pass decided to merge into one. With their strategic position at the edge of the plains, Pecos was able to serve as a central hub for commerce between Plains groups and
Pueblo groups. When the Spanish arrived, they found a large, well-fortified Pueblo. They had allied themselves with at least some of the Apache groups, who would camp outside the walls of the Pueblo during periods of trade. Believed to be a Towa-speaking people related to the Jemez, the Pecos were often at odds with their most immediate Tano and Tewa neighbors. Soon enough, however, the newly arrived Spanish proved to be an even more despicable foe and the Pecos joined in the Pueblo Revolt of 1680. The political landscape had changed, however, when the Spanish reconquest came in 1692. Drought and depredations from raiders in the past decade—on top of the toll taken by almost a century of oppressive Spanish domination—had weakened all of the Pueblos to the point that Pecos was willing to welcome back the Spanish, even assisting in the reconquest.

Unfortunately the next century and a half did not go well for Pecos Pueblo. Disease wiped out a significant proportion of the population and the economic situation of the region reduced Pecos’ stature as a trading center. By 1838, there were only around 17 residents left at Pecos. These survivors opted to abandon the Pueblo and join with one of the neighboring communities, eventually settling on Jemez Pueblo. The Pecos were welcomed to Jemez and although integrated into the society, the Jemez have continued to recognize the distinct status of the descendants of the once mighty Pueblo of Pecos.

Due to its size and prominence in the Spanish records, archaeologists have taken particular interest in Pecos. Perhaps of all of the Pueblos abandoned in the historical period, Pecos has the largest literature dedicated to it. In 1960 the ruins were declared a National Historical Landmark and in 1990 the Pecos National Historical Park was established to protect the ruins and allow public visitation.
Pecos Pueblo has a relatively large body of literature associated with it, mostly historical and archaeological in nature. Bagwell (2002), Bandelier (1881a), Hewett (1904), and Kidder (1916, 1917) are archaeological studies of the ruins of the Pueblo. Levine (2004) provides a cultural and economic analysis of Pecos following the depopulation of the Pueblo. Kessell (1987, 2002, 2008) describe the history of Spanish colonization of New Mexico with particular attention given to Pecos. Most of the above summary is taken from Schroeder (1979b).

2.3 Tewa-Speaking Pueblos

At the time of first contact with the Spanish, languages of the Tewa branch were spoken in numerous villages concentrated on the Pajarito Plateau to the north-northwest of modern-day Santa Fe, extending as far north as Abiquiú (approximately 53 miles north of Santa Fe), and as far south as the Galisteo Basin just south of Santa Fe. The southern Galisteo people, who would comprise the main body of emigrants to found Tewa Village at Hopi, were called “Tano” (from Tewa tʰɑˑnú’ downcountry) and are considered a linguistically and culturally distinct people from the more northerly Tewa in Spanish records. This suggests that already at that time Tewa had begun to differentiate into at least two languages. While it appears that the Pajarito Plateau received heavy settlement at around the same time that the northerly San Juan Drainage communities were being abandoned, it is still debated from where the Tewa were immigrating. Ortman (2012) argues for an origin in the area of Mesa Verde in Colorado, while others (Michael Schillaci, personal communication 2013) believe that Mesa Verde was (primarily) Keresan and that the Tewa were migrating from elsewhere in the Rio Grande Drainage.
Being located so close to the Spanish colonial government seat at Santa Fe, the Tewa and Tano perhaps had the most constant and intense interaction with the Spanish (although this statement is highly subjective). It is no wonder that the most renowned and influential leader of the Pueblo Revolt of 1680, Po’pay (perhaps po’p’eːː _ripe squash_), was a Tewa man from Ohkay Owingeh and that the Tewa and Tano Pueblos were all highly involved in that and the subsequent revolts of the 1690s. By the 20th century, the Tewa, while perhaps not the most numerous in terms of population, retained the greatest number of politically independent Pueblo communities of any Kiowa-Tanoan group. At present six out of 19 New Mexican Pueblos are Tewa, in addition to the Tewa-speaking community at Hopi First Mesa in Arizona.

According to the 2010 US Census report on language usage (U.S. Census 2011: 2), Tewa had the 13th largest number of speakers of a Native American language in the United States, with an estimated 4,607-5,176 speakers reported. Approximately 3,247-3,649 of this speaker population are reported as residing within an “American Indian area”, i.e. within the Pueblos. These numbers combine all varieties of Tewa: Arizona Tewa and all dialects of Rio Grande Tewa. They are also self-reported and undoubtedly represent various degrees of fluency. If the tribal enrollment for all Tewa Pueblos, including Tewa Village in Arizona, is approximately 8,225 (by summing the BIA numbers given in the following sections), the census numbers would suggest that over 50% of the enrolled Tewa population speaks the language. My own experience among

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2 The interpretation of this name, transcribed variously as Popé or Po’pay, is uncertain and debatable even to modern Tewa speakers. It is obviously a compound consisting of two monosyllabic lexical morphemes, but the inaccurate written renditions by the Spanish recorders—especially in distinguishing voiceless, aspirated, and ejective stops, not to mention tones—and the number of (near) homophones provide for a few candidate interpretations. The form _po’p’e_ (po’ “squash, pumpkin, calabash” + p’e “ripe; berry, fresh corn”) is suggested by Ortiz (1979b) as the most likely interpretation.
the Tewa Pueblos suggests that this is far from accurate in terms of first language fluency as usually considered. My guess would be that the number of fluent first language Rio Grande Tewa speakers is no more than around 1,000-2,000, plus another 300-500 Arizona Tewa speakers.

The sections below will mention the few references pertaining to individual Tewa communities. There are a number, however, that speak more generally of the (Rio Grande) Tewa communities, although most such works typically give more weight to only one or a subset of the Tewa Pueblos. Harrington (1916), a study of Tewa toponyms reviewed in chapter 3.2, is perhaps the most detailed ethnographic reference across the Tewa area. Ortiz (1969) stands alongside Harrington’s opus as one of the most outstanding studies of Tewa culture, focused on Tewa religion. Alfonso Ortiz himself belonged to Ohkay Owingeh, so his account is biased towards the practices of that particular Pueblo. Laski (1957, 1958) also examines ceremonial and religious structures among the Tewa, while Parsons (1924a, b, 1926b, 1927, 1929a) studies a variety of Tewa social structures. Douglass (1912) also looks at Tewa religion, focusing on the shrines outside the Pueblos. Dance, as a major aspect of Tewa ceremonialism, is well described and discussed in Kurath (1958, 1970) and Sweet (1981, 1985, 2004). Aspects of Tewa economy in the historical period are studied by Ford (1972) and in the prehistoric period by Trierweiler (1990). Reed (1943b) discusses the post-contact history of the Southern Tewa Pueblos. Finally, Harrington (1912a) is a curious linguistic and ethnographic breakdown of the Tewa version of the gambling game cañute.

Forming a numerically large proportion of the Rio Grande Pueblos, more information on the Tewa can often be found in works that address the Pueblo region more
generally. Further ethnographic information on the Tewa can also be gleaned from the literature reviewed in chapter 3.2.

2.3.1 Ohkay Owingeh (formerly San Juan Pueblo)

Ohkay Owingeh (ˀohke ᖀó winger said to mean village of the strong people³), known in the literature and records as San Juan Pueblo—or San Juan de Bautista—from 1598 until 2005, is at present the second largest of the Tewa-speaking Pueblos in terms of tribal enrollment and number of first language Tewa speakers. According to the BIA website, there are approximately 2,723 enrolled members in the Pueblo (BIA 2014), not all of whom live at the Pueblo. The 2010 US census gives the resident population as 6,309 within the 26.4 square miles of the reservation in Rio Arriba County, New Mexico (U.S. Census 2012b: 189). The Pueblo is located near the intersection of NM State Road 68 and 74 and the reservation includes the outskirts of the city of Española, thus the majority of that resident population in the census is not necessarily affiliated with the Pueblo. In 2005 the Pueblo officially changed its name from San Juan to its indigenous Tewa name—Ohkay Owingeh in orthographic representation.

The Pueblo was established in its present vicinity on the east side of the Rio Grande in the 13th century at around the same time so many other Tewa villages were being settled. At the time of the first Spanish visitation in 1540, Ohkay Owingeh was one of two large villages in the area, the other being yúngé ᖀó winger mockingbird place village from which the Spanish named the district Yuque-Yunque. When the Spanish

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³ The etymology of this name is not transparent in modern Tewa. The word for strong is ke: , which looks like it could form the second half of ˀohke :. If this is the case, then the first half of the word could be derived from ˀon jaw, chin, or (I think more likely) from pʾōŋ head. Thus the meaning could be strong headed in the sense of “resistant, stubborn”, a metaphor (and form) which does seem to exist in modern Tewa, cf. pʾohke stubborn.
colonized the district in 1598, they set up their first capitol at Yuque-Yunque, renaming it San Gabriel and leading the resident population to resettle with their brethren at Ohkay Owingeh, which the Spanish named San Juan.

Like all of the other Rio Grande Pueblos near the major Spanish settlements, Ohkay Owingeh suffered heavily under Spanish rule as the colonizers suppressed the practice of their indigenous religion, forced Christianity upon them, and exacted slave labor. It is therefore a mark of pride at Ohkay Owingeh today that Po’pay, one of the primary leaders of the Pueblo Revolt of 1680, was from San Juan. Although not the largest Tewa Pueblo when the Spanish first arrived, Ohkay Owingeh has been able to maintain a comparatively large population over the past 430 years since the Revolt so that in the early 21st century, it can probably be considered the most influential of the Tewa Pueblos in addition to having become the largest.

Modern Ohkay Owingeh enjoys a fair amount of economic success in addition to its large population and cultural prominence. It is able to generate revenue from the OhKay Hotel-Casino located just north of Española and by licensing fishing at San Juan Lakes. The Headquarters of the Eight Northern Indian Pueblos Council is located at the Pueblo, keeping Ohkay at the center of indigenous Pueblo political affairs. Ohkay also has been at the public forefront of Tewa language revitalization, particularly owing to the work of Esther Martinez (cf. chapter 3.2). The Pueblo itself is open to the public on a number of ceremonial days throughout the year, the most notable being the Feast Day of San Juan on June 24.

Ohkay Owingeh has perhaps received the greatest amount of study of any of the individual Tewa Pueblos, being one of the largest and most accessible in the course of the
20th century. Most of this literature refers to the Pueblo as San Juan, having been published before the official name change. Ortiz (1979b) provides a fairly detailed overview of the history and social structure, providing a summary and update of the information in Ortiz (1969). Aberle et al. (1940) and Witt (1969) are thorough studies of population decline and growth and the contributing factors throughout the historical period. On top of these, Ford (1992) is a book-length analysis of the ecology of the population of Ohkay Owingeh. San Juan Pueblo (1987) contains a number of conference articles analyzing various aspects of the history and developments of Yuque-Yunque. For a more personal perspective on the Pueblo, Shutes and Mellick (1996) is a biography of Ohkay potter and language activist Geronima Cruz Montoya while Martinez (2004) includes an autobiography of Ohkay storyteller, language activist, and linguist Esther Martinez. Much of the best language-related literature of chapter 3.2 represents the Tewa of Ohkay Owingeh.

2.3.2 Santa Clara Pueblo

Santa Clara (xa’p’o’ ˀówîŋge singing water, rose water4) is presently the largest of the Tewa Pueblos in terms of tribal enrollment—only slightly larger than Ohkay Owingeh—and definitely in terms of land area and resident population. The BIA lists the enrollment at 2,800 (BIA 2014) while the resident population on the reservation’s 76.85 square miles is 11,021 according to the 2010 census (US Census 2012b: 189). Pueblo land holdings include most of the city of Española, explaining the enormous population.

4 These different translations seem to be folk etymologies. Tewa speakers do not agree on the meaning. Water in Tewa is p’o’, and song is k’hɔ́ while rose is k’há̃ while xa’ is xá, but the composition xa’-p’o’ does not have any apparent meaning except as the name of the Pueblo in the modern language. In the etymology section of Arnon and Hill (1979), Alfonso Ortiz suggests the name could also be composed of xa’ corral + p’o’ water.
The reservation is mostly located in the southern part of Rio Arriba County with a large portion extending into northeastern Sandoval County and a small portion dipping into northern Santa Fe County.

The modern Santa Clara village was established relatively late in the pre-Spanish period, dating to the mid-16th century. The community had existed at two previous village sites nearby in the north within recent Santa Clara memory. They also claim the Puyé cliff dwellings on the reservation as one of their ancient residences. Because of the modern village’s location close to the west bank of the Rio Grande, the Pueblo is prone to flood damage in exceptionally wet years. The Pueblo is just off of NM State Road 5/30 south of Española.

Santa Clara has always been approximately the same size as Ohkay Owingeh and, like the latter, played a major role in the Pueblo Revolts. A religious-political schism at the Pueblo caused tension within the community in the early 20th century, but this was shorter lived than the divide at San Ildefonso (see below) and was peaceably resolved in the 1930s.

With one of the largest towns in north-central New Mexico located within their territory, Santa Clara has been able to prosper economically in the late 20th century. In addition to conducting tourism enterprises at Puyé Cliff Dwellings and Santa Clara Canyon, the Pueblo receives revenue from the Santa Claran Hotel and Casino in Española, the Big Rock Bowl bowling alley and social center, and the Black Mesa Golf Course. Santa Clara is a member of the Eight Northern Indian Pueblos Council. Like Ohkay Owingeh, Santa Clara runs a fairly active language revitalization program and
welcomes visitors to a number of public dances, including the Feast Day of San Antonio on June 13.

Santa Clara Pueblo stands alongside Ohkay Owingeh as the most studied Tewa Pueblo. It is also the Tewa Pueblo with the most thorough ethnographic study done to date. Hill (1982) is a 400-page volume that covers almost every basic aspect of life at Santa Clara Pueblo within the historical period on the basis of both historical documents and Hill’s own fieldwork in the mid-20th century. Hill was also able to make use of Jeançon’s (1930) sizeable unpublished manuscript and notes housed at the National Anthropological Archive. Arnon and Hill (1979) is a much briefer summary, touching only lightly on history and lifestyle at the Pueblo. Dozier (1966b) is a study of the factionalism that briefly divided the Pueblo in the early part of the 20th century. This author, Edward Dozier, was a member of Santa Clara Pueblo, although he wrote very little about his own community. However, Dozier is himself the topic of Norcini’s (1995, 2007) biographical study of an American Indian working in the field of anthropology in the mid-20th century. Nelson (1971) is a biography of Santa Clara artist Pablita Velarde written for a popular audience.

2.3.3 San Ildefonso Pueblo

San Ildefonso (p’ohxʷoge ʔówinge village where the water cuts down through or runs through), or “San I” as it is often locally known, is one of the best known of the Tewa Pueblos owing to its recognizable black-on-black pottery style and famous potters of the 20th centuries. The most famous of these is María Montoya Martínez (cf. Marriott 1948b). According to the 2010 census, the land area of San Ildefonso was 43.74 square
miles, making it the second largest Tewa reservation, while the population was 1,752 (US Census 2012b: 189). Tribal enrollment, however, is much smaller than that at Ohkay Owingeh and Santa Clara, being 628\(^5\) (BIA 2014). This makes it the fourth largest of the six Tewa Pueblos.

At the time of the Pueblo Revolt of 1680, on the other hand, San Ildefonso was the largest of the Tewa Pueblo, having more than twice the population than any other. When the Spanish reconquered New Mexico in 1692, the San Ildefonso population held out for two years, relocating themselves to the top of the prominent Black Mesa at the foot of which their primary village is located. San Ildefonso has been at roughly its present location since the beginning of the 14\(^{th}\) century although they report having moved from the nearby village sites of Potsuwi/Otowi and Tsankawi.

Much of the literature on the history and culture of San Ildefonso written in the 20\(^{th}\) century discusses a major religious-political schism that disrupted the Pueblo social organization through half the century. The village was even physically divided into two halves (with two different plazas and two kivas) with a village houserow serving as an effective wall between the divisions. This physical divide was removed when this houserow was torn down mid-century and the parties involved in the schism arrived at reconciliation by the early 1970s. While more literature on factionalism in the Pueblos focuses on the Tiwa communities, there seems to be a fair amount of consideration of San Ildefonso as well.

The modern village is located off of NM State Road 502 west of US Hwy 84/285. As the closest Pueblo to Los Alamos, San Ildefonso community members could often

\(^{5}\) The official website of San Ildefonso gives the enrollment as “approximately 750” (Pueblo of San Ildefonso, 2014).
find employment there in the mid-20th century. San Ildefonso operates the San Ildefonso Pueblo Museum, but otherwise does not operate any major tourism ventures nor does the Pueblo have a casino. Potters and artists from the community have had a great deal of success, however. The annual Feast Day of the patron saint, San Ildefonso, is on January 23.

San Ildefonso Pueblo’s official website is [http://www.sanipueblo.org/](http://www.sanipueblo.org/). Whitman (1940, 1947) are two published ethnographic accounts following from the author’s study at the Pueblo in the early mid-20th century. Marriott (1948b) is a biography of María Martínez, one of the most famous potters of the Pueblos while Dunn (1956) is a short account of Awa Tsireh, a noted mid-20th century painter from San Ildefonso. Edelman (1979) is the most recent summary of the Pueblo’s history and way of life.

### 2.3.4 Nambé Pueblo

Along with the other two Tewa Pueblos of the Pojoaque Valley, Pojoaque and Tesuque, Nambé Pueblo (Tewa: ną́be ʔówíγge round earth village or mound of dirt in the corner village) has received less attention in the popular and academic press than the northern three Tewa Pueblos described above. As such, there are no histories or ethnographies to my knowledge that detail life at the Pueblo or the developments of the community in historical times, and so little information available.

Nambé Pueblo is located in Santa Fe County, approximately 16 miles north of Santa Fe, off of NM Hwy 503. The BIA gives the tribal enrollment as 643 (BIA 2014) while the 2010 census states that the resident population is 1,611 (US Census 2012b: 189). Nambé land covers approximately 32.07 square miles, although this territory is
checker-boarded with non-reservation land, the non-native village of Nambé being interleaved with Nambé Pueblo residences. The main village is centered on a two-part single plaza with a single round kiva and church, but most of the Pueblo consists of modern housing distributed along the roads leading up to and away from the heart of the village.

The Pueblo was established around 1300 CE. The population in the Nambé area at the time of Spanish colonization suggests it was a relatively large village, albeit perhaps still smaller than its northern Tewa neighbors. Ruins in the area (including a site now under Nambé Lake after a dam was built in the 1970s) suggest this population may not have been concentrated in the current village in the pre-contact period. The Pueblo population had decreased substantially by the beginning of the 20th century and much of the literature from the late 19th century through the mid-20th century writes off Nambé as having been largely Hispanicized. If these reports are accurate, then the community has seen a reblossoming of its Tewa identity over the past century, reviving ceremonial dances with the help of Tewa from other Pueblos (and Nambé in turn has helped neighboring Pojoaque to revive some of its ceremonies). Today Nambé is a small-to-medium sized New Mexican Pueblo with a solid Tewa identity. While there are only 2-3 dozen fluent speakers of Tewa left, the community maintains a tenacious language revitalization program.

The primary revenue for the Pueblo comes from tourism and fishing at Nambé Falls Recreation Area a few miles up the road from the village, which includes Nambé Falls and Nambé Lake. The lake was created by damming Nambé Creek in the 1970s. The Pueblo also recently set up a gas station and travel center on US Hwy 84/285, south
of Pojoaque near the Buffalo Thunder Resort. While there has been discussion of building a
casino over the past two decades, the decision is contentious—support within the
community has been mixed, so it is not clear if such plans will come to fruition anytime
soon. Nambé’s patron saint is Saint Francis de Assisi and its Feast Day is October 4th,
one of the few times a year the Pueblo is open to the public.

Speirs (1979) is the only summary of the Pueblo’s history, but provides very little
actual information. Hazen-Hammond (1999) is a photographic children’s book set at the
Pueblo. Romero (1976) is a short novel set in Nambé Village, but says little of the
Pueblo. The official website of the Nambé tribe is http://nambepueblo.org/.

2.3.5 Pojoaque Pueblo

Pojoaque Pueblo (Tewa: p’ohs’wæge ʔówíŋge water-drinking place village) has
a rather shaky and discontinuous history, having been depopulated and abandoned,
repopulated, and abandoned again at various times following the Pueblo Revolt of 1680.
Since being reestablished for the last time in 1934, however, it has had remarkable a
growth in population, economic success, and cultural revival, especially in the late 20th
and early 21st century.

According to the 2010 census, Pojoaque is a village of approximately 3,282
residents within the 21.14 square miles of reservation land (US Census 2012b: 189)
located in Santa Fe County on US Hwy 84/285 approximately 15 miles north of Santa Fe.
The traditional village area is located to the east out of sight of the highway. An overpass
crossing the highway a couple miles south of the town displays the Tewa name of the
Pueblo ("POSUWAEGEH") in bright colors. The enrollment for the tribe is 327 (BIA 2014).

There have been Tewa villages in the Pojoaque area since around 1300 CE, populated at about the same time as other Tewa communities were established on the Pajarito Plateau. When the Spanish reconquered New Mexico in 1692 following the Pueblo Revolt of 1680, in which Pojoaque took an active role, the Pueblo was severely depopulated, its residents scattering amongst the other Pueblos. While Pojoaque was resettled by many of its residents a few years later in 1706, it would be centuries before it would again be a stable and blooming community. When New Mexico passed into US jurisdiction in the latter half of the 19th century, the tiny village had to take special effort to claim title of Pueblo lands, although they did succeed. In 1864 Pojoaque was presented with a silver-headed cane by US president Abraham Lincoln alongside the other Pueblos of New Mexico in recognition of their sovereignty. Despite this recognition, the community continued to dwindle and had been effectively abandoned by Tewa residents by 1909.

In the 1920s and early 1930s a small number of Pojoaque descendants who had land holdings on Pojoaque territory decided to try to reestablish the village and in 1934 a new Pojoaque land grant was created. The 14 founding members expelled the Hispanic and Anglo squatters who had encroached on tribal land and used the reimbursements they received from the US government and state of New Mexico to entice other Pojoaque descendants to return to the Pueblo. While this dispersal—alongside the US acculturation process of the late 19th and early 20th centuries—did mean that the original
(undocumented) Pojoaque dialect of Tewa was gone by the time language revitalization efforts could get underway, the community was finally stable again.

Since being reestablished, Pojoaque has had outstanding success in its economy and cultural revival. Perhaps due to its central location on the highway and intermediate position among three other Tewa Pueblos (San Ildefonso, Nambe, and Tesuque), Pojoaque serves as an economic hub for the Pojoaque Valley. The Pojoaque school system serves students from all four of these southern Tewa Pueblos, including classes on the Tewa language (although the teachers mostly come from San Ildefonso and Tesuque).

In addition to banks, gas stations, a grocery store, and restaurants, Pojoaque also has the Poeh Cultural Center, a museum of Pueblo artwork and history of the region established in the late 1980s.

Pojoaque Pueblo also presently operates two casinos. The smaller and older Cities of Gold Casino was opened in the 1990s and is located at the intersection of US Hwy 84/285 and NM State Road 502, at the edge of the town’s business district. In 2008 the large and expensive Buffalo Thunder Resort and Casino was opened, located alongside the highway a couple miles south of the village. The Pueblo also owns the Towa Golf Resort near Buffalo Thunder. Together these investments provide the Pueblo an opportunity for a large amount of revenue. These, alongside other business endeavors since the 1970s have provided Pojoaque with the financial resources to actively pursue linguistic and cultural maintenance and revival programs in spite of its disrupted history. Today there are a handful of fluent Tewa speakers from other Pueblos resident at Pojoaque and the community is making an active effort at language revitalization in the early 21st century. With its cultural revival, Pojoaque is also able to welcome visitors to
its Feast Day on December 12 in recognition of its patron saint, Nuestra Señora de Guadalupe.

Lambert (1979) is the only summary history of Pojoaque Pueblo. The official website of the tribe is http://pojoaque.org/.

2.3.6 Tesuque Pueblo

Tesuque Pueblo (teˀc’úgé ˀówîŋge narrow place of the cottonwood trees village; structure at a narrow place⁶) is the southernmost of the surviving Tewa-speaking communities in New Mexico. It is also perhaps one of the most conservative Tewa Pueblos and the most closed off to outside researchers. Even the tenacious John P. Harrington had little success in eliciting linguistic and cultural information from Tesuque Tewa and little has changed in this regard in the past 100 years. As such, there is not much published information—linguistic, historical, or ethnographic—on Tesuque.

Tesuque is located in Santa Fe County approximately 9-10 miles north of the city of Santa Fe, just west off of US Highway 84/285. Hispanic residences nearby on Pueblo land are given the name Tesuque Village. It is among the smaller of the Rio Grande Pueblos, with a current enrollment of approximately 404 (BIA 2014) and a population of about 841 on the 26.47 square miles of reservation land according to the 2010 census (US Census 2012b: 189).

Tesuque Pueblo was established at around the same time as Nambé and Pojoaque, at the end of the 12th century. Tewa from Tesuque served as runners for the Pueblo Revolt of 1680, spreading information and coordinating the uprising. The modern village

⁶ The form is ambiguous: the te- could represent either te: cottonwood tree or te: structure, house, wagon. Edelman and Ortiz (1979: 335) provide the latter interpretation while most other sources give the former.
was actually established in 1694 following the Spanish Reconquest, the original village having been abandoned after 1680. The location of the original site is unknown, although it was apparently not far from the current village location. In 1973 Tesuque was designated an Historical Landmark by the National Register of Historic Places, being one of the oldest continuously inhabited villages in the US.

Tesuque Pueblo today owns Camel Rock Casino, located on the east side of US Hwy 84/285. While at the risk of being overshadowed by Pojoaque Pueblo’s newer and much larger Buffalo Thunder Resort and Casino located just a few miles north, Camel Rock Casino is in a visible location just north of Santa Fe and does provide Tesuque with the opportunity for a fair amount of revenue. The Pueblo also owns Tesuque Pueblo Flea Market, visible to the west of the highway on the plains below the Santa Fe Opera, and Camel Rock Suites in Santa Fe. Despite its conservatism and secrecy, Tesuque opens its doors to the public for its San Diego Feast Day on November 12 and for a handful of other events.

Edelman and Ortiz (1979) is the only summary of the history and lifestyle of Tesuque with which I’m familiar. As with Nambé and Pojoaque, there has been very little study of the Pueblo.

2.3.7 Tewa Village (Hopi Reservation)

Tewa Village, aka Hano, is the one Tewa community located outside of New Mexico. It is located on First Mesa on the Hopi Reservation in Navajo County, Arizona, alongside the Hopi villages of Walpi and Sichomovi. The village Polacca at the base of
the mesa and the nearby town of Keams Canyon also house a number of Tewa, although Tewa Village is the center for Tewa ceremonies and community events.

The Arizona Tewa are formally members of the Hopi tribe and as such are not distinguished in census data. The 2010 census gives the resident population of the 15.74 square miles of First Mesa as being 1,555 (US Census 2012a: 157) while the population of the full 2,531.93 square miles of the Hopi Reservation is 7,106. Kroskrity (2005: 92) gives the Arizona Tewa population as approximately 700. The formal membership in the Hopi tribe is not merely a matter of recognition from the US government. Tewa participate in Hopi politics and ceremonies and there has been a large amount of intermarriage giving personal affiliation with both groups for much of the Tewa population. Most Tewa (who are not monolingual English speakers) speak Hopi in addition to Arizona Tewa.

Tewa Village was established in 1700 when a large group of Tewa left New Mexico following the second Pueblo Revolt of 1696. The population set off from a village called San Cristobal (c’éywa de white band), located somewhere in Tewa territory, but most of the group is thought to have been comprised of Tano (Southern Tewa) rather than Tewa proper (Northern Tewa)⁷. The Tano inhabited the Pueblos of the Galisteo Basin, geographically nearest to the Spanish capitol at Santa Fe, thus fear of retribution following the reconquest must have been strong. According to Tewa oral history, however, the leaders of Walpi Pueblo had extended an invitation to them to come

⁷ Ortman (2012: 128-129) argues on the basis of linguistic data that the Arizona Tewa may be descended from Northern Tewa due to certain similarities to San Juan Tewa and that Santa Clara may represent descendants of the Tano. More careful consideration of the linguistic data, however, suggests that Arizona Tewa was already distinct from the varieties of Rio Grande Tewa before they left New Mexico, lending support to the contention that they are the descendants of the Tano distinguished from Tewa in Spanish records.
to First Mesa to help defend against raids from Utes and Paiutes. In return the Hopi
would grant the Tewa land for farming. The Tewa successfully repelled the attacks, but
according to Tewa tradition, the Hopi initially reneged on their promise, for which the
Tewa cursed them. But, eventually the Tewa were able to acquire land on First Mesa and
have remained at Hopi ever since.

Because the Tewa are considered outgoing and outspoken by the Hopi, the latter
have made use of the Tewa as linguistic interpreters and negotiators in their dealings with
the Navajo, Spanish, and US government. While the Hopi kept the Tewa segregated for
two hundred years, by the 20th century the Tewa were able to participate in Hopi
ceremonies and had become fully integrated into First Mesa society. The converse is not
true: Hopi are not permitted to participate in Tewa-particular ceremonies and do not learn
the Tewa language8. While the Tewa do not appear to have any major modern economic
ventures separate from that of the Hopi, the Arizona Tewa do actively distinguish
themselves from the Hopi and maintain a fierce pride in their distinct identity.

The Hopi tribal website is http://www.hopi-nsn.gov/, but this provides no specific
information on the Tewa. A history and description of life at the Pueblo is the
Smithsonian Handbook entry by Stanislawski (1979). However, fuller mid-20th century
ethnographies are to be found in Dozier (1954a, 1966a). Dozier is also able to provide
some interesting commentary, being himself a Tewa from Santa Clara. Kroskrity (1993),
further reviewed in chapter 3.3, is an ethnographic study with special reference to
language usage. Reed (1943a) is an early study of Arizona Tewa history. Flint (1975)
provides an ethnographic study of changes to Arizona Tewa culture as they moved from

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8 This is famously part of the curse that the Tewa cast upon the Hopi when the Hopi refused to give them
the land they had promised.
the Eastern Pueblo area to the Western area. For more personal and insider views of Tewa Village, Parsons (1925) is a publication and analysis of an Arizona Tewa man’s journal from 1920-1921, while Yava (1978) is an autobiography and Black (2001) a biography of two prominent Arizona Tewa men living through the societal changes of the 20\textsuperscript{th} century. Kroskrity (1983b) is a book review of the former from the perspective of an ethnographer.

\section*{2.4 Tiwa-Speaking Pueblos}

The Tiwa have been divided—geographically and linguistically—into two different sets of communities throughout the historical period, representing a discontinuous spread along the Rio Grande. Taos and Picuris Pueblos have been the sole representatives of the Northern Tiwa throughout the historical period, being not only the northernmost of the Tiwa groups, but also the northernmost of all of the Pueblos. There do not seem to have been any more Northern Tiwa Pueblos that were abandoned after the Spanish arrived. Separated from their northern relatives by the cross-cutting chain of Tewa, Keresan, and maybe Towa Pueblos, Sandia, Isleta, and Ysleta del Sur Pueblos represent the surviving communities of Southern Tiwa. When the Spanish first arrived, Sandia and Isleta simply represented the largest of a string of Southern Tiwa Pueblos extending along the Rio Grande between the area of the modern cities of Bernalillo and Los Lunas and on the east side of the Sandia Mountains. The Spanish called this region Tiguex\textsuperscript{9}. Most of these Tiwa Pueblos disappeared in the years between Spanish colonization in 1598 and the Pueblo Revolt of 1680. Following the Revolt period, all of

\textsuperscript{9} This is probably derived from the word for Tiwa, \textit{tjwa}, with some kind of old locative or number suffix attached.
The Southern Tiwa Pueblos had merged into modern Sandia, Isleta, and the newly formed Ysleta Del Sur.

Their geographic distribution suggests that the Tiwa developed as a distinct people in-situ on the Rio Grande (Ortman 2012). All of the Tiwa Pueblos are very culturally conservative and it is only with difficulty that linguists and anthropologists have been able to work with the communities. While the modern attrition of Tiwa speakers as young people switch to English has divided opinions within the Pueblos as to what steps they should take to revitalize and maintain the languages, all sects show a marked pride in their Tiwa identity and wish to maintain their traditions.

The 2010 US Census Bureau’s report on language usage (US Census 2011: 2) lists Tiwa as having the 19th largest number of speakers of any Native American language within the United States. Combining Southern Tiwa dialects, Picuris Northern Tiwa, and Taos Northern Tiwa into one, the report lists 1,535-2,009 speakers of Tiwa, 1,143-1,466 of whom reside within the Pueblos. The 2000 census reports 2,190 speakers of Tiwa 5 years of age or older. Note that this is out of a total enrolled Tiwa population of 8,693 (by summing the BIA tribal enrollment numbers given in the following sections). As with the Tewa report above, these speaker numbers undoubtedly reflect varying degrees of fluency. From my own observations, the number of fully fluent first language speakers is probably closer to the low end (~1,500), most of these speaking Isleta Southern Tiwa and Taos Northern Tiwa.

Because of the geographic and subsequent cultural divide, there is not any literature that addresses all Tiwa Pueblos collectively, or groups the two Northern Tiwa
or the three Southern Tiwa Pueblos together. For references, see the literature for the individual communities below.

2.4.1 Taos Pueblo

Taos Pueblo (tiôtʰo at the village; ʔialɒʰaymup’chi tôilbo at the mouth of red-willow canyon\textsuperscript{10}) is the most famous of the Tiwa-speaking Pueblos, and indeed may be the most famous of all of the Pueblos of New Mexico as a whole. Its impressive four-story architecture, one of the few such traditional structures surviving in the modern Pueblos, has long captured the imagination of American tourists and artists. As such, there is a relatively large body of literature on the Pueblo. On the other hand, Taos has also been highly conservative and secretive of its traditional ceremonies and lifestyle, so much of this literature only succeeds at scratching the surface of Taos language and culture. The name Taos is probably just a Spanish butchering of tiôtʰo, but cf. Jones (1960) for some fanciful interpretations and Trager (1960b) for a rebuttal.

Taos Pueblo itself is located in Taos County about two miles north-northeast of the city of Taos. The 2010 census gives the population on the 154.91 square miles of Pueblo land as 4,329 (US Census 2012b: 189). Tribal enrollment is 2,443 (BIA 2014). Of these, approximately 150 people live within the traditional village while another 1-2,000 reside in modern housing surrounding the old Pueblo.

The modern Pueblo of Taos was built in the mid-to-late 15\textsuperscript{th} century, moving from the nearby site called Cornfield Taos by archaeologists. The latter had been built only about 100 years earlier after the Pot Creek Pueblo site was abandoned at around

\textsuperscript{10} The latter is the more formal name of the Pueblo used in ceremonial context, often shortened to ʔialɒʰayba. In everyday speech, however, the former label is used far more frequently.
In 1965 Taos was named a National Historical Landmark and in 1992 a World Heritage Site for being one of the longest inhabited villages in the US.

When the Spanish first arrived, Taos was one of the largest Pueblos of the Rio Grande, serving as one of the major trading centers between the Pueblos and the Plains. Because of this affiliation, Taos has often been commented by both scholars and Natives to have been heavily influenced by Plains cultures. This may be underscored by Taos’ geographic distance from most of the other communities of the Rio Grande Valley. However, for all intents and purposes, Taos has all the trappings of New Mexico Pueblo. It was due to Taos’ distance from the major Spanish colonies that the leaders of the Pueblo Revolt of 1680 made use of the kivas at Taos to plan the uprising.

Modern Taos Pueblo has been able to take advantage of its scenic location and historic status to generate income from tourism. Artists and anthropologists have been visiting the Pueblo since the late 19th century once the railroad made the Southwest more accessible to Americans and this tourist industry has not abated going into the 21st century. Taos was able to use its visibility—and acquire more—in its mid-20th century fight to reclaim Blue Lake, a sacred site in the mountains above Taos. In 1906 the US government had annexed the area around the lake to declare it National Forest Land. Fearing desecration of one of their most important religious sites, Taos Pueblo fought in the courts for many years to reacquire it. Finally in 1970 President Richard Nixon signed a decree returning the lake and surrounding land to the Taos tribe.

Presently Taos generates revenue primarily from tourism. The Pueblo does own Taos Mountain Casino on the small road between the city of Taos and Taos Pueblo, but

Pot Creek has often been thought to be the site of origin from which the Taos and Picuris populations separated.
its small size and out-of-the-way location makes it less lucrative than the Pueblos farther south in the state. Opinion within the Pueblo is split between conservative elements that wish to have little participation in modern American economic pursuits and those elements that wish to make investments that could generate revenue for the Pueblo, although both elements appear to be dedicated to the preservation of traditional Taos language and culture. Many young people at Taos still acquire the language to at least partial fluency and there are active attempts at developing curricula for a language program. Indigenous cultural activities have never flagged and the Pueblo is open to the public for a number of ceremonies, including the Feast Day of San Geronimo on September 30. Taos Pueblo, along with Picuris, is one of the only non-Tewa members of the Eight Northern Pueblo Indian Council.

There are perhaps more publications on Taos Pueblo than on any other Tanoan-speaking Pueblo in New Mexico. However, because of the conservative nature of the community, most of this literature is relatively superficial. Miller (1898) is one of the earliest ethnographic studies of any of the Pueblos. Perhaps the best ethnographic studies are Bodine (1967), the massive Fowles (2004)—which focuses primarily on Taos, but also attempts to reconstruct Northern Tiwa culture more generally—and M. E. Smith (1967, 1969), which provide detailed study of government at Taos Pueblo. Siegel (1949) provides commentary on Taos social structures in a Pueblo context. Parsons (1936) is perhaps the most famous ethnographic work on Taos, but it is widely criticized by both Taos community members and ethnologists as being misrepresentative, Parsons’ consultant being considered a marginal member of the community. Brandt (1980) studies secrecy and the control of information at Taos Pueblo while Fenton (1957) looks at
factionalism at the Pueblo. Hawley Ellis and Brody (1964) interpret social history at Taos Pueblo on the basis of the study of ceramics. Gordon-McCutcan (1991) describes the 60 year legal battle to regain control of the sacred Blue Lake. Bodine (1979) succinctly summarizes the history and lifestyle of Taos Pueblo up until the 1970s. Current information on Taos Pueblo can be gleaned from their website:


There are of course a number of popular literature pieces. Bodine (1977/1996), Grant (1925/1976), and Reno (1963) are all essentially elaborated tourist pamphlets. Keegan (1972, 1991), Wood (1989), and Wood and Wood (1972) are all popular photographic ethnographies, although the prose provided does not always pull from the most reliable sources. Warm Day (2004) and Orona-Ramirez and Warm Day (2006) are two among a small number of children’s books that feature Taos tribal members. This summary undoubtedly only scratches the surface of the literature targeted towards a popular audience that heavily features Taos Pueblo.

2.4.2 Picuris Pueblo

Picuris Pueblo (p’inweltʰa ~ p’iwweltʰa place of the mountain warriors\(^\text{12}\)) is at present the smallest of the Pueblos in New Mexico. The BIA gives the tribal enrollment as 324 (BIA 2014) while the 2010 US census gives the resident population of Picuris’ 27.36 square miles as 1,896 (US Census 2012b: 189). The latter large number seems to

\(^{12}\) The etymology of this name is uncertain. The first element is undoubtedly p’in mountain (> p’i’w- by phonological assimilation). The second element is thought to be wil, an old stem meaning “warrior, fighter”. The Tewa name for Picuris is p’i’wîfî, where the second element wîfî refers to a mountain pass. Both the modern Tiwa and the Tewa names probably descend from the same source, but one or the other interpretation (or both) is likely a folk-etymology. The name “Picuris” is based on Oñate’s “Picuries” and is thought to be a borrowing from a Towa name for the Pueblo (Brown 1979: 276-277).
include the nearby village of Peñasco and only about 100 or fewer people live at the old Pueblo itself. These numbers are in stark contrast to the population of 3,000 counted in 1680. Indeed, at the time the Spanish first entered New Mexico, Picuris stood alongside Taos and Pecos as one of the largest Pueblos, serving as a major center of trade with the Plains, with multi-story towers to rival those still seen at Taos.

Picuris was established in the late 12th century, possibly by Tiwa moving from Pot Creek Pueblo. Located on the slopes of the Sangre de Cristos Mountains at the edge of the Plains, Picuris welcomed traders from both the Pueblos and the Plains and served as a major point of commerce. This was still true when French traders coming from the east first arrived in New Mexico. Relations with the Spanish, on the other hand, proceeded in much the way that they did in the other Pueblos and Picuris joined with the others in the Pueblo Revolt of 1680 and the subsequent revolts following the reconquest in the 1690s. Following the revolt in 1696, the Picuris Tiwa abandoned the village and went to live with allies on the Great Plains. It was ten years before the Spanish could induce them to return to their Pueblo in 1706. Following this return, Picuris suffered heavy depopulation over the next two centuries, shrinking to its present size.

Modern Picuris Pueblo is situated in a small hidden valley off of NM State Hwy 75. Although located just off of the scenic “High Road to Taos” popular with motor tourists, Picuris is too far out of the way to produce much revenue from tourism or a local casino. However, the Pueblo does administer fishing licenses for Pu-na Lake and owns the Hotel Santa Fe and Amaya Restaurant in Santa Fe. The Pueblo also operates the Picuris Pueblo Museum, increasing the profile of their small but proud community. Picuris is a member of the Eight Northern Pueblo Indian Council. Like other Pueblos,
Picuris opens its doors to the public for certain ceremonial days, their Feast Day of San Lorenzo being on August 10.

There are a handful of decent publications concerning Picuris Pueblo. Schroeder (1974) is the best source for historical information on the Pueblo, Brown (1979) then providing a succinct summary. Stanley (1962) is a popular account of the history and modern life of the Pueblo. Parsons (1939a) is an ethnography of Picuris, much briefer than her studies of Taos or Isleta, but organized in much the same way. Siegel (1965) studies the results of the stresses of the preceding centuries on the social structure of Picuris in comparison to closely related Taos. Most recently, Darwin (2004) examines the impetus for and cultural significance of bison restoration at the Pueblo.

2.4.3 Sandia Pueblo

Sandia Pueblo (tuʃ ʃɨɾ tuy green/blue reed village; nəfi’əθ at the dusty place\textsuperscript{13}) in some ways has a history comparable to that of Picuris Pueblo. At the time of the Spanish \textit{Entrada}, Sandia was the largest of the Southern Tiwa villages, but following the Pueblo Revolt and a temporary exodus away from the Pueblo, it is now among the smallest. It presently has a tribal enrollment of 485 (BIA 2014) with a local population of 4,965 within the 38.35 square miles of reservation land in Sandoval County (US Census 2012b: 189). The reservation encompasses the outskirts of the city of Bernalillo, which is the reason for the large population figure.

The modern Pueblo is located on the east side of the Rio Grande, between NM State Hwy 85 and Interstate 25. Sandia has existed as a community in the area between

\textsuperscript{13} The first is the name given to the Pueblo now. The latter is a name recorded up until the early 20\textsuperscript{th} century. The Spanish name of \textit{Sandia watermelon} is most likely attributable to the Sandia Mountains, which take on a striking rosy hue at sundown.
the Sandia Mountains and the Rio Grande since around 1300 CE, although it has only been in its present location since 1617. There was mixed participation by the Southern Tiwa in the Pueblo Revolt of 1680, although this may have been due to their distance from the rest of the Pueblos, but Sandia had enough of a part that they abandoned the village in 1680. When governor Otermín retreated with other surviving Spanish colonists to the southernmost Pueblos, he found Sandia mostly empty and burned it in retaliation. While partly rebuilt after the Spanish left, the Pueblo was burned again in a Spanish foray in 1681 and had not been rebuilt when the Spanish reconquered New Mexico in 1692. Following these events, the Sandia Tiwa fled to Hopi and established the village of Payupki at Second Mesa (Hawley Ellis 1979: 354). They may have been joined later by other Southern Tiwa exiles from Isleta and other former Pueblos who managed to escape capture and the march to El Paso (see next two sections). It would not be until 1748 that the Spanish would manage to convince these Sandia Tiwa to return to their former village. Sandia was thus repopulated by a mix of Sandia and Isleta Tiwa and some Hopi (although whether any of the Hopi remained at Sandia and assimilated or returned to the Hopi mesas is unknown). After this resettlement, however, Sandia was never again the large Pueblo it had once been.

Despite its disrupted history—or perhaps partly because of it—Sandia Pueblo has been fairly conservative and guarded, despite its close proximity to the ever growing urban sprawl of Albuquerque to the south and the smaller but growing town of Bernalillo to the north. Sandia has been able to increase its financial resources in the 21st century with its large and very visible Sandia Resort and Casino on the north edge of Albuquerque, the Bien Mur Indian Market Center, and by providing fishing licenses at
Sandia Lakes. In the past decade, it has had a successful language revitalization program despite a relatively small number of Tiwa-speakers, although this program has been disrupted at various points by political changes. As elsewhere, non-tribal members may visit the Pueblo for various ceremonial occasions, including the Feast Day of San Antonio on June 13.

Sandia Pueblo has the smallest body of historical and ethnographic literature of any of the Tiwa Pueblos. This is undoubtedly due to both its small size in the historical period and conservativeness in permitting research. Brandt (1979) is the Smithsonian Handbook summary of Sandia, but does not present much of a picture of modern or historical Pueblo life. Simmons (1969a, b) are the definitive ethnographic works on Sandia Pueblo as of the mid-20th century. White (1945) provides a few sparse notes on ethnographic observations within the Pueblo. Information on the modern economic interests of the Pueblo can be found at the official website: http://www.sandiapueblo.nsn.us/.

2.4.4 Isleta Pueblo

Isleta Pueblo (tiy at the village; šiexʷib'ag flint kick-stick place\textsuperscript{14}) is at present by far the largest of the Tiwa-speaking Pueblos and indeed is the largest of the Kiowa-Tanoan speaking Pueblos. The Bureau of Indian Affairs gives the tribal enrollment as 4,441 (BIA 2014). Its resident population on its 330.05 square miles is 3,400, most of these being tribal members. Pueblo land is spread across Bernalillo, Torrance, and Valencia counties, located between the cities of Albuquerque and Los Lunas. In addition

\textsuperscript{14} The former is the everyday label given to the Pueblo. The latter is its formal name.
to Isleta Pueblo proper, the reservation includes the Tiwa farming community of Chikal and the Laguna Keres colony of Oraibi.

In 1680 Isleta Pueblo was about 2/3 the size of Sandia, being centered on a delta between the Rio Grande and a river torrent coming out of the Manzano Mountains (thus the Spanish name Isleta *little island*). Being among the southernmost of the Pueblos, Isleta did not participate in the initial Pueblo Revolt of 1680\(^{15}\). When governor Otermín and other surviving Spanish colonists retreated to Isleta, many Tiwa who had not already fled the Pueblo retreated with the Spanish to El Paso. Some of these were captives, some were converts, but many probably simply feared retaliation from their northern Pueblo brethren for not joining in the revolt. Isleta was burned in 1681 when the Spanish made a foray into New Mexico and more captives were led down to El Paso. Most of the rest of the Isleta Tiwa escaped to Hopi, probably joining the Sandia Tiwa at their village of Payupki. Isleta was resettled at its current location in 1742 when Spanish friars convinced over 400 Tiwa to repopulate the village. Following a schism at the Keresan Pueblo of Laguna in 1880, Isleta invited a group of the Keres to settle on their land at Oraibi Hill. This may have been a strategic move to gain access to the religious relics that the Keres brought, many of Isleta’s having been destroyed by the Spanish. This Keresan population maintains its identity in Isleta ceremonialism to this day, although it is not clear how much Keres is still spoken.

Modern Isleta Pueblo, along with Taos, has the largest reserve of fluent Tiwa speakers, numbering perhaps over 1,000. Like many of its northern neighbors, Isleta has opened a large casino to generate revenue for the Pueblo. Isleta Resort and Casino has

\(^{15}\) It is not clear how much of a conscious decision this was. Being so far south, it is possible that Isleta was simply not kept informed of the plans for the uprising.
had a large amount of success. The casino even temporarily carried the Hard Rock Café mantle for a few years in the early 2000’s, but the cost of carrying the title must have been too exorbitant and the casino returned to its name affiliating it with the Pueblo in the early 2010’s. The Pueblos also owns the Isleta Eagle Golf Course and Isleta Lakes Recreational Complex, which aim to bring in high-income tourists. Isleta makes use of these and its indigenous resources to maintain an ongoing language revitalization and maintenance program.

Information on current secular interests at Isleta Pueblo can be found on their website, http://www.isletapueblo.com/. While Isleta does not have as large a body of literature as the slightly smaller but more famous Taos Pueblo to the north, the literature it does have is quite detailed. Elsie Clews Parsons published various notes on Isleta (1920, 1921) leading up to her massive ethnography of the Pueblo (1932a/1974). Contemporaneously, Esther Goldfrank produced a short article of ethnographic notes (1926). Goldfrank would subsequently edit and publish a set of correspondences between an Isletan artist and Parsons (Goldfrank 1962, Parsons 1962), later adding her own further ethnographic analysis of the exchange (Goldfrank 1967). French (1948) is a lengthy study of factionalism at Isleta in the early 20th century while Keleher and Chant (1940) provides a biographical account of a catholic priest assigned to the Isleta Pueblo Mission and his interactions with the community. Harvey (1963) analyzes the Isleta motivation for permitting the establishment of the Oraibi community by exiles from Laguna. Finally, Hawley Ellis (1979) gives a summary of the history and social structure at Isleta. Since the 1970s, however, there has been very little anthropological research done at the Pueblo to my knowledge.

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2.4.5 Ysleta Del Sur Pueblo

When the Spanish first arrived in the Southwest, the area of Puebloan settlement extended between Taos in the north and the Piro Pueblos around modern Socorro in the south. Following the Pueblo Revolt of 1680, however, the Spanish created a new southernmost extent to the Pueblo area by forcing Tiwa and Piro settlement in the area of their colony at El Paso. Ysleta del Sur is the surviving result of this move.

Ysleta del Sur (“Ysleta D” for short) is the one Pueblo community that exists in Texas (and indeed one of the few Native American reservation in the state). The BIA lists the tribal enrollment as 1,270 (BIA 2014). The 2010 census (US Census 2012d: 793) gives the total land area of Ysleta holding as 5.03 square miles, although only .12 square miles of this is actual reservation. The remaining 4.91 square miles is trust land. Within the reservation land, the census gives the population as 350, with another 454 residing on the trust land. Located in El Paso County, Ysleta del Sur is entirely encompassed by the Cities of El Paso and Socorro, TX, its territory indeed being discontinuous and checkerboarded with municipal holdings. It is also located only about one mile from the Zaragoza International Border with Mexico. While descended from the Tiwa and Piro of New Mexico, the people of Ysleta del Sur identify themselves using the Spanish spelling “Tigua”.

The birth of Ysleta Del Sur began with the Pueblo Revolt of 1680, when 317 Southern Tiwa and Piro retreated (willingly or unwillingly) to El Paso with the Spanish. This number was further augmented when the Spanish raid in 1681 brought back another 385 Tiwa from Isleta. These people were encouraged to establish villages of their own in the El Paso area. The Piro created the villages of Socorro and Senecū—although these
had died out as identifiably Native communities by the beginning of the 20th century—and in 1682 the Tiwa established Ysleta Del Sur. Ysleta succeeded in maintaining its Tiwa identity even as the community was joined by non-Tiwa Natives and Hispanics from the neighboring villages and despite being far from their homeland. In the latter half of the 19th century, Tiwa, Piro, and Manso Indians from Ysleta Del Sur and the El Paso area migrated to Las Cruces, NM to form the Tortugas community. While this group is not a recognized tribe by the US government, they continue to identify with their cultural heritage.

Ysleta del Sur maintained a relatively cordial relationship with its Hispanic neighbors in El Paso, helping to defend the area against Apache and Comanche raids. Such good will led to a land grant from Spain in 1751. Relations with Anglos when the territory passed into Texas (and subsequently US) hands were perhaps more tense. In the late 1800s, Texas attempted to incorporate Ysleta village, which would have permitted non-Native settlement and undermined the Tiwa identity of the community. But, Texas finally would recognize the tribe in 1967, followed shortly thereafter by federal recognition from the US in 1968. This recognition formed part of a more general cultural revival to reclaim Ysleta’s Tiwa heritage. Intermarriage, expansion of El Paso, and immigration from Mexico brought a large influx of Hispanic and American culture into the community and by the middle of the 20th century there may not have been any fluent Tiwa speakers left at Ysleta.

The cultural revival at Ysleta del Sur has continued into the 21st century. The community has enlisted the help of linguists and fluent Tiwa speakers from Sandia and Isleta to create a language revitalization program for their community. Ysleta has made a
number of local small business investments to help bring in revenue, including tourism at Chilicote Ranch near Valentine, TX. Like its New Mexico cousins, Ysleta Del Sur hosts a Feast Day in honor of its patron saint, San Antonio, on June 13.

The official website of Ysleta del Sur Pueblos is [http://www.ysletadelsurpueblo.org](http://www.ysletadelsurpueblo.org/). Houser (1979) provides the most succinct summary of the history and development of the Pueblo up until the 1970s. Fewkes (1902) and Trager and Smith (1969) are short sketches of the contemporary community in relation to their historical connection with the core Pueblo region. Steiner (1972) and Wright (1993) are description of the modern Pueblo written for a popular audience. Eikhoff (1996) provides a more robust description of the community targeting a more academically inclined readership. Adam (2009), Gray (1995), and Martin (1994) are all dissertations or dissertation-based publications that address Tigua identity, culture, and resource management at the Pueblo in the light of their urban setting and connection with the New Mexican Pueblos. Finally, Ysleta Del Sur Pueblo Tribal Council (2000) is a four-volume publication of various legal documents and historical records of Ysleta del Sur Pueblo.

### 2.5 Towa-Speaking Pueblos

Towa is spoken at only a single community in the modern day, Jemez Pueblo. As discussed in section 2.2.1 above, the now abandoned Pueblo of Pecos may have once spoken a dialect of Towa or a language closely related. According to the 2000 US Census, there were 2,010 speakers of Towa 5 years of age or older. This probably represents a range of fluency. However, by all reports there is a high rate of intergenerational transmission of Towa at Jemez Pueblo, so this number may not be as far
from an accurate representation of fully fluent first language speakers as are the census numbers for the other Kiowa-Tanoan languages.

2.5.1 Jemez Pueblo

Jemez Pueblo, or Walatowa\(^{16}\) (*wâl̩t̩i wâl̩ at the Pueblo in the cañada*), is a relatively large Pueblo in a relatively remote location away from major modern non-Native settlements. Tucked away at the south end of the Cañon de Don Diego in the Jemez Mountain Range, NM State Road 4 passing through it, Jemez has 3,486 enrolled tribal members (BIA 2014). According to the 2010 census, within its 139.66 square miles of mountainous territory in Sandoval County, there are 1,815 residents (US Census 2012b: 189), most of whom are members of the tribe. Jemez is one of the most closed off of all of the New Mexico Pueblos and very little linguistic or ethnographic work has been done with the community.

Jemez tradition has them coming from the north, from the area of Stone Lake just south of Dulce. Archaeological evidence suggests they arrived in the Jemez Mountains and Galisteo region by around 1300, at the same time as other peoples were moving from the San Juan River drainage to the Rio Grande Valley. When the Spanish arrived at the end of the 16\(^{th}\) century, the Jemez lived in a number of well-fortified villages on the tops of the mesas throughout the southern end of the Jemez Mountains. The Spanish attempted to compel them to move down into the valleys where their farmland was located and established a church at Giusewa Pueblo (*vîsewa boiling (water) place*) in 1601. This was only marginally successful at the time and the Jemez kept to their mountain villages,

\(^{16}\) Walatowa is the name of the village itself while the reservation is known as Jemez Pueblo. The name “Jemez” is the Hispanicization of the native term *hî jînîs* which simply means *people*, especially *Jemez people*. 67
especially following the Pueblo Revolt of 1680. When the Spanish reconquered New Mexico, the Jemez strongly resisted well after other Pueblos had acceded to renewed Spanish rule. It was not until around 1706 that the residents of the various Jemez villages were finally compelled to be consolidated at modern Walatowa.

When the few remaining residents of Pecos decided to abandon their ancient stronghold, they moved to Jemez Pueblo. Although they became fully integrated into Jemez society, descendants of these Pecos survivors remember their lineage and the Jemez recognize and respect this distinction. The second lieutenant governor of Jemez also has formal status as the governor of Pecos.

Jemez Pueblo maintains a strong sense of independence and resistance to outside influence. While they are able to take advantage of tourist traffic on scenic Highway 4 by offering guided hikes of the beautiful and striking Jémez Red Rocks Recreation Area, they have not felt compelled to engage in other major economic pursuits, such as casinos. At the time of this writing, Jemez is undertaking legal action to reclaim the sacred area of Valles Caldera after years in private and then public hands. Whether they keep the sacred area open to tourism or close it off for private Pueblo use remains to be seen. Despite the Pueblo’s reticence about allowing outsiders access to the community, Jemez is open to the public on major festival days. The Jemez Feast Day of San Diego is on December 12 while the Pecos Feast Day of Porciúncula (Persingula) is on August 2.

There are only a few publications that provide any detailed information on Jemez Pueblo. Most notable among these is probably Sando (1982), a historical overview by historian and native Jemez community member Joe Sando. Sando (1979b) is a briefer Handbook survey. Further ethnographic analysis can be found in Parsons (1925a) and
Hawley Ellis (1964), the latter considering Jemez practices in comparison to those in other Tanoan Pueblos. Ball (1986) is a dissertation study of Pueblo factionalism with an emphasis on events at Jemez, while Dodge (1982) is a summary of archaeological research at the Pueblo.

The official website of the Pueblo is http://www.jemez pueblo.com/. The Walatowa Visitors Center is located on NM State Hwy 4, a couple miles north of the village.

2.6 Kiowa-Speaking Community

The Kiowa (kỳgú) have a history wholly distinct from that of their linguistic relatives, having separated from the Pueblo groups at some unknown time in prehistory. Jelinek (1967) suggests that the ruins of the Middle Pecos at the edge of the Pueblo area could represent the settlements of the ancestors of the Kiowa, but to my knowledge this is far from certain. Ortman (2012) also suggests that the Kiowa could have inhabited the Eastern Fremont settlements of Utah. Within recorded history, however, the Kiowa have demonstrated all of the trappings of a Plains culture: nomadic buffalo hunters living in tipis, engaging in warfare on horseback after the introduction of the horse, a division into multiple travelling bands, interior divisions into ritual societies based on accomplishments and wealth, and a religion centered around a set of medicine bundles (tʰaːfɪ dɔy) and which culminated in an annual sun dance (k'ɔ́ tó). The most important of these medicine bundles was Taime (tʰâymé). There is no immediate evidence of any affiliation with the Pueblos, other than the very Kiowa-Tanoan language that they speak.
The primary information on Kiowa prehistory comes from Mooney’s (1898) study of the painted calendars, which recorded significant events of each year on buffalo hide. According to Mooney’s discoveries, the earliest memories of the Kiowa trace a migration out of the area of the headwaters of the Yellowstone River in Western Montana at around the beginning of the 17th century. From there they migrated east to the Black Hills of northeastern Wyoming and western South Dakota where they established a close friendship with the Crow. It is from the Crow that the Kiowa acquired the Taime bundle and perhaps many other Plains features. This friendship and alliance was so cordial that it is reported that Kiowa would still send their children to live with the Crow for a time even after they had moved into the southern Plains. The Kiowa also developed a close alliance with the Plains Apache and by the beginning of the 18th century, the two groups were affiliated in nearly all affairs.

Pressure from the aggressive Cheyenne and Sioux migrating from the east led the Kiowa to migrate south in the late 18th century. By the early to mid-19th century, they had migrated into modern Oklahoma near the Wichita Mountains. However, this was merely a roughly central locus of Kiowa residence and their nomadic lifestyle would take them north into South Dakota to trade with the Mandan and Arikara and south into Texas and Mexico to raid and take prisoners. By the 1730s the Kiowa had acquired horses and had begun to become initiated into the culture of horseback hunting and warfare that attracted so many societies of the Plains.

Being a comparatively small tribe, the Kiowa would be at the mercy of larger and better armed groups if they did not continue to make alliances. The most important of these was the Comanche, perhaps the most aggressive and powerful tribe on the Plains in
the late 18th and early 19th centuries. After many years of war, the Kiowa made a lasting alliance with the Comanche in 1806, which opened up movement through Texas and New Mexico. Through the early 19th century, these three groups—the Comanche, Kiowa, and Plains Apache—marauded the southern Plains, harrying American and Texan settlers, Mexican communities, and other Native communities. They would also war with the Cheyenne and Sioux to the north and the Osage and Creek to the east while also trading with the Pueblos in the west and the Missouri River earthlodge villages to the northeast.

This “golden period” began to abate in the 1830s. The US brokered a deal between the Kiowa-Comanche alliance and the Osage and Creek which led to a lasting peace between the groups. Peace was formally reached between the US and Kiowa in 1837, although continued raids into Texas, New Mexico, and Mexico would lead to further military conflicts. This was temporarily resolved in 1865 with the Little Arkansas Treaty and the Treaty of Medicine Lodge, by which the Kiowa agreed to settle on a reservation along with the Plains Apache and Comanche in western Oklahoma. This peace was short-lived as the US failed to deliver promised rations, compelling the Kiowa to begin raiding again. This aggressive behavior led to open hostilities between at least some factions of Kiowa and the US military in the early 1870s. However, following the Kiowa defeat in 1874, the tribe laid down arms for the last time.

The end of their mobile warfare lifestyle led to an identity crisis for the Kiowa, as it did for many other Plains tribes. The US outlawed the Sun Dance in 1887, effectively forbidding the Kiowa the practice of their religion. At the same time, new pan-Indian religions were springing up, peyotism and the Ghost Dance movement both becoming
popular with the Kiowa in the late 19th century. When the Native American Church was eventually established, the Kiowa would end up becoming major participants, being especially known for their hymns. Even as they struggled to find a new identity for themselves, US agents sought signatures for the Jerome Agreement, which was ratified in 1900. This agreement obliterated reservations and allotted land to individual tribal members. However, the further purpose of allotment was to open former reservation land to purchase by non-tribal members. The Kiowa Lone Wolf attempted to fight the Jerome Agreement and allotment in the Supreme Court in 1903, but the court sided with the government. The Kiowa were left with only 17 percent of the original reservation.

The Oklahoma Indian Welfare Act of 1936 returned some amount of power to the tribe, however. With this act, tribal governments were established for the non-reservation tribes of Oklahoma, which granted limited autonomy and self-governance. In 1970 the Kiowa adopted a constitution. The seat of Kiowa government is at Carnegie, OK.

The present tribal enrollment for the Kiowa is around 12,500 as of the year 2000 (Levy 2001: 922). This is a growth descended from approximately 1,000 who settled on the reservation in 1875. According to the 2010 census (US Census 2012c: 304), there were 16,249 Native people residing within the Kiowa-Comanche-Apache-Ft. Sill Apache Oklahoma Tribal Statistical Area of Oklahoma. This is out of a total resident population of 197,781 within a 6,353.02 square mile area (Ibid: 329). Of these 16,000 odd Native residents, only a small proportion is probably Kiowa. Most Kiowas reside in the rural area between the cities of Carnegie, Lawton, and Anadarko, OK.

Today the Kiowa are formally known as the Kiowa Tribe of Oklahoma. While they do own the Kiowa Casino located off of Interstate 44, north of Wichita Falls, the
large tribal enrollment and the non-centralized nature of the Kiowa community makes it less salient of an investment as compared to the tribal casinos of the New Mexican Pueblos. The Kiowa actively participate in the Pow-Wows popular with Plains tribes, a modern surrogate for their culturally specific dances which they have ceased to practice, while also developing and reinforcing an identity as Native American.

There are very few speakers of Kiowa left. The 2006-210 US Census (US Census 2011) claims there to be 886-1,181 speakers of Kiowa 5 years of age or older, but this undoubtedly counts a range of fluency. Fully fluent first language speakers of Kiowa today probably number only a few dozen at most (Adger et al. 2009).

The Kiowa and other Plains ethnic groups do not have the same kind of ideology of secrecy and control of information as is found in the Pueblos. Even so, as one of the smaller tribes of the Plains, the Kiowa literature is not as vast as that dedicated to larger tribes like the Siouan groups or the Comanche. There are a fair number of decent ethnographic and historical works, though. The official website of the Kiowa tribe is http://www.kiowatribe.org/.

Most of the above history is based on the overview presented by Levy (2001) in the Smithsonian’s *Handbook of North American Indians, Volume 13*. The earliest detailed ethnography of the Kiowa is Mooney’s (1898) study of the indigenous calendar system and oral history and his (1896) description of the Ghost Dance movement, including Kiowa participation. Greene (2009) is a recent museum publication that also addresses Kiowa calendars while Ewers (1978) is a similar description of Kiowa and Kiowa-Apache tipi paintings. Collier (1944), Lowie (1916), Meadows (1999), Rand (2008), Richardson (1940), Scott (1911), Schnell (2000), Spier (1921), and Voegelin
are among the publications that focus on various aspects of traditional Kiowa culture and history (see also Lesser 1935, discussed in chapter 3.1). Crawford (1915/1998), Hoig (2000), Mevthin (1899/1996), Robinson (1997), and Stanley (1968) provide biographies and ethnohistories of notable individuals among the Kiowa. Lassiter (1998) and Lassiter et al. (2002) analyze and describe the role of Christian hymns in 20th century Kiowa culture. Popular accounts of the Kiowa, their history, and their stories include most notably Boyd (1981, 1983) and Marriott (1945, 1948a, 1968), as well as Mayhall (1962), Nye (1997), and Wunder (1989). See also the language-related literature discussed in chapter 3.1, which includes ethnographic works.

2.7 Summary

This chapter has provided something of the historical and cultural context in which the Kiowa-Tanoan languages have been spoken within the historical and late prehistoric period. Insofar as the languages are still spoken, I have also attempted to present some idea of the modern communities where the languages are indigenous. All of the Kiowa-Tanoan languages are endangered at the time of writing, but in the Southwest, at least, Tewa, Tiwa, and Towa are all still in active use. A visitor to most of the Pueblos should not be surprised to hear these languages being spoken on the street, at least by older people. Kiowa has more speakers than some Plains languages, but in comparison to the Pueblo languages, its domains of use are few.

The reader interested in more information on the Kiowa-Tanoan-speaking communities should consult one of the references cited above. This chapter did not attempt to be comprehensive of all of the archaeological, historical, economic, and
ethnographic literature that is to be found, but I should have given enough that an
interested party can branch out. The next chapter, on the other hand, does provide an
exhaustive survey of all of the literature pertaining to the Kiowa-Tanoan languages
themselves.
3 Literature Review: Previous Documentation and Analyses

Despite the fact that the Tanoan-speaking peoples of the Southwest Pueblo region have been in contact with Europeans since the late 16th century, documentation and description of the languages did not begin until much later. Unlike some of the major languages in Central and South America, the Spanish did not appear to show any interest in proselytizing or reeducating the Puebloan peoples in their native languages. Aside from sporadic words in some early documents—mainly place names—word lists or records of any of the Kiowa-Tanoan languages did not begin to appear until the late 19th century when fieldworkers with the Bureau of American Ethnology (BAE) and other US government institutions were sent out to collect vocabularies, texts, and ethnographic information on the various Native American tribes. These researchers began recording data from the Kiowa in the Plains and the Pueblo peoples in New Mexico and Arizona at roughly the same time, with some initial word lists in the 1850s-1870s, then more intensively in the 1880s and 1890s and into the early 20th century, when the first publications began to appear. This work has continued sporadically through the 20th and into the 21st century as various anthropologists, ethnographers, and linguists have attempted to document the languages and cultures of these peoples.

Writings on Kiowa-Tanoan languages have varied greatly in quantity and quality, phonologically accurate transcriptions being especially hard to come by until the latter half of the 20th century. Most of the literature that has been published has had more of an ethnographic or archaeological rather than a descriptive linguistic bent. The linguistic work has appeared mostly as short articles in various journals or as archival manuscripts or dissertations that have not been further published. Perhaps the main reason for this in
the case of the Tanoan languages has been the strong Pueblo reticence to share many aspects of their language, religion, and culture with outsiders. Most of the groups have been opposed to Euro-Americans doing research with them and even to representing their languages in the written medium. This has meant that much of the research has had to be done with caveats as to how accessible the research results would be and whether or not the Native consultants could be identified (for fear of reprisal within their own community). That being said, there has been a fair amount of research done on Kiowa-Tanoan languages, it’s just that much of it is unpublished or in limited circulation.

This chapter will provide a fairly comprehensive overview of the work that has been done on the languages, both published and unpublished, from the mid-19th century through the first decades of the 21st century. It may be of particular interest to researchers in detailing the contents of some archival resources, including audio recordings, that have rarely been cited or accessed in previous research on any of the languages. However, due to limitations in time and space, I do not address much of the massive archaeological and ethnographic literature. While much of that literature contains little in the way of linguistic details, it is of course very important for providing information on the historical and physical contexts in which the languages have been spoken. There are also often individual lexical forms from the languages in these works, although they are usually poorly transcribed.

Of the archival material, Kiowa-Tanoanists and interested Amerindianists should take particular note in the overview and breakdown of the contents of a number of archival sources. First, there are the various manuscripts housed at the Smithsonian’s National Anthropological Archive (NAA) in Washington, D.C. which were collected
under the purview of the Bureau of American Ethnology (BAE) during the late 19th and early 20th century. These manuscripts, although often of limited scope and poor transcription, represent the first attempts by Westerners to document and describe the languages of the American West. Indeed, given the lack of Spanish interest in recording much about the languages of New Mexico, they provide the earliest records of linguistic forms from the region.

Second, the renowned and eccentric linguist and ethnographer John Peabody Harrington, best known for his meticulous work among the indigenous languages of California, also worked extensively in New Mexico, particularly on Kiowa-Tanoan languages. His field notes, housed at the Smithsonian’s National Anthropological Archives, have been distributed in microfilm format amongst academic libraries across the country (Mills 1981). The collection includes numerous microfilm reels dedicated to this group of languages and is a rich resource of linguistic material dating mostly from the first two decades of the twentieth century. Within the Southwest portion of the microfilm collection, fully 25 reels consisting of a total of 17,457 frames—plus a portion of a 26th reel of miscellany—are given over to the Tanoan languages while within the Plains portion of the collection, 13 reels with 9,846 frame images are devoted to Kiowa. Although this collection is far too extensive to be fully integrated into this dissertation research, the exposition below provides the first steps towards processing these notes.

The third major archival source described below consists of the field notes of mid-20th century linguist George L. Trager, housed at the University of California-Irvine Langson Library Special Collections and Archives. This collection consists of both written notes and audio material recorded on reel-to-reel tape. While the bulk is devoted
to Taos Northern Tiwa, it does include notes on the other Tiwa languages, Kiowa, and some amount of comparative Kiowa-Tanoan. Access to these field notes is critical for gaining a fuller understanding of the grammar and lexicon of the Tiwa branch of the family.

Finally, a number of smaller archival sources will also be described below. These include the ethnographic notes on Kiowa collected under a field expedition led by Alexander Lesser, a collection of notes on kinship terms among the New Mexican Pueblos and Kiowa recorded by Lesser in 1929, and the field notes of Kenneth Hale on the Towa language collected in the 1950s and a Kiowa-Tanoan cognate list assembled in the early 1960s. The Lesser papers are currently in the possession of Doctors Douglas Parks and Ray DeMallie of the American Indian Studies Research Institute (AISRI) and the Department of Anthropology at Indiana University-Bloomington who allowed me to digitally scan the materials. A copy of the Hale papers I received from Doctor Laurel Watkins. In addition to these written notes, I have also acquired various audio recordings on Tanoan languages housed at the Archives of Traditional Music at Indiana University-Bloomington.

The following sections are organized by language groups in the following order: Kiowa (3.1), Rio Grande Tewa (3.2), Arizona Tewa (3.3), Taos Northern Tiwa (3.4), Picuris Northern Tiwa (3.5), Southern Tiwa (3.6), Towa (and Pecos) (3.7), and Piro (3.8). All literature and material that has a particular emphasis on a single given language will be reviewed in the appropriate section. The last section (3.9) addresses the comparative literature as well as that literature that gives comparable attention to two or more of the Kiowa-Tanoan languages. I do not review the same piece of literature in two sections,
even if a comparative piece is particularly informative and rich for a given language. It is thus recommended that anyone interested in only a particular language should look to both the section on the language of interest and section 3.9 to catch all of the relevant literature.

3.1 Kiowa

Of all of the languages in the family, Kiowa has had quantitatively and qualitatively the best linguistic work done on it. This may be because the Kiowa, not being within the Puebloan cultural sphere, do not have as strong of stipulations regarding access to their language as do the Tanoan groups. Kiowa is the only Kiowa-Tanoan language to have had a reference grammar published and one of the only ones to have had a vocabulary of any size fully published (dated though it may be). Therefore in terms of number of lexical items and in terms of grammatical analysis, Kiowa is best able to lend itself to comparative-historical analysis. The only drawback is the paucity of available texts for analyzing the language in a larger discourse context, crucial for better understanding the full range of functions of grammatical constructions.¹

The earliest Western documentation of the Kiowa language appears to be a word list collected by U.S. Boundary Commissioner John Russell Bartlett, who traveled through the Southwest in 1850-1853 in order to carry out the provisions of the Treaty of Guadalupe Hidalgo.² This list consists of about 176 words, collected with the usual 180

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¹ Texts do exist, but most of them are at the time of writing only available from those linguists who have collected them, particularly Laurel Watkins and perhaps Daniel Harbour. See further comments below.
² The metadata at the National Anthropological Archive list Bartlett’s work as dating from the early 1860s. This appears to be a typo, probably dating back to the Bureau of American Ethnology era.
word prompt developed by the Bureau of American Ethnology. The transcription is poor by modern standards, but is not altogether bad for its time. Although never published, it is stored at the NAA as part of NAA manuscript 1627 (Bartlett 1861), which collects all of his word lists together (32 languages in total), and in NAA manuscript 454 (Bartlett and Mooney 1897). The latter manuscript also includes notes penciled in by James Mooney on the Plains Apache, Piro, and Ysleta del Sur Tiwa languages (see 3.6 and 3.8 below). I do not know if Mooney was cognizant of the fact that in writing in the data from the Tanoan languages he was essentially creating the first nascent cognate list for the family.

Only a couple of years after Bartlett had recorded his list, Lieutenant Amiel Weeks Whipple transcribed a list of approximately 190 words during his exploration and survey for a transcontinental rail line. The list appears in Whipple et al. (1855) and seems to have been elicited from roughly the same prompts as used by Bartlett. The quality of Whipple’s transcriptions is comparable to that of the above and other contemporaries, although Bartlett’s may be a little better. Whipple et al. (1855) also reports an earlier word list by one Dr. Say, but this was apparently lost before it could be copied and appear in publication. A shorter wordlist appears in Latham (1862), for which see section 3.9.

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3 This list, which also served as the prompt of many of the other documents collected under the BAE, consists of a number of basic terms for humans, animals, natural phenomena, colors, numbers, etc. It is very similar to—and a precursor to—the well-known Swadesh lists of the 20th century.

4 Bartlett’s “Kioway” vocabulary was probably collected after his lists for Piro and Ysleta del Sur Tiwa (see below) for which his transcriptions were less accurate, suggesting he’d had more practice by the time he recorded the Kiowa list.

5 Serious suggestion of Kiowa’s relationship to the Tanoan languages would not appear in publication until Harrington (1910).

6 Whipple’s Kiowa consultant was none other than “Andele” (Andrés Nuñares), the Mexican captive raised by the Kiowa whose biography is given in Mervthin (1899).
The next research to be done on the Kiowa language would not be for almost 30 years. Albert Samuel Gatschet, a Swiss ethnologist, recorded Kiowa data shortly after he joined the Bureau of American Ethnology upon its establishment in 1879. This research would lead to the first article published on the Kiowa language, Gatschet’s (1882b) “Phonetics of the Kayowē language”, a brief six-page description of the Kiowa segmental sound inventory, including information on phonotactics and sound alternations. This article does a fair job for its time at analyzing the up to then unexplored language of a relatively small tribe of the southern Plains, although the transcription is not particularly better than Bartlett’s. Unfortunately, Gatschet never published any other pieces on Kiowa, but his field notes at the NAA, manuscripts 3783 (Gatschet 1880), 520a-b (Gatschet 1884a-b), and 1449 (Gatschet 1886) provide a more detailed glimpse of his work7, mainly in terms of vocabulary lists.

Gatschet’s work would be followed up only a decade later by James Mooney, who would provide the groundwork for all subsequent Kiowa ethnographic studies. Hired in 1885 by John Wesley Powell, director of the BAE, to do fieldwork in the Plains, Mooney began ethnographic fieldwork with the Kiowa in 1892. Mooney’s research is collected as multiple manuscripts at the NAA8, however, only the most meticulous researcher must access the archive to analyze Mooney’s work. In 1896 he published a large book-length study entitled The Ghost-Dance Religion and the Sioux Outbreak of 1890, which includes a thirteen-page ethnography of Kiowa and Plains Apache (“Kiowa Apache”) involvement in the religion. This was soon followed in 1898 by his magnum

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7 There are also a couple other manuscripts I have not yet been able to view, namely NAA manuscripts 245, 249, and 2208. These do not seem to be as rich in linguistic information.
8 The numbers for the NAA manuscripts are 347, 1872, 1877, 1883, 1887, 1890, 1891, 1897a, 1909, 1911, 1915, 1919, 1922, 2014, 2531, 2905, 2912. This list may not be comprehensive.
opus on the Kiowa, *Calendar History of the Kiowa Indians*, published in the 17th annual report of the Bureau of American Ethnology. This book outlines in great detail the Kiowa account of their own history since coming onto the Plains near the headwaters of the Missouri River and their subsequent movements through the Black Hills and down onto the Southern Plains. As well as providing an essential historical perspective in tracing the migrations of the Kiowa, Mooney (1898) also includes a substantial 40 page Kiowa-English vocabulary (with a following nine page English-Kiowa glossary). While his linguistic work, like Bartlett’s and Gatschet’s, would be in great need of improvement, the historical value of this work is unrivaled and will serve as an integral resource in linking the remembered movements of the Kiowa with their prehistoric Southwestern origins.

The first three decades of the twentieth century would see a fair amount of documentation, but little in the way of publication before the next major works on Kiowa. An undated BAE manuscript from an anonymous source, NAA manuscript 518, contains a translation into Kiowa of the Lord’s Prayer and probably dates from the late 19th or first two decades of the twentieth century (Anonymous n.d.). Renowned Plains ethnologist Robert Lowie did brief fieldwork at Anadarko with the Kiowa in 1915, producing a 1916 publication on Kiowa societies and a 1923 article on kinship terms. Both works, while short, contain numerous Kiowa terms in transcription superior to that seen in the 19th century (although still lacking compared to what would eventually follow).

In 1929 prolific American Indian ethnographer Elsie Clews Parsons produced a book of Kiowa tales (Parsons 1929b). Like all of her similar work—including numerous publications on Tanoan communities, described in the following sections—the narratives
are given in English, but with many transcribed words in the Native language mentioned parenthetically and in footnotes throughout. Her transcription is not the best, but is not terrible either, and appears to be better than much of the transcription in her works on the Southwest. Also in the ethnographic vein from the first half of the twentieth century, Vestal and Schultes (1939) is an economic ethnobotany of the Kiowa and includes many plant names in Kiowa. The authors are not linguistically trained, though, and the accuracy of their transcriptions leaves much to be desired.

Another scholar of the pre-war period who would have a hand—albeit a subtle one—in Kiowa ethnographic research was Alexander Lesser, a student of Franz Boas and a professor of anthropology at Columbia University. Although Lesser’s focus in this period was primarily Caddoan culture and he himself never published anything on Kiowa, he was involved in two projects relevant to Kiowa and Kiowa-Tanoan studies. The first, the more minor, was a field expedition to the Southwest in the late fall of 1929 where he collected kinship vocabulary from many of the Pueblo groups (see sections below). He also collected data for Kiowa, filling about 26 pages of a small notebook9 (Lesser 1929b). This project, which appears to be a follow-up to the research published in Lesser (1929a), seems never to have produced any publications, the data only to be found in Lesser’s field notes now stored at Indiana University. Since enough subsequent research on Kiowa kinship terms has been done, these notes have little to add to current knowledge.

The next, and more important, project came in 1935 when Lesser led a field school on Kiowa from the Laboratory of Anthropology of Santa Fe, New Mexico. This

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9 The notebook in question, a 6x3” pocket notebook, also contains data on Laguna Keres kinship terms.
field school consisted of five scholars from different universities in addition to Lesser himself: William R. Bascom of the University of Wisconsin, Donald Collier of the University of Chicago, R. W. LaBarre of Yale University, Bernard Mishkin of Columbia University, and Jane Richardson of the University of California. These researchers elicited information in Kiowa country on various aspects of traditional Kiowa life, producing hundreds of pages of notes (Lesser 1935). The researchers appear to have divided up the topics amongst themselves, albeit with some overlap. Their notes would eventually be typed up and Lesser appears to have begun work towards editing and producing a single-volume ethnography on the Kiowa on the basis of this field school. This plan never came to fruition, however, although a couple of the researchers involved would publish on their findings, e.g. Collier (1944) and Richardson (1940). Portions of the field notes are archived in multiple locations, including the Smithsonian National Anthropological Archive and the collected papers of R. W. LaBarre, but the fullest compilation of the notes appears to have been retained by Lesser and are stored with the rest of his notes at Indiana University. These notes have relatively little in the way of Kiowa linguistic forms, mainly kinship terms and names of various objects and practices involving ceremony and societies. Still, they do contain a wealth of ethnographic and historical information on the Kiowa important for contextualizing linguistic usage.

Because of the dearth of publications coming from his research, Alexander Lesser’s work

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10 The topics, as indicated by headings in the notes, include authority, bands and divisions, buffalo medicine lodge, captives, cults, death and mourning, dreams, economics, kinship, law, magic performances by medicine men, marriage, medicine men and their curing methods, myths and tales, names and naming, owl power and whirlwind, painted tipis, power, rank, religion and religious conceptions, snake power, societies, songs, sorcery, suicide, sun dance, the ten medicine bundles, tipi composition, warfare, and women’s societies.

11 The interested researcher wishing to access this collection would have about 3,330 pages of notes to sort through, including duplicate and partially duplicate carbon copies. The collection has been scanned and is available in PDF format from AISRI.
has thus far had little actual impact on Kiowa studies, but modern access to these field notes may change that to some small degree.

Another work from this time period that should be mentioned is Marriott (1948a), a collection of Kiowa stories written in English translation. Marriott’s other works are historical and ethnographic, but written for a popular audience (cf. Marriott 1945, 1968), and this work differs little. There is little Kiowa language included amongst the stories, but it does give some idea of Kiowa storytelling for its time.

Also during this time frame, a Kiowa text and a 50-word list was collected by some unknown party at an unknown date. Unidentified (n.d.) is a manuscript archived at the American Philosophical Society. It consists of a text with free translation and the word list. Based on the dates given to the other documents in the same collection, the data were probably recorded in the early to mid-20th century. I have not been able to study the document as of the time of this writing.12

The above ethnographic publications from this era are overshadowed in terms of language study by the work of John Peabody Harrington, who would do the first serious and dedicated linguistic research on the language. Working for the Bureau of American Ethnology, Harrington began his Kiowa work in 1916 when a delegation of Kiowa visited Washington, D.C. and soon followed up this brief meeting in 1918 with fieldwork based at Anadarko. It should be noted that while Harrington’s principal Kiowa consultants were older Kiowas at the time, a young Parker McKenzie, who worked as a clerk at the BAE office in Anadarko, would also provide technical assistance to Harrington’s work. McKenzie would later collaborate again with Harrington and serve as

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12 Laurel Watkins (p.c.) suggests this document may have been created by Edward Sapir.
principal consultant to other linguists later in life, as well as doing important language work in his own right. From this fieldwork and subsequent research in the 1940s, Harrington produced a huge corpus of notes. The microfilm print of his Kiowa notes alone consists of 9,846 frames across 13 reels of film (Mills 1982). Unlike his Tanoan notes, much of his Kiowa material would see publication in 1928 with his 250-page *Vocabulary of the Kiowa Language* printed as the 84th bulletin of the Bureau of American Ethnology. This outstanding volume is not only crammed full of (relatively) well-transcribed Kiowa lexical items, but also includes example sentences for many of them and a fair amount of linguistic analysis. This is also one of the first works to make significant claims for the relationship between Kiowa and Tanoan, occasionally mentioning potential Tewa (and sometimes Tiwa) cognates under entries for Kiowa words.

Harrington followed this volume up with a set of three Kiowa texts almost twenty years later, after returning to some fieldwork with Kiowa in the 1940s. In 1946 he published these texts as an article in the *International Journal of American Linguistics* (IJAL). Two years later he produced a basic description of Kiowa grammar entitled *Popular Account of the Kiowa Indian Language*, listing Parker McKenzie as coauthor. This book is notable in being the first attempt at a grammatical description of Kiowa and

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13 I have yet to do a detailed evaluation of Harrington’s Kiowa notes as I have for his Tanoan notes in the following sections. The interested reader should note that Colorado College has been in the process of digitizing the Plains section of the Harrington microfilm collection and will soon be making these files available electronically. These have recently also been made available by the Smithsonian Institution via their digital archives (Laurel Watkins, personal communication).

14 Albeit in an idiosyncratic phonetic script, as is typical of Harrington’s work. He also fails to represent tone consistently and only occasionally represents vowel length distinctions, among other sporadic errors.

15 Although McKenzie served as primary consultant for Harrington during this second session of fieldwork, he had very little input into the development of the book and was reportedly disappointed by the writing system that Harrington used in the book, namely that he hadn’t used McKenzie’s own system (Watkins and Harbour 2010).
in being ostensibly targeted towards a non-academic audience, but is unfortunately under-detailed in key areas of the grammar, makes use of a rather ugly orthographic system (quite different from the quirky system used in the 1928 vocabulary), and even for its time does not seem like a useful resource for learning to speak the language. Indeed, in light of previous works such as Harrington (1928) and Mooney (1898) and of work to follow, this manuscript is rather forgettable as a resource—academic or pedagogical—on Kiowa.

This serious linguistic work by Harrington would soon be followed by an onslaught of linguistic publications on Kiowa. One of the linguists to follow up was Edith Crowell (Trager(-Johnson)), a student, and then wife and ex-wife, of George L. Trager. In 1949, as Edith Crowell, she published a scant six page sketch of Kiowa grammar as an IJAL article. After further fieldwork, her 1960 dissertation (under the name Crowell Trager) gives an updated description of Kiowa phonology and morphology as well as presenting a short analyzed text. A decade later, in 1972, she published an article (as Crowell Trager-Johnson) presenting a complex analysis of Kiowa pronominal indexation using a semantic feature framework in a festschrift for George L. Trager. Crowell Trager’s work is of note in being contemporary with publications that finally formally recognized the close relationship between Kiowa and the Tanoan languages and her research in particular probably went a long way towards convincing George Trager—the biggest name in Tanoan studies, as well as being her husband—of the relationship beyond a reasonable doubt. Her writings are couched in the linguistic theories of her time, however, and given the limited scope of her description, they were soon to be outshone by more comprehensive and detailed descriptions.
George Trager also did some eliciting of Kiowa language material. Amongst his field notes archived at the University of California-Irvine (Trager 1935-1972) are approximately 150 pages of notes on Kiowa. These notes include elicited lists of vocabulary constituting about 700 items, a number of short texts with word-for-word interlinear translation, including a re-elicitation and analysis of one of the texts published in Harrington (1946), plus about 350 slip file vocabulary index cards, most of which are organized by sound correspondences and comparison with Tiwa and Tewa lexical items. These notes, collected in the 1930s and 1960s, are well transcribed (details of tone and vowel length aside) but of limited scope and content. They may provide an interesting supplement to language materials for Kiowa specialists, but probably contain little of particular import that has not already been documented elsewhere.

The immediate post-war period was also to see another major research program on Kiowa concurrent with Crowell Trager’s work. During the early 1950s, the Summer Institute of Linguistics (SIL), a Christian organization that trains missionaries in linguistic documentation and analysis, enlisted Kiowa speakers for the purposes of field school training. This field school produced a fair number of recordings and written student field notes, which are archived in Oklahoma16, but most immediately led to the publication of a handful of articles that would be influential in Kiowa and Kiowa-Tanoan studies. Wonderly et al (1954) analyzes the complex number and noun class system in a more coherent way than Harrington (1928) had. This article was also the first to use the terms *basic* and *inverse* to describe the number contrast found in Kiowa-Tanoan (see

16 At the time of writing, Laurel Watkins and Daniel Harbour have been in the process of working with these field notes and transcribing the recordings. However, Watkins describes the history of these materials as "convoluted" and she has found it difficult to ascertain the full extent or location of these materials (Laurel Watkins, personal communication).
section 5.3). Merrifield (1959a, b) further elaborates and fine tunes this analysis of noun class by also looking closer at the intricate pronominal indexation paradigm. Merrifield points out how the pronominal proclitics index noun class and number more finely than does the nominal morphology and also undertakes the first internal analysis of the pronominal proclitics themselves (see discussion in chapter 0). Sivertsen (1956) provides the first in-depth phonetic and phonological analysis of Kiowa tone and the status of laryngeal features such as the glottal stop and creaky voice. Although none of these authors would follow up with further academic research on Kiowa, these IJAL articles would bring some of the more interesting and unique features of Kiowa grammar to the attention of linguists.

In the missionary capacity of the SIL endeavor, one of the authors of Wonderly et al (1954), Lorna Gibson, assisted Kiowa community members in the translation and transcription of Christian hymns into Kiowa. Gibson et al (1962) is a collection of 70 Kiowa hymns presented in Kiowa along with an English translation. The transcriptions appear to be accurate, although written with a practical orthography similar but not identical to practical systems found in other sources. While Gibson at least was undoubtedly aware of vowel length and tone distinctions—although the tone system had not yet been fully worked out—these features are not marked. This document is of limited distribution, but is valuable for the group of running Kiowa texts it offers.

The late 1970s through the 1990s would see the most important Kiowa linguistic documentation and description done to date. Minor works include Hickerson’s (1985) short article on terms for post-colonial financial concepts and Takahashi’s (1984) dissertation on Kiowa “case-marking” (the expression of clausal arguments) and noun
classes. Takahashi’s work is substantial, consisting of a feature analysis of noun classes and the pronominal indexation markers of the verb. However, its abstract formalism, very much a product of its time, is not adequately justified through cross-linguistic comparison (in the dissertation itself or in citation of the broader theoretical literature). Still, Takahashi’s work is insightful and, had it been published ten years earlier, might have had more of a significant impact on Kiowa studies. As it is, it was published as a dissertation the same year that Laurel Watkins published her grammar of Kiowa through the University of Nebraska press and Takahashi’s study was thus immediately overshadowed.

Watkins’ (1984) grammatical description of the Kiowa language, the publication of her 1980 doctoral dissertation, proved to be the most groundbreaking work on any Kiowa-Tanoan language to date. As a language description, its slim 268 pages with wide typescript spacing is deceiving as the concise and eloquent writing and the quality and thoroughness of the analysis makes it better than many grammars twice its size. Primarily focused on the basic phonology and morphology, Watkins provides insight into a number of aspects of the language that are important not only to a synchronic description of Kiowa, but also critical to Kiowa-Tanoan comparative-historical studies more generally. This includes a fuller account of tone, the discovery of an alternation between velar and dento-alveolar stops, and a fine-grained analysis of verb stem morphology. She also provides a detailed language-internal analysis (and pseudo-reconstruction) of the pronominal proclitics that goes well beyond comparable attempts made for the other languages. She even laces in comparative observations of Tanoan languages, demonstrating a keen sensitivity to the diachronic development of synchronic structures.
The book is not without its shortcomings, of course. Given the aforementioned length, there are certainly areas of the grammar that are touched on only lightly, namely in the domains of syntax, semantics, and information structure. However, Watkins’ grammar provides an excellent guide for future researchers to explore those understudied areas of the language and has proven foundational for further work in Kiowa-Tanoan.

In addition to her grammar, Watkins has also published a small number of articles on Kiowa, filling out some of the discourse syntactic description. Watkins (1976, 1978a, 1987, 1993) all address the topic of switch-reference, a feature of Kiowa grammar never mentioned until Watkins’ research. Kiowa has a small set of conjoining clitics that occur between clauses and mark whether a referent, prototypically the subject, is the same or different from one clause to the next. However, as noted in these articles, these markers are less sensitive to grammatical roles per se and more sensitive to topicality and reference continuity than switch-reference is often described as tracking. Watkins (1990) also develops the description of reference marking in Kiowa discourse by analyzing the distribution of full noun phrase expression of referents in three Kiowa texts. Watkins’ (1985) unpublished paper is a brief analysis of the use of different syntactic structures and styles in a small number of Kiowa texts, demonstrating the effects of genre and modality (speech versus writing) on linguistic structure. This series of articles further demonstrates the quality of Watkins’ work and her insight into Kiowa grammar. Watkins has also served as a leading expert in providing accurately transcribed Kiowa material for historical and ethnographic publications, e.g. Levy (2001).

Aside from Laurel Watkins’ work, the 1980’s and 1990’s saw another dry spell in publications on the Kiowa language. Russell (1991) is an audio cassette and one-page
guide sheet with a small number of phrases and basic vocabulary as spoken by a native speaker. Paddlety (1998) consists of a large collection of useful everyday expressions produced by a native Kiowa. Given that its intended audience appears to be community members, it provides no analysis of linguistic structure or any kind of word-for-word translation. Furthermore, it transcribes the language using a system that avoids special symbols or diacritics and is heavily based in English orthographic conventions. While consistent in its own way, it does not mark tones and is jarringly different than any previous representation of Kiowa. As a pedagogical tool, it would best be used in a classroom with a fluent native speaker. Gonzales (2001) uses a similar orthographic system and is also targeted towards community members seeking to learn the language, but it is more developed and user friendly for the classroom.

A very different genre that contains some Kiowa linguistic material is Merrill et al. (1997), a thorough guide to Kiowa cultural artifacts and ethnographic manuscripts archived by the Smithsonian. More a useful guide for researchers hoping to make use of the collection, the book does also include five pages of Kiowa terms for cultural items, the words well-transcribed by Parker McKenzie and lacking only indication of tones. On top of this, there is a list of the names of the Kiowa affiliated with the various items in the collection constituting an appendix of almost 100 pages. Although most of the Kiowa names are written in a rough Anglicization that is difficult to interpret without a native speaker and intimate knowledge of the culture\textsuperscript{17}, it could easily provide a valuable

\textsuperscript{17} Many family names among the Kiowa are in fact native Kiowa names, their spelling in American records being very inexact Anglicizations. This is different than the practice of many other North American Native groups who use either name translations as family names, as is the case with many Plains groups, or who use Western names for public record but may maintain a distinct “Indian name” within their community, as is common amongst the Southwestern Pueblos.
resource for the anthropological linguist interested in personal names and naming
practices. There is also a document by McKenzie deposited at the National
Anthropological Archives as NAA manuscript 7535. McKenzie (1991) is apparently a list
of disyllabic words in Kiowa, probably as an illustration of the orthography that
McKenzie had developed. I have not yet had the opportunity to view and evaluate this
document.¹⁸

Kotay (2005) is a two disc set of recordings of Kiowa hymns accompanied by a
booklet. The hymns consist of 66 of the 70 found in Gibson et al (1962), as beautifully
sung by Kiowa elder and singer Ralph Kotay. The songs are sung a cappella and the
recordings are clear. The accompanying booklet also gives the lyrics to the songs as
represented in the 1962 publication but marking of vowel nasalization is dropped. It is an
aesthetically attractive complement to the written textual material of Kiowa.

Finally, in the late 2000’s the Christian missionary organization Global
Recordings Network made available online approximately 50 minutes of Kiowa audio
texts and hymns (http://globalrecordings.net/program/C04791).¹⁹ Although no
transcriptions or translations accompany these texts, they are obviously translations of
popular evangelical Christian narratives. It is uncertain when the Kiowa recordings were
actually made, however, and indeed they may date to the 1950’s when SIL was working
with Kiowa consultants.

¹⁸ Laurel Watkins (p.c.) describes this as an attempt by McKenzie to come up with as many disyllabic
words as he could think of. The forms are given only the briefest of glosses, but are useful for evaluating
tone.
¹⁹ The organization has Christian recordings of various kinds for hundreds of languages from around the
world. GRN has been making an increasing number of these recordings freely available online
(globalrecordings.net) over the past several years. For many languages, the recordings consist of
translations of a handful of popular Christian texts, e.g. the story of Noah’s Ark. Others contain
miscellaneous hymns or songs and stories that are not cut from the same template. GRN will be mentioned
further below for other Tanoan languages.
Several collections of Kiowa stories in English translation were published in the late 20th century and at the very beginning of the 21st. Like most such collections of Native stories, they include sparse instances of Native terms and usually only in phonetically poor representation. But, despite their lack of usefulness for the kind of structural linguistics undertaken in this dissertation, they do provide an understanding of Native narrative content and something of the narrative structure, if only generally. Boyd (1983) gathers together dozens of Kiowa myths and tales in English translation in the second of two volumes on Kiowa-produced arts in the 20th century20. Nye (1962/1997) and Hoig (2000) both collect histories and stories of renowned Kiowas of the late 19th and early 20th centuries. The latter is a biography of Kicking Bird, but also includes three stories taken from Nye. Archer (2005) is a collection of stories from four tribes, including the Kiowa21. The 17 stories themselves were ones recorded by Elsie Clews Parsons in 1927 (and published in Parsons 1929b), although Archer omits the Kiowa terms that Parsons had included. Tōćakút (2000) and (2002) are collections of original stories and poems published by a Kiowa elder. They include many names and terms in Kiowa written in both the Parker McKenzie orthography and a non-standard orthography. In a similar vein I should also mention the works of famous native Kiowa writer N. Scott Momaday. Momaday is not a native speaker of Kiowa and most of his works are wholly original stories and essays, so may not say as much about “traditional” Kiowa language use. They do however provide a modern perspective on Kiowa life by a Kiowa tribal member.

20 The first volume (Boyd 1981) is on ceremony and dance.
21 The other tribes are the Cherokee, Kickapoo, and the Tigua of Ysleta del Sur.
The first two decades of the 21st century have witnessed a resurgence in Kiowa linguistic work, focused on both orthographic conventions and on language structure. McKenzie and Meadows (2001) presents the McKenzie orthographic system for the first time in publication, which Parker McKenzie had been developing through much of the twentieth century. The posthumously published article, written by McKenzie and with a biographical forward by Plains historian William Meadows, lays out and describes the practical orthographic system—which makes sparing use of digraphs and diacritics and optimal use of roman characters—and includes several words as examples of the orthography’s use. Watkins and Harbour (2010) likewise discusses the McKenzie orthography, analyzing its development and the phonetic insight McKenzie must have had in creating the system. The authors even suggest that McKenzie and his accurate transcription ability may have had more influence on John. P. Harrington’s Kiowa analysis than he has been credited for. Neely and Palmer (2009) also discuss orthographic conventions used in the Kiowa community, including the McKenzie system, the system seen in Gonzales (2001), and the phonetic script used by Watkins and previous linguists. This article is particularly concerned with the language ideologies surrounding the use of these orthographies. Salmi (n.d.) is a website that also addresses the issue of orthography, presenting another practical way of representing the language, specifically on the keyboard without using any special characters. This orthography does not seem to have been well received by the Kiowa community or put to any widespread use (Laurel Watkins, personal communication).

Two other works of particular import—both of which incidentally make use of the McKenzie orthography—are Palmer (2003) and Meadows (2008). Palmer (2003) is an
ethnography of Kiowa storytelling, providing both a structured ethnographic analysis and
the author’s insight as a Kiowa community member and a Kiowa speaker. Most
interestingly to the linguist, he also provides four texts of varying length in Kiowa in an
appendix. Free English translations are to be found in the body of the ethnographic
chapters. This work thus adds to the all too small corpus of Kiowa texts that have thus far
been published. Meadows (2008) is an ethnogeography detailing Kiowa place names
throughout the southern Plains, including the Kiowa form, its meaning, and a description
of the location and its historical and/or cultural import. While not as extensive and
linguistically fine-grained as Harrington’s (1916) ethnogeography of Tewa, it is a volume
that can easily stand beside Harrington (1928) and Watkins (1984) as the most notable
and richest works on the Kiowa language. Its primary fault appears to be some
inconsistency, and perhaps inaccuracy, in tone and vowel length of many of the
compound names, but this is only a minor issue on the whole.

Complementing these individual works is the arrival on the scene of two
grammar-oriented linguists who promise to keep Kiowa studies alive for some years to
come. Parker McKenzie’s great-grandson, Andrew McKenzie, finished a doctorate in
linguistics at the University of Massachusetts-Amherst in 2011. His dissertation,
McKenzie (2011), and two other publications (McKenzie 2009, 2010), provide a
formalist linguistic analysis of switch-reference constructions, with Kiowa one of the
foremost languages in his sample. In particular he takes interest in those instances of

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22 Watkins also has in her possession a number of transcribed Kiowa texts, but most of them have not been published.
23 The distribution of vowel length and tones does not fit with Watkins’ (1984) description of morphophonology, phonotactics, and tone patterns. In some instances, at least, Meadows’ transcription may not so much represent inaccuracy as a differing analysis of word boundaries. In any case, a careful reading of the transcriptions is required by Kiowa specialists.
Kiowa switch-reference mentioned above which do not track the grammatical subject, as is prototypically assumed. His professional career just having started when this dissertation was being written, I can only hope that he continues to work with his heritage language.

Even more prolific in the past decade is Daniel Harbour, who finished his Ph.D. in linguistics at MIT in 2003 and is currently a reader at Queen Mary, University of London. Harbour has shown himself to be a keen analyst of the Kiowa language and has complemented his analysis of Kiowa with continued field work with speakers in Oklahoma and with collaboration with Laurel Watkins on a number of projects. His published analyses are within a Distributed Morphology and Minimalist framework, following the formalist theories popular in the U.S. in the late 20th and early 21st centuries. Although the formalist analyses themselves can be difficult to access for those not well-trained in the theories and models, and many aspects of the analysis are not directly exportable to other analytic approaches to language, Harbour does a good job in grounding his analysis in actual spoken Kiowa data, both elicited and naturally occurring.

Harbour (2003) is a Distributed Morphology analysis of grammatical number in the Kiowa pronominal indexation proclitics. Following from Watkins’ (1984) internal breakdown of the proclitics, Harbour assigns feature values (along with their markedness values) to the grammatical number distinctions made in the language. Harbour (2008) greatly extends this analysis into a 200 page manuscript study, taking further account of the full noun class and number system of Kiowa and the morphosyntactic constructions through which it is realized. Most notably in the manuscript, he provides an outstanding overview of the noun class system. Although he adds only a little in the way of novel
factual data beyond Watkins’ (1984) description, he restates the system in a way that gets at the morphosemantic basis for the noun class divisions much more clearly. He also points out instances where his consultants assign nouns to different classes than did Watkins’ consultants. Such data could provide critical information to determining the semantic basis (or bases) for the assignment of noun class. Finally, Harbour (2008) also contains an appendix with a short interlinear glossed text, further adding to a readily available Kiowa language corpus. Harbour (2011b) also accompanies these two works in addressing grammatical number in a feature-based analysis, but adds in a comparison with Towa, whose noun class and number system is laid out somewhat differently. Harbour (2011a) also incorporates the feature analysis of Kiowa and Towa detailed in the previous article in a discussion of markedness more generally.

Aside from the occasional brief mention of Kiowa in some of his other writings, Harbour also has a number of articles written in collaboration with Laurel Watkins (cf. the above Watkins and Harbour (2010) on the McKenzie orthography) and with Minimalist syntactician David Adger, also of Queen Mary. Adger and Harbour (2007) provides a formalist analysis of argument alignment in the pronominal indexation proclitics in Kiowa, comparing it to the case syncretism seen in some pronouns in Romance languages. Most significantly, however, this is the first article to explicitly point out that Kiowa (and Kiowa-Tanoan more generally to some extent) distinguishes what Dryer (1986) calls “primary” and “secondary object” rather than “direct” and “indirect object”, which categorizes Kiowa with many other North American languages in its argument alignment (although the authors do not cite this typological literature).
Adger, Watkins, and Harbour (2009) is a book-length study which examines the correlated distribution of verbal inflectional suffixes and preverbal particles indicating aspect, negation, modality, and evidentiality in Kiowa. Namely, the authors show how the inflectional suffixes occur in the inverse order of the preverbal particles marking the corresponding categories, rather reminiscent of Baker’s classic (1985) proposal of a “Mirror Principle” between argument indexation on verbs and NP order in the syntax. As with the other works described in the above paragraph, the book consists of an excellent descriptive overview of the relevant facts of Kiowa grammar followed by chapters analyzing the phenomena within their Minimalist theoretical framework.

Finally, and most recently, Harbour, Watkins, and Adger (2012) looks at information and discourse structure and the position of NPs in relation to the preverbal particles and the verb. Although following up on the findings reported in their 2009 book, this study is much more concerned with functional differences in the distribution of NPs than with their structural derivation in a formal framework, providing an important contribution to the analysis of the syntax of non-configurational languages.

As I finished up this writing of this dissertation, an online dictionary of Kiowa has been produced by the University of Oklahoma (Kiowa Dictionary 2014). The lexicon appears to be largely compiled from previous sources, consisting of some few thousand entries, but with the representation transliterated into the McKenzie orthographic system. There are also further additions contributed by native speaker Gus Palmer, Jr. and a small proportion of the entries have an accompanying sound file to demonstrate the pronunciation. A user may search for terms by Kiowa or English translation or browse by semantic categories. At the time of writing, the dictionary was still quite rough, with
inconsistencies in transcription and redundant entries. These faults will undoubtedly be corrected as the project develops further. Even with these minor issues, this dictionary is an invaluable contribution to Kiowa studies, both for academics and for the Kiowa community.

It can be hoped that much more work will be done on Kiowa while there are still fluent speakers of the language. Kiowa is probably the most endangered of the Kiowa-Tanoan languages and the number of speakers has decreased drastically over the past few decades. In addition to the continued work of Laurel Watkins, Daniel Harbour, and Andrew McKenzie, Gus Palmer, Jr. has founded Kiowa language classes at the University of Oklahoma, which may generate more interest in the language in future linguists. Also, Amber Neely, a doctoral student at the University of Oklahoma, is currently assisting Palmer in the development of the Kiowa online dictionary and her dissertation and future research will also hopefully be focused on the Kiowa language.

3.2 **Rio Grande Tewa**

After Kiowa, and among the Tanoan groups, Rio Grande Tewa has had the most amount of linguistic work done in certain areas and the least amount in others. Certainly a greater quantity of lexical and text material is available for Tewa than for any other Tanoan language. Detailed descriptions of the grammar, however, are lacking in both scope and quality, the best not extending beyond the most basic aspects of the phonology and morphology. This poverty in grammatical description along with its (only seeming!) morphological simplicity compared to its sister languages has unfortunately led to Tewa
often being underrepresented in larger discussions of the language family\(^{24}\). But, the availability of so much lexical and textual material in addition to what grammatical description there is does allow the possibility of greatly extending these analyses if someone is willing to make the effort. Indeed, as the Kiowa-Tanoan language now spoken in the largest number of modern communities, it is crucial that that effort be made in order to understand the history of both the Kiowa-Tanoan language family and the cultural development of the Pueblo area.

The earliest documentation of Rio Grande Tewa, as with Kiowa above and the other Tanoan languages below, occurred in the latter half of the 19\(^{th}\) century by parties affiliated with the Bureau of American Ethnology and other government organizations. Actually, there are surprisingly few BAE documents dealing with Tewa considering the number of Tewa-speaking Pueblos at the time. The very first list of words appears to have been collected in 1849\(^{25}\) by Lt. James H. Simpson of the U.S. Army's Topographical Engineers while on assignment in the newly acquired New Mexico territory. During this expedition Simpson collected a number of word lists from different New Mexican languages. These are all collected by BAE affiliate George Gibbs in NAA manuscript 104-a (Gibbs 1852). A copy of Simpson's original Rio Grande Tewa word list is archived as NAA manuscript 1024-a. It consists of 35 transcribed Tewa words denoting people, body parts, natural world entities, and animals, plus eleven English prompts for which no

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\(^{24}\) This is most readily apparent in the writings of George Trager, who seems to have had a rather “Tiwa-centric” view of the family and does not seem to have actually known much about Tewa.

\(^{25}\) The BAE/Smithsonian metadata that accompanies NAA manuscript 104-a (Gibbs 1852) gives the expedition date as 1844. This appears to be a typo or an error because James Simpson was not posted to New Mexico until 1849 (Simpson 1852).
Tewa form is given. The transcriptions are poor, but are recognizably Tewa, and are not without interest to the historical linguist, insofar as they can be interpreted.

Schoolcraft (1853: 446-459) includes a list of approximately 380 words collected from a Tesuque Tewa speaker by David V. Whiting. It appears alongside lists from Mandan, Arapaho, and Cheyenne as representatives of languages spoken west of the Mississippi. While quite a bit longer than Simpson’s, it is not qualitatively any better in its representation of the language. It should be noted, however, that this is among the very few collections of data that represent the Tesuque dialect to any extent.

The next documentation of Tewa came 25 years later during the Wheeler Expedition for Exploration West of the 100th Meridian in the 1870s. In August of 1874, Dr. H. C. Yarrow, the surgeon and naturalist for the expedition, collected approximately 200 words from a man from San Juan Pueblo26 using one of the standard "comparative vocabulary" templates assigned by the Smithsonian Institution (Yarrow 1874). The transcriptions are of approximately the same quality as Simpson's and are thus only marginally useful to the modern linguist. This word list was collected by Francis Klett with many other lists by other authors in NAA manuscript 1870 (Klett 1879). The next Tewa word list was collected six years later, in 1880 by BAE anthropologist F. G. Galbraith (Galbraith 1880, NAA manuscript 1016). This word list, which includes both English and Spanish translations, was collected from a speaker of Santa Clara Tewa and consists of over 250 items (a handful of which are simply Spanish loanwords). While the transcription is comparable to that seen in the previous documents, the length of this wordlist and the nature of some of the forms—not what one would expect if eliciting

26 Yarrow calls the community "Los Luceros", but someone has identified it as San Juan on the BAE manuscript.
from a modern Tewa speaker—make this wordlist notable. Also, it provides dialect
comparison between Santa Clara and the San Juan data seen in Yarrow's list. Galbraith's
list was complemented almost 30 years later by NAA manuscript 1482, another list of
Santa Clara Tewa language data. U.S. Consul Thomas W. Voetter, who had had ten years
of experience with Southwestern Native communities, in 1907 submitted a list of just
over 150 Santa Clara words and phrases to the Smithsonian Institution, and thence to the
BAE (Voetter 1907). While shorter than Galbraith's list, the data are better transcribed
and include some full sentences in Tewa. A comparison with Galbraith's list also shows
inter-speaker variation in the pronunciation of some words.27

No other major linguistic documents from the BAE period are to be found once
John P. Harrington began his work in the early 20th century (see next paragraph). Harry
S. Budd recorded a list of numerals from one to ten in the San Juan dialect in a letter
dated July 29, 1886, archived in NAA manuscript 1023 (Budd 1886). This document is
primarily on the Tiwa languages and provides a comparison of the numeral forms. He
also includes two question-response pairs of sentences in Tewa to illustrate ways of
addressing another person. Hewitt (1896) provides a typed version of Budd’s
comparative list of numerals 1-10 in NAA manuscript 3125, listing the San Juan Tewa
forms next to forms from Taos, Picuris, and Isleta Tiwa. BAE ethnologist Matilda Coxe
Stevenson collected some ethnographic notes—approximately 168 pages of a pocket
notepad—on Santa Clara (and other Pueblos) in 1904 and 1906, gathered in NAA
manuscript 2100. These notes include a small number of transcribed Tewa words,
primarily clan names. This work was followed up in 1930 by Jean Allard Jeançon, who

27 Namely the lists show variation between "j" [ʤ] and "y" [j] within the Santa Clara dialect. While Speirs
(1966) does report this, it is interesting to see it already occurring at such an early date.
also collected over 100 typed pages worth of ethnographic notes on Santa Clara Pueblo, although this document too, NAA manuscript 3185, contains but a handful of Tewa linguistic items. Both of these latter two manuscripts are very valuable for ethnologists and for linguists seeking to contextualize the Tewa language, but they provide little in the way of linguistic data. Luckily, another early 20th century BAE affiliate more than made up for this lack of linguistic work.

John Peabody Harrington began his documentation efforts on the Tewa language at the end of the first decade of the twentieth century, representing some of his earliest fieldwork and publications. Between 1909 and 1916, Harrington collected over 5,000 pages of notes, working to some extent with every Tewa-speaking community, producing the most comprehensive documentation of Tewa language and culture ever to appear. In a 1910 issue of American Anthropologist, Harrington had a brief blurb on the Tewa origin of the Spanish term for a type of Puebloan bread, guayabe (Harrington 1910c), and another on the term for “butterfly” in a few languages of the Southwest, including Tewa (Harrington 1910d). His publications on Tewa really began, however, with a modest article describing Rio Grande Tewa grammar (Harrington 1910e). It presents an inventory of segmental phonemes, only a small subset of the pronominal proclitics, and details next to nothing about the rest of the verbal morphology. Indeed the article pales in comparison to his description of Taos Tiwa which appeared that same

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28 This end date is based upon the date of his last major publications on Tewa and Tanoan. In actuality his fieldwork in New Mexico probably ended a few years earlier.
29 This count is based on the Smithsonian’s publication of his notes in microfilm format and thus represents the number of microfilm frames. In actuality many frames include two pages while others include between 1 and 12 index cards. See paragraph below for a breakdown of the contents of the Harrington notes.
30 Harrington worked only minimally with Pojoaque, which had virtually died out as a community by the beginning of the 20th century (to be revived later), and with Tesuque, which was at that time—and still is—very closed off to outsiders and refused to allow him access.
year (Harrington 1910a), which is especially unfortunate since another grammatical
description of Rio Grande Tewa would not appear until almost 60 years later. Through
the next half dozen years working with the Tewa, however, Harrington would produce
some of the most detailed lexical and ethnographic work seen to date on any Native
North American language.

Harrington (1912a) is a lengthy ethnographic article detailing an indigenous
gambling game called in Spanish cañute. It includes numerous Tewa terms for game
components and design patterns illustrating both morphological constructions and native
Tewa metaphors. Harrington (1912b) is an investigation into Rio Grande Tewa kinship
terms, describing their form and usage, and focuses especially on the structure of the
system. Harrington (1912c) is a brief proceedings article arguing that the previously
undocumented Tano language, spoken by a people who formerly lived in the Galisteo
Basin south of Santa Fe, was a dialect of—or closely related to—Tewa. His evidence is
based upon a brief elicitation session with remnant Tano living at the Keresan Pueblo of
Santo Domingo. These articles, however, are nearly forgettable compared to his next few
publications.

In 1914 Harrington produced a 76 page ethnozoology of Tewa, co-authored with
Junius Henderson, curator of the University of Colorado Museum of Natural History, and
published as Bureau of American Ethnology Bulletin 56 (Henderson and Harrington
1914). This manuscript lists the animal life known to New Mexico and the Colorado
Plateau, including both their common English names and their contemporary Latinate
binomial nomenclature (many of these common and scientific designations have changed
by the beginning of the 21st century). Life forms include mammals, birds, reptiles, fish,
amphibians, insects, arachnids, and mollusks. Also listed are body parts and other terminology related to animals. The Tewa name is given for all species for which a term could be elicited from speakers, although there are some species and sub-species for which no indigenous label could be found. In addition to this simple linguistic identification, many of the entries are accompanied by ethnographic descriptions of Tewa interaction with and use of the animals. This work was mirrored two years later with a Tewa ethnobotany of similar structure published as BAE Bulletin 5531 (Robbins, Harrington, and Freire-Marreco 1916). This 118-page work, co-authored with botanist Wilfred Robbins and anthropologist Barbara Freire-Marreco, details traditional Tewa usage of wild plants and fungi and horticultural pursuits of domestic plants and plant parts. Both of these works are valuable sources of vocabulary but are even richer for the traditional cultural knowledge described that would otherwise have been lost as Pueblo culture has changed from a subsistence to a cash economy through the 20th century.

The above two publications are essentially only lead-ups to Harrington’s greatest work on Tewa (and Tanoan): The Ethnogeography of the Tewa Indians (Harrington 1916). This 636 page tome, published as BAE Annual Report 29, is one of the most impressive feats of linguistic ethnography of the twentieth century. It comprehensively lists the Tewa names of towns, villages, ruins, and geographical features throughout the Tewa region of New Mexico and adjacent areas, providing information on the history, mythology, and significance of each feature in the Tewa experience. It also gives a morphological breakdown of every Tewa form given, making it the most extensive source for lexical material, and includes lexical terms from surrounding languages (Tiwa, Tiwanak).
Towa, Keresan, and even some Zuni and Hopi) for comparison. In terms of cultural information, it stands alongside Ortiz (1969) as a must-read for any student of Tewa ethnology and is easily just as important for its linguistic contribution to Tewa and Kiowa-Tanoan studies. Its one major flaw from a linguistic perspective is in the transcription. Harrington had an excellent phonetic ear and was a first-rate linguistic analyst. However, despite the fact that he recognized the phonemic contrastiveness of vowel length and tone in Tewa, he neglected to actually represent this information in his transcriptions, which were otherwise fairly accurate. This is true not only of Harrington (1916), but of all of his writings on Tewa, except Henderson and Harrington (1914), which does at least show vowel length. Luckily, later work on Tewa allows the careful analyst to reconstruct this phonological information for many of Harrington’s forms. Harrington may also be faulted with going overboard in some of his morphological analyses, assigning meaning to submorphemic forms, although this problem affects only a small percentage of his entries.

Harrington followed this massive work up a few years later with two articles on Tewa toponyms of places in the area of Santa Fe. Harrington (1919) is a four page summary (plus a map) of some of the more notable place names in northern New Mexico, published in *El Palacio*, a popular New Mexico history journal. Harrington (1920) is essentially a distillation of the same published in *American Anthropologist*, thus targeted towards an academic audience less familiar with the finer geographical points of New

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32 In terms of tone, it was probable that he just found it difficult to isolate the phonemic prototypes amongst the various effects of sandhi, intonation, and the strong non-phonemic stress of the language. Coupled with the fact that tone systems were not as well studied at the time and that Harrington would not have encountered much in the way of tone languages in his work to date in the Americas, he might be excused for not wishing to share his confusion with his readership.
Mexico. Neither of the articles is exclusively on Tewa toponyms, but the overwhelming majority of the names given are Tewa. As Harrington had already moved on to doing research among Californian languages when these articles appeared, it would be many years before he published again on any Tanoan language. His next, and final, article on Rio Grande Tewa consisted of a set of three traditional Tewa narratives published in 1947 in the *International Journal of American Linguistics* (Harrington 1947). These were among the first Tewa texts ever to be published and are among the few to be found today that represent traditional stories.

The extent of J. P. Harrington’s linguistic and ethnographic research among indigenous American cultures has meant that his published works are not his only legacy. The majority of his documentation exists in his field notes which, as mentioned above, are available on microfilm (Mills 1981) and have yet to be fully utilized in research on all of the languages he studied. Given the extent of his publications on Tewa, particularly in Harrington (1916), it is likely that there is relatively little in the 8 reels of 5,243 microfilm frames of his field notes that is not found in his printed works, but there does still appear to be a substantial amount of unpublished data, particularly some texts.

The Tewa portion of Harrington’s notes encompass the reels numbered 50-57 of the Southwest portion (Part 4) of *The Papers of John Peabody Harrington in the Smithsonian Institution, 1907-1957*. Reel 50 contains seven notebooks, between 30 and 80 pages in length, covering grammar, vocabulary, one or two texts, census information, and ethnographic notes, plus approximately 100 frames of notecards of linguistic data. The run of linguistic notecards continues through reels 51, 52, and the first third of 53. Most of reel 54 also consists of notecards on linguistic and ethnographic topics,
constituting over 9,000 index cards of notes, most of which data appear to have appeared in Harrington’s published works. The rest of reel 53 consists of hundreds of notes on ethnographic topics and the remainder of reel 54 consists of about 250 pages of lexical notes. Reel 55 and the first part of 56 largely consist of re-elicitations with accompanying notes done with a few Tewa speakers many years after Harrington’s original fieldwork. Much of the rest of reel 56 would be of interest to the modern Kiowa-Tanoan scholar, being comprised of more than 15 transcribed Tewa texts with interlinear translation. Although most are fairly short, they do represent traditional Tewa stories to a greater extent than is otherwise currently available. The remainder of reel 56 and the first fifth of reel 57 consist of notes pertaining to Harrington’s publications on Tewa. The rest of reel 57 would also be of strong interest to researchers as it is composed of draft manuscripts and notes for articles that were never published. These include an article on ablaut, two or more articles on tone, one on phonetics, and four on ethnohistorical topics. There is also a nearly 400-page outline towards a grammar of Rio Grande Tewa, although it is highly schematic and was never filled with much in the way of data or prose. The rest of the reel contains a few hundred more pages of miscellaneous linguistic notes.

Harrington’s notes on Tewa, while not harboring as much unpublished data as his notes on Tiwa and Towa, are a rich and untapped resource on the language. They are mostly quite readable\(^\text{33}\) and are becoming more accessible as more university libraries acquire the microfilm reels and begin digitizing them. Despite the improved quality of later research on the language in terms of phonological accuracy and grammatical

\(^{33}\) Harrington does not appear to have adopted the paranoid practice of encrypting his notes or otherwise writing illegibly in his work on Tanoan as has been reported for his later work on Californian languages.
analysis, Harrington’s massive amount of data collection and description remains a powerhouse in the field of Tewa studies.

It would be some decades before serious linguistic documentation and descriptive work would again address Rio Grande Tewa. The great American linguist Edward Sapir recorded a wordlist of Tewa that consisted of 22 forms (Sapir 1915). The list is collected with other linguistic papers on Native American languages at the American Philosophical Society. Also in this collection is material on songs from Cochiti and San Juan Pueblo gathered by ethnographer Gertrude Kurath (Kurath 1957). These documents include a phonological chart, a list of ceremonial terms and other words, and some text associated with the songs. I have not yet gained access to either of these archival manuscripts at the time of this writing.

The 1920s saw a fair amount of ethnographic work, however, most notably that of Elsie Clews Parsons. Although she did not have linguistic or transcription training, she would at least make the effort to include native language terms in her works. Parsons (1924a, b, 1926b, 1929) all look at aspects of social structure and practices among the Tewa, and include sporadic vocabulary items and phrases, both in Tewa and in English translation. Parsons (1932b) is an examination of kinship systems and terminology amongst all of the Pueblos, including Tewa. The most important work for those interested in language, though, is Parsons (1926a), a large collection of Tewa stories. Although only given in English translation and sprinkled with Tewa words, they provide a decent representation of various genres of Tewa narrative. James (1927) is another set of Tewa stories given in English translation, but includes very few instances of Tewa words. In a similar vein, Spinden (1933) is a collection of Tewa songs given in English translation.
However, he does provide the Tewa forms of some songs (in poor transcription) in the endnotes. Even if only in English translation, these works are valuable resources for getting a sense of Tewa textual composition.

Also during this period, Alexander Lesser made his 1929 Southwest expedition to elicit kinship terminology, as mentioned in the Kiowa section above (Lesser 1929b). For Rio Grande Tewa, he collected data individually from all Tewa-speaking Pueblos except Pojoaque, filling about 80 pages of pocket notebooks. The notes essentially provide an update and a second check to Harrington (1912b), but also provide an opportunity for comparison of forms and usage across five dialects of Rio Grande Tewa.

Another twenty years would pass before the next era of Tewa language study. In the late 1940s, Edward P. Dozier, a native of Santa Clara Pueblo and a fluent speaker of that dialect of Rio Grande Tewa, completed a Master’s degree in anthropology at the University of New Mexico. For his thesis he wrote a description and analysis of the Tewa verb (Dozier 1949), which was edited and published as an article in the *International Journal of American Linguistics* a few years later (Dozier 1953). While rich with data, in particular forms demonstrating noun incorporation and verb compounding, there is little in the way of analysis. However, Dozier’s publications represent a move towards a more accurate phonemic representation of Rio Grande Tewa, including representation of tone and vowel length. Indeed, alongside these articles, he also coauthored with linguist Harry Hoijer an article on the phonemes of Santa Clara Tewa (Hoijer and Dozier 1949). Also not particularly in-depth in terms of analysis, it did provide the most succinct and accurate presentation of sound patterns in the language to date. Hoijer and Dozier’s work
together is also available in audio material housed at the Archives of Traditional Music\textsuperscript{34} at Indiana University (Hoijer and Dozier 1948, 1953). These audio materials include recordings of Dozier pronouncing all of the words given as examples in Hoijer and Dozier (1949) as well as a number of non-transcribed running texts. Namely there are three narratives given by Dozier on the basis of still image prompts, two of about a minute in length and one of approximately three minutes, and two tellings of a story of Blue Corn Girl, each approximately 20 minutes in duration. These may be among the earliest audio recordings made of the Rio Grande Tewa language.

Dozier, being trained as a cultural anthropologist more than as a linguist, never returned to any structural descriptive work on Rio Grande Tewa as he went on to finish his Ph.D. in anthropology\textsuperscript{35}. Dozier (1956), republished as a book chapter (Dozier 1964a), is an analysis of linguistic acculturation using Rio Grande Tewa and the Yuman language Yaqui as case studies. In particular it compares the extent and types of lexical borrowing from Spanish in both languages, noting the resistance of Tewa to linguistic acculturation compared to the Yaqui. Dozier (1958) is an analysis of the different genres and functions of singing and chanting among both the Rio Grande and Arizona Tewa, although it gives no exemplification of linguistic form. While Dozier occasionally makes reference to the Rio Grande Tewa in his other anthropological work, he largely spent the rest of his career researching other cultures. He did do some intensive ethnographic work

\textsuperscript{34} This and other language recordings mentioned as archived at this institution were originally submitted to the Archives of the Languages of the World established in 1953 (Robinett 1954). This archive was later dissolved and subsumed under the current Archives of Traditional Music.

\textsuperscript{35} See Norcini (1995, 2007) for a biography of Dozier and a critical analysis of his work as a Native American in the field of anthropology.
among the Arizona Tewa, however, which will be addressed in the next section of this literature review.

Another minor work produced around the same time as Dozier’s publications is the recordings made by Stanley Newman and Max Ayer at the Indian School in Albuquerque, New Mexico (Newman and Ayer 1950). Also archived at Indiana University’s Archive of Traditional Music, this audio material consists of recordings of students36 from various Native American speech communities at the Indian School, including a speaker of Santa Clara Tewa37. The recording consists of 30 basic vocabulary items and phrases and a short standardized text translated from an English prompt. There are transcriptions to accompany the wordlists—rough, but done by a professional linguist—although none are found for the texts.

Also worth mentioning during this mid-century period of research is Alfonso Ortiz, another native Tewa speaker (from San Juan Pueblo) who received a Ph.D. in anthropology. Although Ortiz never published any language-oriented work, much of his cultural research was on the Pueblos of New Mexico. Most notably, in 1969 he published *The Tewa World: Space, Time, Being and Becoming in a Pueblo Society*, a revised version of his 1967 doctoral dissertation. This amazing and rich volume lays out in detail various aspects of Tewa religion, ceremony, and worldview, a fact which got him in trouble with his own home Pueblo. The book contains relatively few Tewa words to provide linguistic information, most in mediocre transcription (but see Ortiz (1979b) for

36 It is unclear what the exact status of the speakers is. Most or all of them are adults.
37 Other non-Tanoan languages on the recording are Hopi, Navajo, Zuni, Laguna Keres, Pawnee, Shawnee, Chippewa, and Lakota. There are also speakers of Jemez Towa and Isleta Southern Tiwa, as will be mentioned in the relevant sections below.
an updated transcription of many of the terms). However, it must be listed as an essential piece for the study of Rio Grande Tewa culture and so warrants mention here.

The 1960s also witnessed the most substantial leap forward in the study of the Tewa language since Harrington’s work of the early twentieth century. Randall Speirs, a Baptist missionary serving among the Tewa communities and working under the auspices of the Summer Institute of Linguistics (SIL) and the Wycliffe Bible Translators, undertook serious study of the Rio Grande Tewa language beginning in the early 1960s. Having figured out the basics of the tone system, vowel length, and nasalization early on, it appears, Speirs developed a standardized orthography for representing the language. This orthography is first seen in community-oriented booklets published by SIL. SIL (1963a-c) is a series of short booklets that serve to introduce the orthography, presenting pictures with the appropriate Tewa word illustrated. Speirs (1968a, b) is a two-volume set also published by SIL, which includes exercises and reading and writing practice to teach the orthography, vocabulary, and grammar of the language. Speirs and Speirs (1979) is a slightly revised version of this booklet set. These booklets are also interesting in that they provide occasional notes on dialect differences among the Rio Grande Tewa communities.

In addition to these manuscripts with an explicitly pedagogical bent, Speirs also assisted, directly or indirectly, in the development of reference material produced by SIL as well. SIL (1969a) is the first short dictionary of the Tewa language. Organized by semantic domains—with words within the domains listed alphabetically by their English translations—the dictionary is essentially a glossary which lists English words and their rough Tewa equivalent. The overwhelming majority of the words in this short dictionary
are nouns, although common adjectives, numerals, and quantifiers are also included. SIL (1970) is a compendium of indigenous Rio Grande Tewa names, including the literal translation—most names being compounds—and the Pueblos at which the names are used. While not designed as an ethnographic piece, this booklet is just as notable as, if far less detailed than, Harrington’s ethnogeography in capturing a very culture-specific domain of language. This not only provides a valuable resource for onomastics, but also complements the other lexical resources in illustrating some less common (and sometimes archaic) morphemes of the language that are included in names.

Furthermore via SIL and Wycliffe Bible Translators, Speirs helped to make available a large amount of narrative material in Tewa. SIL (1969b) is a compilation of three well-known European folk tales translated into Tewa: Goldilocks and the Three Bears, translated into the San Juan dialect, and Little Red Riding Hood, and The Three Little Pigs, both translated into the Santa Clara dialect. Illustrations on almost every page are included to help the language learner who is not fluent in reading the language follow along with the text. SIL (1974), perhaps the most curious group of texts, is a fifty page booklet composed of paragraph-length story jokes. Many are accompanied by illustrations, so there are actually only 38 jokes. Twenty-six of these are in the San Juan dialect, the rest are in the Santa Clara dialect. Characters in the jokes have indigenous Tewa names, but most of the stories take place in a modern generic American context, so it is ambiguous whether they were created by a native Tewa speaker or if they are translations of some set of texts originally written in English. No English translations or glosses accompany either of these sets of texts, thus requiring familiarity with the language in order to make use of them.
Of course given the Protestant Christian affiliation of SIL and Speirs’ work as a minister, it would be expected that there would also be translations of Christian texts as well. Wycliffe (1967) is a collection of 39 Christian hymns with their lyrics translated into Tewa, although their titles are given in English to provide easy recognition. As hymns, the texts are quite short and simple, the literal content having been further adjusted to fit the Tewa translation to the melody. The dialect of the hymns appears to be San Juan. Wycliffe (1969) is a translation of the *Book of Mark* into the Santa Clara dialect. At almost 100 pages of continuous Tewa text, it is the second longest single written text in Rio Grande Tewa to be published. This was followed with Wycliffe (1973), a translation of the *Epistle of James* into the San Juan dialect. Although one of the shorter books of the New Testament, it is another 16 pages of Tewa text. These Biblical translations, like the above publications, are not accompanied by any English translation or gloss. But, given that chapter and verse numbers are included, it is not difficult to analyze these texts. There is also a set of 18 audio cassette tapes containing a Tewa translation of the majority of the New Testament as well as an accompanying transcription (Wycliffe n.d.). At a total of 24 hours of audio material and almost 350 pages of written text, this material is primarily in the San Juan dialect, with limited portions in the Santa Clara variety. The translation is almost identical to the printed Tewa translations of Wycliffe (1969, 1973) suggesting that the two endeavors were associated.

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38 Speirs is not overtly credited in these works, so it is possible they were primarily translated by somebody else. Indeed, some of the work might be better credited to Esther Martinez (see below) and other native Tewa speakers. Given the style and orthography, however, it is likely that Speirs had at least an indirect role in their creation.

39 The booklet is paginated to 101 pages. However, there are a number of half-page and full-page illustrations.
Amidst this community-oriented and missionary work among the Rio Grande Tewa Pueblos, Randall Speirs also undertook academic work at the State University of New York at Buffalo. His doctoral dissertation (Speirs 1966) is the first grammatical description of the phonology and morphology of Rio Grande Tewa since Harrington (1910e). It provides the best treatment of segmental and tonal phonology yet to be published, also making clear some of the issues where further analysis is needed. It is here that he also explicitly lays out the three-tone analysis of the language that has been followed since. His treatment of morphology is quite good, laying out most of the areas of interest and complexity and inventorying the majority of the bound grammatical morphemes, even if it does not delve into the functions of the morphemes adequately. It is, however, a product of its time, and the mid-20th century structuralist analysis he takes is extremely tedious to wade through, especially his overview of the verbal pronominal proclitics. But, a careful reading in concert with an eye to the other publications on Tewa (especially Martinez 1982) makes this dissertation an essential piece at present for understanding Rio Grande Tewa grammar.

Having attained his doctorate, Randall Speirs appears not to have pursued academia further, returning to his community and ministry-oriented work. His one subsequent academic publication is Speirs (1972), an article published in a volume honoring George Trager. This article expands on a chapter of his dissertation, presenting a clearer outline and analysis of the Tewa number and noun class system which, while patterning much like the systems seen in other Kiowa-Tanoan languages, is far more subtle in its realization. This article is complemented by Speirs (1974), a publication by Randall’s wife Anna Speirs. This latter work not only makes even clearer the number and
noun class system of Rio Grande Tewa, but is also the one work to point out the
classificatory use of positional verbs in Kiowa-Tanoan (although she only points out and
discusses the phenomenon in Tewa). Despite the high quality of their linguistic analyses,
neither Speirs followed up these articles with subsequent academic publications, although
they do appear to have participated in the Kiowa-Tanoan conferences of the 1970s and
early 1980s. Speirs (1986, n.d.), Speirs and Speirs (1981a), and Speirs and Martinez
(1981) are all handouts of papers presented at these conferences. These are difficult to
find and I have not managed to get a hold of them yet to say much about them.

Perhaps the greatest contribution of the Speirs to work on Tewa was their part in
helping to train Esther Martinez in the writing and analysis of the language. Martinez, a
storyteller and native Tewa speaker from Ohkay Owingeh (San Juan Pueblo), appears to
have collaborated with the Speirs in at least some of their efforts, perhaps acting as one of
their primary consultants. In the early 1970s, she attended linguistic training with Anna
Speirs at the Summer Institute of Linguistics at the University of North Dakota. This
training would help lead to the production of Martinez (1982), perhaps the most
influential written language work among the Tewa communities. This book extends on
SIL’s (1969a) dictionary of Tewa, including even more lexical items and semantic
domains. Furthermore, it contains a full inventory of pronominal proclitics (for the San
Juan dialect, at least) clearly laid out in tables and broken down into coherent sets. There
is also an appendix of verbs listed with their five core stem forms. Both of these
appendices provide a valuable (and much clearer!) supplement to Speirs’ (1966) analysis.
This dictionary has become a well-respected cornerstone of language revitalization
endeavors amongst the six Rio Grande Tewa Pueblos of New Mexico. Even though the
dialect represented in the dictionary is purely San Juan, other dialects are close enough that they can use the dictionary with only minor adjustments for lexical items.

The same year the dictionary was published, the Pueblo of San Juan also published a set of five indigenous Tewa texts in the language (Oke Oweenge 1982), as told by Martinez. Unlike the SIL and Wycliffe texts above, this set is accompanied by free English translations following the Tewa versions, thus allowing the language learner a foothold in interpreting the stories. These narratives are particularly valuable insofar as they are not translations from English, providing examples of language that are both culturally appropriate and stylistically more natural than the Christian texts and European folktales above. It also appears that Martinez may have been involved in the Wycliffe translations of the New Testament mentioned above, perhaps even as primary translator.

As a storyteller, Martinez contributed to several publications based on her stories, mainly oriented towards children, although those publications were mainly in English. She did also continue to contribute to the Ohkay Owingeh language revitalization program, however. In 2004 she published a collection of stories—including an audio CD of her telling some of these stories—along with an autobiography (Martinez 2004). Although the stories are presented in English, many stories include songs the lyrics of which are printed in Tewa.

Tragically, Martinez was killed in an automobile accident in 2006, at the age of 94, on her way home from Washington, D.C. after having received a National Heritage Fellowship by the National Endowment for the Arts. The Esther Martinez Native American Languages Preservation Act, a federal law granting funding to Native communities for the preservation and promotion of language and culture, was named for
her and has ensured that her legacy of teaching the Tewa language will continue beyond her passing.

Within this time period of the 1970s through 1990s, there have also been other community-oriented endeavors and publications undertaken by Tewa people. Gutierrez and Suazo (1970s) is an illustrated collection of vocabulary and sentences written entirely in Tewa for the Santa Clara language program. Using an orthographic system distinct from that developed for San Juan—it lacks tone marking and is a little less consistent—it seems to be geared towards teaching a few basic phrases for discussing indigenous arts and crafts. Santa Clara Pueblo also has had a dictionary project in the works, producing updated drafts at irregular intervals. However, the dictionary is intended for community use only and has not been published.

Velarde (1989) is a beautifully illustrated children’s book by a Santa Clara artist. It contains a collection of six short Tewa stories in English. Although the book contains only a couple of words of written Tewa, it does provide an example of indigenous story style, even if filtered through translation.

Finally, Shutes and Mellick (1996) is a biography of a San Juan Pueblo artist and language activist, Geronima Cruz Montoya. The work paints a good picture of the life of a Tewa woman in the 20th century, thus depicting something of the cultural context for language use. It also includes sporadic Tewa words, written quite accurately in the San Juan orthography developed by Speirs and Martinez, as described above.

The 21st century has not yet seen much in the way of academic writings on the Rio Grande Tewa language. This is not to say that no linguistic work is being done—indeed the author of this dissertation has been working with Tewa speakers for a number
of years, alongside other linguists from the University of New Mexico—but most of this work is oriented towards language revitalization programs within the Tewa communities and there are currently stipulations in place by these communities that limit the possibility of academic publication. I have been developing a grammatical description of Rio Grande Tewa as part of this dissertation project, although I am not certain at present to what extent I will publish this work given current community concerns of distribution of information on their language. There have been a few language-centered works released in the past decade and a half though. Scott Ortman, an archaeologist who has been working on a theory of Tewa origins in the Mesa Verde region, has included linguistic evidence in his argumentation. His work, being more comparative in nature, will be surveyed in section 3.9 below. Ashworth et al. (2011) is a proceedings article from a conference talk that compares language revitalization efforts among four communities of the Southwest, including one Rio Grande Tewa Pueblo. Ashworth (2013) is a dissertation that addresses the language ideologies surrounding writing and orthography in the language revitalization program at the same Tewa Pueblo as in the previous paper, anonymously referred to as Than Ówîngeh.

In terms of audio material, the Global Recordings Network described in the previous section has made available a 15 minute audio clip of short Christian narratives in Santa Clara Tewa (http://globalrecordings.net/program/C12341) and a small number of other Tewa audio clips are to be found on the internet, including a 54 second sample on the website for the Indian Pueblo Cultural Center (http://www.indianpueblo.org/19pueblos/ language.html)—also in the Santa Clara dialect—and sporadic clips posted by individuals on YouTube (www.youtube.com). In
May of 2013, a short 17 minute film called *The Longest Sun*, whose dialogue is entirely in San Juan Tewa, was released as part of the PBS Online Film Festival\(^{40}\) (http://www.pbs.org/filmfestival/all-films/longest-sun/). It is not unlikely that even more audio and video clips will be released online through the early 21\(^{st}\) century via popular media outlets.

### 3.3 Arizona Tewa

Of the seven extant Kiowa-Tanoan languages distinguished in this dissertation, Arizona Tewa (a.k.a. Hopi-Tewa, or Hano\(^{41}\)) is the most poorly documented and described, at least in terms of publicly accessible resources. There have been quite a number of publications focused on Arizona Tewa, but reliable transcriptions and grammatical information beyond the most cursory of morphosyntactic constructions are difficult to come by. This fact notwithstanding, Arizona Tewa perhaps has the best description of sociocultural usage of the language within its native community.

Documentation of Arizona Tewa began after the New Mexico Territory passed into the hands of the U.S., as with the other languages, in the late 19\(^{th}\) century. In this early period, Arizona Tewa received just as much attention as most of the other languages of the area, although it probably garnered more attention than it otherwise would have due to its unusual position in Hopi territory far from other Tewa communities. This was perhaps also augmented by the strong interest in the Hopi

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\(^{40}\) A three minute original version of this film had been released on YouTube in 2011: https://www.youtube.com/watch?v=Pe8EIPnHwkk.

\(^{41}\) This term is thought to derive from “Tano” (in Tewa, tʰa nû?), the Southern Tewa groups of the Galisteo Basin who are thought to be the ancestors of the modern Arizona Tewa.
throughout the late 19th and early 20th century that brought numerous researchers to the three Mesas of what is now the Hopi Reservation.

The first wordlist of Arizona Tewa appears to have been collected by English botanist Edward Palmer in 1869, who recorded 37 basic Tewa vocabulary items alongside a six-page list of Hopi terms (Palmer 1869). This list is housed with the other Bureau of American Ethnology manuscripts at the Smithsonian’s National Anthropological Archive, designated as NAA manuscript 746. The list is also reprinted by a scribe in NAA manuscript 1022 with comparative words of Rio Grande Tewa taken from Simpson (1896a) (Palmer 1896). The quality of the transcription is typical of work from this era, but Palmer’s Tewa is not all that bad and is easily interpretable from modern familiarity with Tewa. Unfortunately the forms he gives present little that shows the distinctiveness of Arizona Tewa from Rio Grande Tewa, the languages being quite close in much of their vocabulary.

The next documentation effort among the Tewa of Hopi was more extensive. Sullivan (1883), archived as NAA manuscript 1015, documents hundreds of basic lexical items and short phrases collected in one of the BAE’s hundred-page language collection notebooks42. Given the extent of the material in this document, it is much more informative of the distinctive Arizona Tewa forms, despite the transcription, which is adequate for the era. While I have not seen any amazingly revelatory forms in the

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42 These notebooks are an extended version of the BAE forms described in the previous two sections, providing English prompts for basic vocabulary items. These larger notebooks are divided into 24 semantic domains and are formatted to permit up to 33 entries a page, including blank slots with no prompt. Thus, they are designed to induce the collection of ideally a couple thousand lexical items, at least. None of these notebooks for any of the Kiowa-Tanoan languages is filled to capacity, however.
notbook, it does include words that are not otherwise listed in any of the 20th century published material and may at least serve to answer a few comparative questions.

This was followed by another lengthy wordlist in Stephen (1892), NAA manuscript 793. Alexander M. Stephen collected approximately 800 words and phrases in both Hopi and Tewa under Colonel James Stevenson’s expedition with the U.S. Geological Survey. While there is of course a certain amount of overlap with Sullivan (and Palmer) in basic vocabulary items, Stephen’s list includes many phrases that are unique and more culturally specific to life on the Hopi Mesas. He did not make use of one of the BAE’s standardized lists of English prompts, encouraging more flexibility and originality in his elicitation. His transcription is no better or worse than the preceding two documenters, but the differences amongst the three does help to interpret in modern terms what the authors might have been hearing. Stephen (n.d.) is a copy by Albert Gatschet of just the Tewa portion of Stephen’s elicitation, archived as NAA manuscript 1540. The entries are ordered alphabetically according to the Tewa forms, but otherwise contain no more information than the original manuscript.

Also within this era, James Mooney collected a small notebook of notes on Hopi foods and miscellaneous basic vocabulary of Arizona Tewa (Mooney 1900). Archived as NAA manuscript 30, the pocket-sized notebook consists of approximately 10 pages of notes on Tewa, including numerals, clan names, basic kinship terms, natural world and fauna, and various other items. Mooney’s writing in English is nigh inscrutable without a fair amount of effort, but his transcription of other languages tends to be interpretable, if less neat than others’. Still, his notes on Arizona Tewa provide little that cannot be found
in the other sources and is thus best used as another source of alternative transcriptions for interpreting the most likely phonetic form.

Finally, Fewkes (1894), a published article, surveys demographic information on the residents of Hopi territory, including ethnic identification and clan membership, and focuses especially on the Tewa population. In terms of linguistic forms, he includes only clan names, but the article is otherwise useful for evaluating the linguistic context of First Mesa at the end of the 19th century.

The beginning of the 20th century saw an immediate decrease in work on Arizona Tewa (even as work with the neighboring Hopi intensified). John P. Harrington, the BAE’s powerhouse linguist working on Tanoan languages in the 1900s and 1910s, does not appear to have done any substantial fieldwork on First Mesa. Some Arizona Tewa forms are included in Henderson and Harrington (1914), Harrington (1916), and especially in Robbins et al (1916), but this does not constitute a large amount of data. The one person to do significant fieldwork with the Arizona Tewa during this period was English anthropologist Barbara Freire-Marreco, who was particularly interested in the kinship system. Freire-Marreco (1914) is effectively a comprehensive list of kinship terms with substantial commentary on their usage and the standard kinship relations. Freire-Marreco (1915) is a follow-up that addresses the use of the diminutive suffix ‘e /ɨe/’ within certain reciprocal kinship terms and the possible influence of child language on the form of many of the kinship words. It appears that she had originally intended to publish more of her ethnographic work on the Arizona Tewa, but these two articles and her contribution to Robbins, Harrington, and Freire-Marreco (1916) seems to be the extent of her reports. At least a portion of her field notes, however, is included in the
Tewa section of John P. Harrington’s field notes described in section 3.2. Her transcriptions tend to be relatively good, lacking primarily in information on tone and vowel length as with other works from this time period.

It would be many years before any more substantial linguistic work would be done on Tewa. Elsie Clews Parsons did a little ethnographic research with an Arizona Tewa man in the 1920s while residing at Hopi. Parsons (1925b) is the journal of an Arizona Tewa man which describes daily and ritual life in Tewa Village. Parsons (1926b) is a brief comparison of New Mexican Tewa and Arizona Tewa ceremonialism, written in French. Parsons (1926c) is a fuller account of the ceremonial cycle at Tewa Village on First Mesa. As with Parsons’ numerous other ethnographic works, she includes many native terms, albeit in mediocre transcription. The former of the two articles contains only a couple of items, but the latter article contains a fair few. Her collection of Tewa Tales (Parsons 1926a) also includes a few narratives from the Arizona Tewa, but Parsons never did a full ethnographic study as she did for many other communities. It would be more than twenty years before such work would be done.

In the early 1950s, Edward Dozier, the same anthropologist discussed in the previous section, did his doctoral research with the Arizona Tewa. Being himself a Tewa from Santa Clara Pueblo in New Mexico, Dozier was able to establish a close rapport with his Arizona kinsmen and take note of many of the similarities and differences between the Tewa of Arizona and New Mexico. Dozier (1954a) is the publication of his dissertation, an extensive ethnography of the Tewa of First Mesa. It was revised and republished under a different title in Dozier (1966a). Dozier (1955) is an article that follows up on his analysis of the kinship system in his 1954 manuscript. In particular it
takes note of the fact that, although the native Tewa terminology has largely remained intact—with only a couple of items imported from Hopi—the usage of these terms has changed to further conform to the clan and kin system of the Hopi. Largely, kin and clan terms are the only Tewa lexical items that occur in these three publications. While the transcription appears to be fairly accurate, including representation of tone and vowel length, a caveat is in order to the reader of these works. The phonetic key Dozier gives at the beginning of Dozier (1954a) is actually a representation of the phonemes of the Santa Clara dialect of Rio Grande Tewa. Indeed, Dozier’s description of the mutual intelligibility of the two Tewa languages does not appear to reflect a fully objective assessment. Kroskrity (2000b) describes, for example, how Arizona Tewa who had worked with Dozier reported that they and Dozier required a couple weeks of adjustment before they could understand and converse in their respective varieties of Tewa. In short Dozier’s perspective on the Arizona Tewa language may be colored somewhat by his own experience with his native Rio Grande Tewa. While the effect of this is interesting in its own right, it does warrant a cautious evaluation of his data given that Dozier’s research focus was not a study of the language. His ethnographic work, however, is of decent quality for its time and is a cornerstone for Arizona Tewa research.

Shortly after Dozier did his fieldwork in the 1950s, the first major effort towards a description of the Arizona Tewa language was undertaken by John Yegerlehner, a

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43 It is possible that this also reflects a cline of mutual intelligibility between the two varieties wherein Rio Grande Tewa speakers would find it easier to understand Arizona Tewa speakers than the latter could understand the former. Arizona Tewa being more conservative in certain areas of the lexicon, Rio Grande Tewa might sound to them a little too “clipped” and “fast” to be easily understood while the Arizona Tewa conservations might give New Mexico Tewa recognizable, if to them archaic, patterns to catch hold of. Furthermore, Tewa from New Mexico would likely tend to be more acclimated to dialectal variation in their language given the differences among the speech of the six Rio Grande Tewa Pueblos while variation among the Arizona Tewa would be much less.
doctoral student in anthropology from Indiana University. His fieldwork, done in the summers of 1955 and 1956, led to Yegerlehner (1957), the first and most extensive treatment of the phonology and morphology of the language to appear to date. The dissertation is very much a product of its time, being heavily influenced by mid-century American structuralism. It would strike the modern reader as unnecessarily obtuse in the presentation of basic information, much like Speirs’ (1966) description of Rio Grande Tewa. Nevertheless, its treatment of the basic formal patterns in the language is not bad, all things considered. It does little to address linguistic functions and larger morphosyntactic constructions—to be expected since the title specifies it is only addressing phonology and morphology—and transcription of individual morphemes and words are sometimes inconsistent. The latter appears to be due more to typographic errors than to phonetic incompetence, but it is frequent enough to be an annoyance to the careful reader.

Yegerlehner produced a few more articles on Arizona Tewa before disappearing from Kiowa-Tanoan studies. Yegerlehner (1958) briefly analyzes the differences in the pronunciation of a short text between its sung version versus its spoken version, pointing out in particular the different interactions of lexical tone and intonation. Yegerlehner (1959a) and (1959b) are publications of the analysis in his dissertation of the phonemic inventory and the pronouns and pronominal proclitics respectively. If anything, his analysis is even more abstract in the articles than in his dissertation, but they add little to our knowledge of the language. In addition to these publications, Yegerlehner (1955/1956) consists of just less than 100 minutes of recordings that he made during his fieldwork expedition, currently archived in the Archives of Traditional Music at Indiana
University. The recordings consist of strings of minimal and near minimal pairs of lexical items. He appears only to have recorded material for his phonemic analysis and thus the tapes include little lexical variety and few of the sentences and morphologically complex verbal forms that are to be seen in his dissertation. The recordings thus provide only enough to get a sense of Arizona Tewa phonetics, but hardly enough to analyze the language much further.

Another 20 years would pass before the next linguistic research of Arizona Tewa would be undertaken when Paul Kroskrity, also a doctoral student from Indiana University, would begin his work on First Mesa. Kroskrity has subsequently become the most prolific writer on Arizona Tewa in terms of number of publications and has brought the language and community into the limelight among certain anthropologists and linguists. Indeed, this review of literature on Arizona Tewa effectively ends with Kroskrity as well since at the time of this writing no other linguist to my knowledge has published any original work on Arizona Tewa. This may just as well be due to prevailing political ideologies among the Pueblos through the 1980s and 1990s that restricted linguistic and anthropological work (and ideologies among many linguists that deemphasized work with minority languages). While Kroskrity’s work is quite outstanding, a couple of caveats will become quickly apparent. Firstly, a perusal of the bibliography of Kroskrity’s work on Tewa will reveal that several of his articles are actually republications of some of his earlier articles (with or without significant revision)

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44 By original, I mean based on their own fieldwork or large-scale reanalysis based on previous researchers’ work. There are of course numerous authors who cite (mainly Kroskrity’s) data and analyses of Arizona Tewa in their research.
and thus the number of original publications is actually less than appears at first blush. Second, Kroskrity’s interests diverge from many of the other linguistic publications on Kiowa-Tanoan seen in this literature review. His focus is particularly on language ideologies—a field of study he has had a strong hand in establishing—and on the sociocultural context of language use, including genre effects and the effects this context has on language structure. Because of this, his contributions to our knowledge of Arizona Tewa phonology and morphosyntax, while not insubstantial, is not particularly great either. On the other hand, he has made Arizona Tewa the best described Kiowa-Tanoan language in terms of grounding it within the very specific linguistic community in which it is spoken and correlating language structure and function with the (perceived) cultural values and ideologies of the language’s speakers.

Kroskrity’s first publication on Arizona Tewa is his doctoral dissertation (Kroskrity 1977), which established many of the topics he would address in most of his subsequent publications. The first half of this dissertation describes a number of formal constructions of Tewa grammar, including nominal conjunction, relative clauses, and the passive/inverse construction. The second half of the work has a more socio-cultural bent, covering Spanish loanwords, sociolinguistic variation, and an ethnohistorical review of an Arizona Tewa song genre. While he does not give a comprehensive sketch of the morphosyntax, and gives even less on phonology, those constructions he does present are analyzed very thoroughly and with much attention given to the effects of sociocultural variation. In the next decade and a half Kroskrity published numerous articles on Arizona Tewa.

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45 This is not to overly criticize Kroskrity, the conventions of maintaining an academic career in the late 20th century and early 21st century being what they are.
Tewa, many representing and expanding on topics he addressed in his dissertations, others presenting new subject matters.

Kroskrity (1978a) discusses the multiple grammatical functions that involve a suffix of the form -dí, which indicates the agent of a passive/inverse construction, the instrumental, the comitative, and certain types of subordinate clauses. Kroskrity comes to the conclusion that these functions are polysemously related rather than there being multiple suffixes that happen to be homophonous. Kroskrity (1978b)—republished with the same title and little revision as Kroskrity (1993a)—is an article that repeats and synthesizes several of the data points presented in his dissertation. He examines age-graded variation in four constructions: nominal coordination, animacy of arguments in passive constructions, heads of relative clauses that take “non-active” pronominal proclitics, and position of the head within a relative clause that takes an “active” pronominal. Despite an aversion in Tewa to lexical borrowings from other languages, Kroskrity argues that the variation he finds points to assimilation in younger speakers among native grammatical constructions to patterns seen in English. He follows this the same year with Kroskrity (1978c), another article based on a dissertation chapter. This publication points out the very restricted set of loanwords from Spanish in Arizona Tewa as compared to Rio Grande Tewa. In particular he is concerned with the sociocultural and historical reasons for the differing extent of loanwords in the two Tewa varieties. He follows up the topics of Kroskrity (1978b) and (1978c) in Kroskrity (1980), which is republished under the same title and with the same content in Kroskrity (1982).

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46 This list gets shorter from Kroskrity’s dissertation to this article and from this article to later publications as Kroskrity determines some items to be indigenous lexemes that only happen to look a little like the Spanish equivalents. Shortening the list of loanwords actually only supports Kroskrity’s analysis.
The bulk of this article addresses contact between Arizona Tewa and other languages, repeating the argument concerning coordinate NPs and animacy in passive/inverse constructions from the (1978b) article and the data on Spanish loanwords from the (1978c) article. He adds to these points discussion of more tentative potential influence from both Hopi and Apachean languages. As in his previous writings, Kroskrity casts these data in the light of Arizona Tewa language usage, taking into account their multilingualism, an ideology of linguistic conservatism which has led them to limit and control the amount of lexical integration even though foreign grammatical patterns may slip in under the radar.

Kroskrity’s publications on Arizona Tewa through the 1980s tended to place more emphasis on grammatical constructions, although they are still grounded in his trademark arguments based on sociocultural context. Kroskrity (1984) discusses the morphological similarity of subordination constructions and negation constructions, an association only otherwise found in the Tiwa branch of the family. Considering similar relationships in cross-linguistic data and discourse pragmatics, Kroskrity develops a scenario by which the negative construction may have been innovated from a subordinate clause construction. Kroskrity (1985a) is the first extensive description and discussion of the Arizona Tewa “passive” (or of the similar Rio Grande Tewa passive, for that matter) to appear in the literature, greatly expanding on what little he’d introduced in his dissertation and subsequent publications. In this context he gives a clear table of most or

47 Except for the reinterpretation of native kinship terminology to reflect Hopi social patterns already pointed out in Dozier’s work, most of Kroskrity’s arguments regarding Hopi and Apachean influence appear not to hold up.
48 This construction is variably called “passive” or “inverse” in the literature, with some argumentation regarding which term to use. See chapter 0 of this dissertation for my take on the issue.
all of the pronominal proclitics of the language and compares the construction to its correlate in other Kiowa-Tanoan languages and in neighboring Athabaskan languages. Kroskrity is especially concerned with the semantic and pragmatic motivations for the voice system and lays them out very clearly. Kroskrity (1985c) is a brief note that suggests the Tewa possessive construction involving a suffix on the possessor may have formed under the influence of Athabaskan languages, the suffix itself being a borrowing. It is a compelling hypothesis and Kroskrity does mention it again in subsequent publications although further analysis is needed to dispel the possibility of language-internal development.

In the 1990s much of Kroskrity’s work was looking at genre and Arizona Tewa language performance. The first such publication was actually Kroskrity (1985b). This article examines the use of evidential particles, clause conjoiners, and pauses in the structure of a Tewa text. This piece actually contains little analytic discussion compared to many of his other works, but most significantly contains a full 60 line Tewa text with a line-by-line free English translation. Kroskrity (1992a) also contains three very short texts (with interlinear morphemic translation). This article describes some fascinating cases where a recognizable Arizona Tewa speech genre, public announcement, is utilized for non-canonical purposes, considering both the form of the texts and community members’ reactions to them within the frame of indigenous language ideologies. Kroskrity (1992b), which is republished as Kroskrity (1998b), addresses the language ideologies surrounding another linguistic genre recognized within the Arizona Tewa community: kiva speech. Although no example of kiva speech is given, a fact anyone familiar with Puebloan culture will not be surprised by, Kroskrity discusses how
pervasive and influential this body of speech forms is within the community and how the
Tewa language is used as an index of Tewa identity, illustrating with examples discussed
in his previous publications. Finally, Kroskrity (1998a) is an expansion on a topic the
author points out in earlier work, particularly in his (1985b) article and his (1993) book:
the distribution of the evidential particle \textit{ba /\textipa{b}a/} in narratives. Comparing it to the
identical cognate Rio Grande Tewa form and the Hopi evidential \textit{yaw}, Kroskrity
discusses how the indigenous Tewa form has come to have a formal syntactic pattern and
indexical function equivalent to its Hopi counterpart. This demonstrates how the Tewa
language has been affected by language contact despite an aversion to borrowing lexical
forms.

Amidst these article-length publications of the 1990s, Kroskrity also released a
book that encapsulates much of his Arizona Tewa research up to the time of its
publication (Kroskrity 1993b). The book could be seen as a publication of his 1977
dissertation, much of the prose indeed carrying over. It is however radically revised in
some areas to incorporate material from his other publications of the 1980s and early 90s.
This includes his discussion of influence from language contact described in Kroskrity
fuller discussion, especially on the distribution of the evidential as he would later publish
in Kroskrity (1998a), and the reflection of ethnic identity and indexicality that has
appeared throughout most of his publications. The book provides an excellent synthesis
of these various data points, providing a detailed linguistic ethnography of the Arizona
Tewa. The book also includes an appendix with over 200 lexical items comparing
Arizona Tewa forms with their Rio Grande Tewa counterparts (usually cognates). It
should be considered a must-read for students of the Pueblos and of Kiowa-Tanoan in particular.

From the early 1990s on, Kroskrity has made a name for himself in linguistic anthropology for his promotion of the study of language ideology. His Arizona Tewa articles of the 21st century have so far been a return to some of the topics of his earlier papers with this new focus in mind even more than it already was at the time of the original publications. Kroskrity (2000b), which is briefly reviewed in Kroskrity (2000a) in the light of the theme of the volume in which it appears, is a general consideration of language ideologies among the Arizona Tewa and is partly a distillation of many points he has presented previously. Most interestingly it considers the ideologies demonstrated by Edward Dozier in his ethnographic work among the Arizona Tewa in the 1950s. Kroskrity (2009) returns to the topic of the ideologies surrounding storytelling developed in his earlier (1985b, 1992a, 1992b/1998b, 1993b) works. In this article he breaks down the ideologies surrounding a good performance and the place of storytelling within the Tewa worldview, among other theoretical concerns. This publication actually contains very little Arizona Tewa data in what appears to be a reflection of changing ideologies surrounding publication of language material. Kroskrity (2010a) is the publication of a manuscript (Kroskrity 1990) that the author has had in development for many years and is effectively a revised version of Kroskrity (1985a). It compares and contrasts the active, passive, and inverse voice constructions in both form and function and discusses speakers’ use of and conscious awareness (or lack thereof) of the inverse voice construction. Kroskrity (2010b) is a slightly revised version of Kroskrity (1984), examining the relationship between negation and subordination in Arizona Tewa. This
differs from the earlier publication only in bringing out the role of language ideology and discursive pragmatics a little more.

Kroskrity is still producing articles on Arizona Tewa, largely based on his fieldwork in the late 1970s. However, comments in recent publications suggest that while he has some involvement in current language projects within the Pueblo, only a small portion of that work is likely to be publicly available given current Pueblo trends in restricting academic publications. Kroskrity can be credited with improving the state of our understanding of Arizona Tewa language usage, even if his focus is not on language structure and many areas of phonology and morphosyntax remain under-described.

Perhaps one of the more frustrating aspects of Kroskrity’s publications, however, is the inconsistency in his transcriptions. The same examples can be found across multiple publications, but with each instance having some difference in tone marking, vowel nasalization, and vowel length. This does not appear to be the product of revised analysis. Indeed, his most recent article (Kroskrity 2010) fails to mark any phonemically nasal vowels at all, although this instance may derive from community-based orthographic innovations. While these inconsistencies do not affect Kroskrity’s main points in his writings, they are an annoyance for a comparative endeavor such as the present. Nonetheless, a careful analysis of the data across his writings can circumvent this relatively minor issue. It may be further hoped that the 21st century sees more work in documentation and revitalization on the distinctive Arizona Tewa language.

One of the biggest gaps in data on Arizona Tewa is the availability of texts, whether transcribed or as an audio recording. As mentioned above, Kroskrity does provide some short narratives in a few of his publications (Kroskrity 1985b, 1992a,
1993b), with interlinear morphemic translations and free English translations. But, he also published two longer texts with one of his primary consultants, Dewey Healing, as coauthor. Both texts (Kroskrity and Healing 1978, 1980) were released through the *International Journal of American Linguistics* special Native American Texts Series. They are accompanied by an interlinear morphemic translation and a free English translation and are both more substantial than any of the other published texts. They are both of the same folktale genre, however, and thus are limited in their illustration of Arizona Tewa language usage, but given the paucity of data for the language, they are useful for improving understanding of Arizona Tewa grammar.

Despite the relative paucity of linguistic work, there has been a fair amount of ethnographic work—in addition to Dozier’s—on the Arizona Tewa. As with Kiowa and Rio Grande Tewa above, some of these works are sprinkled with Native terms and contain indigenous stories given in English, on top of the metadata on the community context of language use. Two such works for Arizona Tewa are biographies of outstanding personalities of the 20th century. Yava (1978) and Black (2001) both present a picture of Tewa life in the early and mid-1900s as the Arizona Tewas were continuing to negotiate their coexistence with the Hopi on First Mesa (in which language has always played a major role) while also increasingly having dealings with Anglo-American society. As well as the interesting descriptions of Tewa life and a small smattering of Tewa names and terms, both contain some short stories given in English. Yava (1978) includes two short tales in an appendix as well as a couple of songs. Black (2001) gives six folk tales: two Hopi, and four Tewa. While it would of course have been ideal to see
the Tewa versions of all these stories alongside the English translation, they do at least hint at indigenous narrative styles.

### 3.4 Taos Northern Tiwa

With its scenic location and its beautiful, continuously inhabited and maintained multi-story adobe structures, Taos Pueblo has long held the fascination of both anthropologists and non-academics. Thus, despite the renowned conservativeness of the Pueblo community and their official stance of keeping most researchers out of their affairs, a lot of work has been done on the Taos Northern Tiwa language, although the majority of it remains unpublished. Indeed a researcher has to dig into archival material to find the best and clearest information on the language, which probably explains why it is so little cited in the broader linguistics literature.

The earliest documentation of Taos Northern Tiwa appears to be a list of 32 words collected by Colonel James H. Simpson during his 1849 expedition into the Southwest (see section 3.2 above). A copy of this short list exists as NAA manuscript 1024b (Simpson 1896b). The data are also copied into NAA manuscript 1027 (Gibbs 1868-1869) alongside copies of two lists of Isleta Southern Tiwa data (see 3.6 below). Although Simpson’s list does not specify where or from whom he collected the data—he only states that the language in the list is that of Taos, Picuris, Sandia, and Isleta—the word forms clearly suggest that they were elicited from a Taos Tiwa speaker, based on the vowel qualities and the nominal suffixes. Like Simpson’s short list of Tewa, it is neither terrible nor outstanding and its limited scope provides little that is not better captured in subsequent material.
The next documentation of Taos Tiwa occurred but a few years later and appears not to have been done at Taos at all, but rather at Ysleta del Sur. During his 1852 expedition, John R. Bartlett recorded Tiwa words alongside the Piro that he documented in the El Paso area. His Tiwa consultant was the “head chief” of Senecú and “Isleta [del Sur]”, but was apparently from Taos and indeed the vocabulary that Bartlett recorded does definitely appear to be Northern Tiwa rather than the Southern Tiwa of Ysleta del Sur. This list of 200 words can be found in NAA manuscript 1627 (Bartlett 1861) and is copied in manuscripts 458a and 458c. As with the Piro word list it appears alongside (see section 3.8), these copies contain fewer items than the original list. In quality these wordlists are comparable to Bartlett’s other transcriptions. Unlike the Piro, he does not accompany the Tiwa list with any notes pertaining to language usage or grammar.

After a lull of over 30 years through the Civil War period, documentation of Taos Tiwa was picked up again in the mid-1880s and the next three documenters would substantially expand on both the lexicon and the grammar of the language. Indeed, for a time in the late 19th and early 20th century, Taos Northern Tiwa was the best documented of the Kiowa-Tanoan languages. This begins with Harry S. Budd who recorded a relatively large collection of words and phrases in Tiwa in 1885 and 1886. NAA manuscript 1023 (Budd 1886) consists of a letter from Budd to Albert S. Gatschet of the Bureau of American Ethnology plus a list of Taos Tiwa numerals from 1 to 23 and tens from 30 to 100 copied by Gatschet. Budd’s letter includes translations of two phrases in Taos Tiwa, alongside parallel translations into Picuris Northern Tiwa and Isleta Southern.

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49 If one takes into account all of the available archival material to be described in this section, both written and audio, Taos Northern Tiwa may still be the best documented of the languages in many ways, lacking only in the analysis of this available material.
Tiwa, and a comparison of numerals 1 to 10 in these three Tiwa varieties and in San Juan Tewa. Hewitt (1896), archived as NAA manuscript 3125, copies the comparative list of numerals, but adds nothing to an analysis of the data. Budd’s letter otherwise gives more attention to Rio Grande Tewa, with which Budd had only recently begun becoming acquainted. Budd’s real contribution, however, appears in NAA manuscript 1028 (Budd 1885-1886), which is actually a copy made by Albert S. Gatschet from an original list by Budd which was bequeathed to ethnologist Frank Cushing. This manuscript, written into one of the BAE’s 100-page elicitation schedules, consists of 476 words, phrases, and short sentences of Taos Northern Tiwa. The transcription is of high quality for the time, including clear marking for ejective—although not aspirated—consonants and for sounds that do not occur in English, such as [ɬ] and [ɨ]. Gatschet also has written in Tiwa forms collected by Dr. H. C. Yarrow during the Wheeler Expedition (see section 3.2), although I have not been able to find Yarrow’s original list within the BAE archives. Such a comparative transcription occasionally proves useful, although in general Budd’s list is the more accurate. While Budd does not include any statements or analysis of the grammar of the language, his work provides a decent foundation for the research that followed it up.

Twenty years after Budd, the Taos language received its next major researcher in the person of Matilda Coxe Stevenson. Stevenson’s work is remarkable not only in the fact that she was one of the first women employed as an ethnographer in the U.S., but also for its precision, quality, and attention to detail. While none of her numerous published works is given over to any of the Kiowa-Tanoan cultures or languages, she collected a large amount of data on Taos and Taos Northern Tiwa late in her life.
Stevenson (n.d.), archived as NAA manuscript 4726, is a vocabulary of Tiwa much like Budd’s, recorded in one of the 100-page BAE schedules. It is much more extensive than Budd’s, particularly in multi-word phrases and sentences, including possessive constructions. Indeed, the two documents could be said to complement each other well. On top of this vocabulary, NAA manuscript 2087 (Stevenson 1906) is a 90-page handwritten notebook plus over 60 loose pages of typed notes on Tiwa vocabulary and grammatical constructions. These notes include numerous verbal paradigms distinguishing arguments and TAM as well as large lists of vocabulary constituting the earliest attempt to understand the morphosyntax of the language. Stevenson’s transcriptions are far from perfect—after all, she was a cultural ethnographer, not a linguist—but this is made up by the amount of grammatical notes that she took. Subsequent research would greatly improve upon her work, but this early effort must be recognized and may yet prove valuable under further study.

Finally, Stevenson (1906/1910) gathers together all of her ethnographic notes on Taos as NAA manuscript 4842. This collection consists of over 500 pages and index cards covering a large range of topics. While not focused on language, these notes are sprinkled with numerous vocabulary items usually presented within the frame of their cultural usage. Stevenson passed away before she could publish any of her Taos material, but her legacy of study on the language and culture of the Pueblo is very rich, even though the only person yet to have made serious use of her notes seems to be the next researcher to come to Taos, John Peabody Harrington.

Harrington began working with Taos Tiwa in his first years in New Mexico and, while he only produced a couple of publications on the language, the extent of his notes
suggest that he took a particular interest in Taos, or at least had a productive research situation. One of his—or anyone else’s—earliest publications on a Kiowa-Tanoan language was a fairly detailed grammatical description of Taos Tiwa (Harrington 1910a). Indeed, it is one of his only publications that present a detailed grammatical analysis for any of the languages in the family and, despite being early in his career working on Kiowa-Tanoan, it is fairly accurate. The article covers the basic phonology and morphology of the language, including some comparison with Rio Grande Tewa. It lists many of the postpositions and independent particles—usually ignored by later researchers on the language—as well as some of the verbal suffixes. It also gives a short example of traditional narrative text, which includes a word-for-word translation (but no free translation) and a following morphological analysis. The one major oversight in the article is that it does not attempt to give a comprehensive overview of the extensive paradigm of pronominal proclitics. He does describe the different series of proclitics, but he only gives a few as example. This situation is corrected in his only other publication dedicated to Taos Tiwa, an article about the “personal pronouns” of the language (Harrington 1916b). The latter article presents a full paradigm for each of the series of proclitics as well as giving an alphabetic listing of 75 attested proclitics and giving some amount of internal analysis of the forms. He also lists the independent pronouns with suffixes they may take and gives some description of their distribution. It is unfortunate that the article appears in a much more obscure volume than his earlier grammatical sketch. It is little cited, but is better organized, more comprehensive, and clearer than Trager’s (1946, 1954) later presentation of the pronominal proclitics despite the latter’s generally improved analysis of the language over Harrington’s.
Harrington would publish no other works dedicated to Taos Northern Tiwa. He does however give a number of Tiwa forms in *The Ethnogeography of the Tewa Indians*. In particular he lists a number of place names for comparison with the Tewa labels for various locales in northern New Mexico. Often such place names are accompanied by a morphological break-down as well. As the work is about the Rio Grande Tewa, though, it presents little linguistic detail towards a similar ethnography of Taos. Harrington does also give the occasional Taos form in his other publications on Kiowa-Tanoan, but these are few and far between.

It is in the microfilm of his field notes that Harrington truly has something to contribute to the study of Taos Tiwa. A full twelve out of the 25 reels on Tanoan languages in the Southwest portion of the *Papers of John Peabody Harrington* (Mills 1981) are on Taos: reels 38 through 49. These twelve reels are comprised of just over 9,000 microfilm images, making up more than half the 17,850 frames on Tanoan. Since he did not publish much on Taos, these twelve reels constitute a goldmine for anyone interested in Taos Tiwa, unlike the case of Tewa and Kiowa where his extensive notes were largely organized into extensive publications. The collection includes thousands of index cards from a slip file lexicon, grammatical notes, manuscripts prepared by both John P. Harrington and his wife Carobeth Tucker Harrington towards a Taos grammar and a dictionary, and many ethnographic notes, including work towards a publication of Matilda Coxe Stevenson’s documentation described above. The following paragraphs will give a breakdown of the notes by reel.

Reel 38 consists of about 820 frames, including over 1,000 lexical index cards divided by semantic domain, including place names, tribal names, kinship terms, flora
and fauna, material culture, natural phenomena, celestial and mineral terms, phonetic notes, and miscellaneous vocabulary and sentences. It also includes over 400 more pages, with another 700 notecards, on miscellaneous topics of grammar and vocabulary and includes comparative notes on Isleta.

Reel 39 contains over 600 microfilm images and includes about 120 pages of notes (averaging two pages per frame) on Taos terms for use in Harrington’s paper on Piro, another 120 pages of notes on tribe names, and about 350 notecards and some loose papers on ethnographic and lexical topics. The remainder of the reel begins his extensive grammatical and semantic slip file, with the approximately 2,600 notecards divided by grammatical topic. The slip file continues throughout reels 40 and 41. Reel 40, with about 428 images, contains another 2,600 notecards, mainly concerned with verbal and nominal forms. Reel 41 consists of almost 900 frames which contain about 5,200 notecards, some typed and some handwritten.

Reel 42 consists of a mix of manuscripts and notes and is over 1,000 frames long. It opens with approximately 120 pages and almost 1,100 notecards on grammatical points, including paradigms of the pronominal proclitics. This is followed by various manuscripts, beginning with a typed draft of Harrington (1916b), a 142-page typed draft of a proposed grammar of Taos Tiwa, and 194 pages that include a draft of a proposed article on Tiwa numerals along with accompanying handwritten notes that seem to extend into other grammatical topics. The remainder of the reel contains a grammatical description of Taos Tiwa written by Carobeth Tucker Harrington and accompanying notes. The grammar manuscript is divided into two sections: part one is 192 pages on phonology, compounding, nouns, and pronouns, while part 2 is about 330 pages on verbs,
postpositions, adjectives, and other categories. These sections are followed by 120 pages of typed and handwritten notes for the manuscript and almost 500 pages giving an alphabetic list of verbs in the language.

Reels 43 through 47 contain a manuscript dictionary of Taos, including both a Taos-English and an English-Taos section. Reel 43 consists of the first part of the Taos-English dictionary, consisting of about 1,800 pages. Each page has only a single Taos lexical entry with translation, although many entries also include related forms. Reel 44 gives another 1,700 pages of the dictionary in a similar format. Reel 45 finishes out the Taos-English dictionary with another 1,180 pages and begins the English-Taos dictionary with almost 550 pages. Like the Taos-English side, each page lists only a single entry. Unlike the Taos-English dictionary, which is largely handwritten, the English-Taos dictionary is a mix of type and handwriting. Reel 46 presents another 1,580 pages of this dictionary and reel 47 finishes it out with another 1,090 pages. These latter pages include a list of Taos Tiwa postpositions. Reel 47 also contains about 100 pages on birds and plants.

Reel 48 is the last major linguistic reel on Taos Northern Tiwa and is comprised of about 680 microfilm images. It includes about 650 pages of handwritten linguistic notes on grammar, vocabulary, and texts and almost 200 pages of notes on kinship terms. These latter were written years after Harrington’s own fieldwork since they reference Parsons (1936) and Trager (1943). Finally, the rest of the reel contains 524 pages of typed ethnographic and historical notes towards an edited copy of Matilda Coxe Stevenson’s Taos notes which Harrington was apparently looking to publish.
Reel 49 contains a mix of notes and manuscripts, mainly with more of an ethnographic focus than a linguistic bent. It gives another 268 pages of notes towards the publication of Stevenson’s ethnography of Taos. It also includes a few pages of Stevenson’s notes on Picuris and some notes by her husband, James Stevenson as well as almost 300 pages of other notes on ethnographic and historical topics, including about 40 pages on dances. There are also 88 pages that include a typed manuscript by James Stevenson, describing Taos Pueblo in 1880 along with notes by Harrington on Taos Tiwa place names, tribe names, and cosmogony. This is followed by a 40 page manuscript of clan names as given by one Tony Romero. Lastly, there are about 40 pages of linguistic notes on the text that is published in Harrington (1910a).

A serious consideration of the above notes with respect to the other literature reviewed in this section will reveal just what a valuable untapped resource they are. Both the manuscript by C. T. Harrington and the dictionary and slip file of J. P. Harrington in particular would prove useful towards modern versions of both a grammar and a dictionary. While later researchers may have had a better understanding of the language thanks to advancements in linguistics, Harrington was an outstanding linguist of his day and had an excellent phonetic ear, so the forms he gives tend to be fairly accurate. The most notable absence in this collection of field notes is any corpus of texts of any genre. Fortunately this gap is filled in by later linguists.

It would only be a couple of decades after Harrington before the next major linguist would come along and give serious attention to Taos Northern Tiwa. In the interim period of the 1920s and 1930s, there was the same intermediate work done as with the other Kiowa-Tanoan languages. A small and little promoted body of
documentation on Taos Tiwa was undertaken in the 1920s by linguist and writer Jaime de Angulo. Between two trips to Taos in 1924 and 1930, Angulo recorded a half a dozen texts, vocabulary, and analyzed the grammar of Taos enough to develop a sketch of morphology and semantics. Based on this fieldwork, Angulo published a single bare blip of an article in *American Anthropologist*. Angulo (1925) is a short list of kinship terminology with no commentary or discussion and only a short phonetic key to the vowels. The consonant transcription is poor for the era, missing ejectives and aspirated stops, but there is little more to say on the short note.

Aside from this one blurb, Angulo’s notes only exist as archival material at the American Philosophical Society library. These materials consist of the above mentioned sketch (Angulo 1924-1930), which addresses morphology and semasiology and includes three letters from literate native Taos speakers, each of which contains both an interlinear and free translation. Angulo and Freeland (n.d.) is a set of six texts and four letters with free and literal translation and grammatical notes. Unfortunately I learned of this archival material too late to seek to access it before writing this dissertation. Details of Angulo’s visits to Taos, including some of his correspondences while working on the language—albeit no Taos Tiwa language data itself—can be found in Angulo (1985), a compilation edited by his daughter.

In late 1929 Alexander Lesser collected 27 pages of notes in a pocket notebook on Taos Tiwa when he went through the Southwest gathering kinship terminology (Lesser 1929b). As with the other languages, he recorded kinship terms with first, second, and third person singular possessive pronominals and includes some ethnographic
information on usage of the terms. Also as with his notes on the other Kiowa-Tanoan languages, he never published the data.

Elsie Clews Parsons was one of the next to do research at Taos. That Pueblo appears to have been one of the last in which she did ethnographic work. This research is largely published in Parsons (1936), an ethnography of her usual formula, which includes sporadic terms in the native language. Apparently her informant was a relatively marginal member of Taos society and many Taos people have criticized Parsons’ ethnography for being inaccurate. She also apparently made herself persona non grata at the Pueblo in the course of her work, although I do not know the specifics of her infractions. In any case Parsons did follow up her ethnography with a collection of Taos stories written in English (Parsons 1940). While not as extensive as her collection of Tewa stories (Parsons 1926a), this volume does also include two stories given in Taos Tiwa with interlinear morphemic translation and free translation. These stories are thanks to linguist George L. Trager (Trager 1940), whose work will be described momentarily. Parsons also had Trager provide improved transcriptions of the Tiwa terms she includes throughout the main collection of Taos stories. Due to this assistance, Parsons (1940) is linguistically the most accurate and richest of Parsons’ publications on Kiowa-Tanoan communities.

Contemporary with Elsie Clews Parsons’ last decade of research among the Pueblos, linguist George L. Trager came onto the scene and began fieldwork with Taos Northern Tiwa in 1935. He would work continuously on the language for almost 40 years, although his fieldwork was intermittent through the decades. Indeed, for those who have a passing familiarity with the Kiowa-Tanoan literature, one thinks of Trager when one thinks of research on Taos Tiwa. As Parsons’ exile from the Pueblo in this period
will reflect—or perhaps it is indeed due to some offense she caused—Trager was not able to do his research overtly at Taos Pueblo itself. Instead he worked anonymously with up to three consultants in Taos Village or other locations away from the community. Such a tactic obviously raises ethical questions on his research with respect to fieldwork and native ideologies, but also questions of control of cultural information at the individual level, i.e. whether the individual consultants had the right to dispense information about their own native language and culture contra the official policy of their community. Such questions must be addressed elsewhere. In any case Trager would go on to publish a number of articles on the language, although the greater wealth of information would remain in his archived unpublished notes and papers. Because of advancements in the field of linguistics and increased understanding of different linguistic structures, Trager’s representation of data tends to be more accurate and concisely expressed than that of Harrington and other previous researchers. However, in many other ways, the analyses presented by Trager in his publications are also often quite the products of their time, meaning they are not always relevant to the modern linguist looking to understand the language under modern analyses. This may be one reason that data from Taos Tiwa are rarely cited in the linguistics literature.

The first of Trager’s articles appeared within a year of having begun his fieldwork, with a statement of the language’s sound inventory. Trager (1936) briefly presents the phonemes of the language, along with commentary on their phonetic realizations, and illustrates the sounds with a sample text. The text, a translation of Aesop’s fable *The North Wind and the Sun*, is given in both a narrow phonetic and a broad phonemic transcription, the latter accompanied by a word-for-word translation. The
article is short, barely over two pages long, and is published in *Le Maître Phonetique*, an international phonetics journal that prints articles in the alphabet of the International Phonetics Association. In other words, both the Tiwa examples and the English prose of the article are written in phonetic script rendering it inaccessible to any but linguists.

Trager’s next article is largely also on phonology. Trager (1939) appears as a blurb in the journal *Language* and gives the Taos Tiwa names for the days of the week, which are borrowed from Spanish and heavily adapted to fit native Tiwa phonology. The article thus comments on the sound changes that the words have undergone to match Tiwa phonological structure.

Following the texts of Trager (1940), which appeared as an appendix to Parsons (1940) described above, and a couple of comparative-historical articles on the Tiwa languages (see section 3.9 below), Trager (1944) is another article that examines loanwords in the language. He lists all of the attested loanwords from Spanish and English (with both their singular and non-singular form and Tiwa noun class information), presenting them in the rough chronological order in which he thinks they entered Tiwa. Following this listing, he analyzes the regular and irregular sound changes that have taken place to adapt these words to native Tiwa phonology and appends an alphabetized list of the loans at the end.

Trager finally attacks more than just phonology and loanwords and gives a grammatical sketch of the language in Trager (1946). At just under 40 pages, this article appears in a volume alongside sketches of a half dozen other North American languages. The first two-fifths of the article details the phonology, including the sound inventory, phonotactics, and morphophonology, that obviously being Trager’s strongest area. The
next third of the sketch describes the morphology, surveying the allomorphy of the number-noun class suffixes, the pronominal possessor construction, verbal indexation—being a little less comprehensive than Harrington (1916b)—verbal TAM suffixes, and a brief perusal of other inflectional and derivational morphology. In the last few pages he gives short shrift to syntax, a list of vocabulary divided by semantic domains, and brief comments on sound changes from Proto-Tiwa. As his first published sketch of the language’s grammar, this article is not bad for its time. It gives next to no example sentences longer than a single word and is too short in its attention to the ever important verbal morphology. Unfortunately, however, this article is the climax of Trager’s publications on Tiwa, his subsequent articles presenting little new descriptive data.

Following some new fieldwork in 1947, Trager wrote a non-linguistic paper on hairstyle and status at Taos (Trager 1948a) and decided to begin reanalyzing Taos Tiwa structure in a series of articles (which are called “Taos I”, “Taos II”, etc.). Trager (1948b) is a restatement of the phonemic inventory and phonotactics of the language. The primary difference from his earlier statements is to reanalyze complex consonants (ejectives, aspirated stops, and labiovelar stops) as consonant clusters and diphthongs as vowel clusters. The article includes no Tiwa examples.

Trager (1954) is his follow-up in this article series, in which he reanalyzes the pronominal proclitics. He lists the forms of the transitive and intransitive-dative (possessive) paradigms and attempts to break them down into constituent morphemes.

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50 Trager comments in the article that he had considered such a cluster analysis earlier, but had gone with the complex consonant phonemes because of “a prevailing theoretical trend among Americanists at the time” (p. 158). Of course Trager’s (1948b) reanalysis was itself part of a trend of the mid-20th century and fashions would again return to the complex consonant analysis by the time this dissertation was written. So it goes.
under a synchronic analysis. As will be observed in Part III, the pronominal proclitics of all the Kiowa-Tanoan languages are hard pressed to be internally analyzed in any regular manner without a comparative-historical perspective. Trager’s breakdown is thus only so successful in providing a useful perspective on these morphological forms. Like the previous article, this too has no Tiwa examples beyond the proclitics themselves.

Trager (1960a) is his third article in this series, but is divergent insofar as it tackles an entirely new topic not touched upon in his 1946 sketch. Following some fieldwork in 1959, Trager attempts to analyze Tiwa “paralanguage”, that is, prosody and meaningful prosodic modulation. Using idiosyncratic symbols, he attempts to describe the prosodic features in a short five-sentence paragraph and describe the motivations for these features. It is hardly his clearest article and comes to little of any kind of conclusion on the topic. However, it does serve to point out an area of Tiwa and Native American linguistics that had not been adequately addressed at that point (and still hasn’t been).

The same year as the above (and in the next issue of the same journal), Trager published a brief blurb criticizing Jones’ (1960) article tracing the origin of the name Taos, which appears in the same issue. William Jones begins his short article by criticizing an earlier proposal (by Grant 192551) that the name has some origin in the Chinese concept of tao. While at first a fairly objective piece, Jones goes on to propose an equally fanciful hypothesis that the name is derived from the Spanish pronunciation and spelling, tao, of the Greek letter tau, which is the label given to the T-shaped Cross of St. John raised at San Juan Pueblo by members of the Oñate expedition. Jones even cites the roughly similar Kiowa word for “cross” given in Harrington (1928) as evidence

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51 This is a non-academic popular publication about Taos Pueblo and its inhabitants.
of this development, suggesting the Kiowa borrowed the word from Spanish. Trager (1960) dismisses such a scenario, pointing out the terms actually used by Tiwa speakers for referring to themselves and their Pueblo, that the Kiowa term mentioned is not a borrowing (and isn’t actually phonetically all that similar), and that the name “Taos” is probably just based in some Spanish pronunciation of the Tiwa root ṭɔ- (t̪iɔ̄-), meaning village.

Trager (1961) is the fourth and final article in the above mentioned series of reanalysis. It presents a semological analysis of Tiwa noun classes and pronominal reference and is the most obtuse of Trager’s writings on Taos Northern Tiwa. Using a set of mathematical notations and an unhelpful diagram, Trager tries to present a cohesive analysis of noun class and verbal indexation that takes into account the morphological, syntactic, and semantic components. He also tries to present a system of number construal to explain the noun classification in the language, although it does not prove particularly useful in predicting or explaining the noun classes and is unfortunately post-hoc in nature. The article does at least provide a few samples of Tiwa language, but it is doubtful that the analysis presented in the article would prove useful to any modern linguist with an interest in the language.

Trager’s last publication on Taos is coauthored with his second wife, Felicia Harben Trager, as Trager and Harben Trager (1970). The article addresses the set of terms for cardinal directions in both Taos Tiwa and Picuris Tiwa. While the stated thesis is to establish whether cardinal directions form a semological domain in these cultures, it is ultimately just a description of the system of terms and their meanings. As a system it
is quite an interesting and complex semantic domain and the article probably only
scratches the surface, but the authors do a good job with the summary.

George Trager retired soon after this article, although it appears that he worked
with one of his regular Taos consultants as late as 1972. More articles by him will be
touched upon in section 3.9, reviewing comparative-historical research. As indicated,
while Trager is known for his work on Taos Tiwa, his publications fail to impress as
linguistic description. But, where his printed articles may not be all that impressive, his
field notes on Taos contain quite a wealth of information. The Papers of George L.
Trager (Trager 1935-1972) are archived at The University of California-Irvine Langson
Library Special Collections and Archives and contain all of Trager’s notes and
manuscripts on Taos, his written notes on the other Tiwa languages, and his collaboration
with Benjamin Whorf on Azteco-Tanoan (see 3.9 below). Even a cursory glance at the
contents will reveal that he published only a fraction of all that he collected on Taos
Northern Tiwa. While the number of pages may not be as impressive and intimidating as
Harrington’s notes, the quality is just as good and better and the quantity of data
ultimately comparable. Because Trager’s notes are kept in boxes with only small regard
to the actual content of the data contained therein, I will present the material in an order I
feel reflects the content in a more organized fashion for the potential user. Trager’s
written notes on Taos Northern Tiwa include over 6,200 vocabulary index cards, about
380 loose sheets of paper packed with notes, and nine notebooks constituting 544 pages
of notes.

The main body of the index cards is divided between two slip file lexicons.
Approximately 3,500 cards make up the Taos-English lexicon organized alphabetically
by the Tiwa word. The English-Taos lexicon consists of a little over 2,100 index cards organized alphabetically by the main English translation of Tiwa lexical items. Many of the cards are entirely identical between the two lexicons, the English-Taos lexicon differing only in the order of presentation and not in the layout of the individual notecards. There is a set of 291 notecards that seem to duplicate the letters X-Y of the Taos-English lexicon, although it appears that some of these cards do differ from those in the primary set. In addition to these alphabetized lexical slip files, there is a set of 24 cards on direction terms, 10 cards with miscellaneous notes on vocabulary, and another 250 cards showing morphologically complex forms spread amongst the other notes. Note also that at some point somebody photocopied the Taos-English lexicon, six notecards to a page, which is also archived with the collection.

The loose sheets of notes cover a variety of topics and were obviously put together at different times for different purposes. Some of them are elicitation notes or the reorganization of such notes. Others are manuscripts or notes towards the development of manuscripts. The bulk of these notes fall into three roughly coherent packets on vocabulary and grammars. The longest grouping consists of 96 pages on morphology and syntax including 39 pages of miscellaneous vocabulary, 38 pages on paradigms of TAM suffixes and pronominal proclitics, and 17 pages of messy texts with word-for-word interlinear translations and notes to accompany. The second packet is made up of 86 pages of miscellaneous vocabulary (in tight, small print), including a color plate with a numeral index corresponding to the Tiwa color terms. The third of these longer packets consists of pages and notecards towards a manuscript on Tiwa grammar. It includes 21 pages and 40 notecards on noun classes and number marking suffixes and on
pronominal prefixes, with the beginnings of a manuscript, and another 39 notecards on verbal morphology.

The rest of the loose pages are smaller collections. There are two sets, one 9 pages in length, the other 22 pages, that list Trager’s corrections to the Tiwa forms in Parsons’ (1940) collection of texts, plus another four pages of correspondence with Parsons that has Tiwa forms written in the margins. There is a 7-page manuscript from 1948 on “How to Write the Taos Language” which appears to be intended for a non-linguist audience. It includes several Taos words. There are 13 pages of notes on direction terms with some comparative notes on Picuris, probably towards the development of Trager and Harben Trager (1970). The collection also includes six pages of nouns listing singular and non-singular forms, three pages of notes on noun classes, six pages of notes collected in 1971 which includes vocabulary and ethnographic notes that correspond to some of the audio recordings (see below), seven pages of notes on phonology, and 30 pages of ethnographic notes based on some 1966 recordings. There is also a 10-page index of some of Trager’s recordings and of his publications. Finally, there is a 10-page set that includes two texts, one of which is the text from Harrington (1910a), and morphological analysis of the words in these texts. While there is quite the miscellany represented by these loose sheets of notes, they are still rife with Tiwa language forms not all of which are necessarily to be found in the lexical slip file or other sources.

The richest body of notes within the Trager papers consists of the nine elicitation notebooks, which were filled across the span between 1937 and 1962. The pages in these books can be extremely messy and difficult to sort through, but contain numerous texts and sentences beyond what is to be found elsewhere. The first six notebooks are labeled
with Greek letters alpha through zeta and the remaining three are unlabeled. Both notebooks alpha and beta appear to contain only data collected in 1937. Alpha (α) consists of 71 pages of sentence, vocabulary, and paradigm elicitations. Beta (β) has 54 pages that include seven texts with word-for-word interlinear translation and sporadic analytical notes. These texts range from one page to ten pages in length. One appears to be a re-elicitation of the text from Harrington (1910a), but the others all seem to be unique and were never published.

Notebook gamma (γ) contains data attributed to 1937 and to 1959 and consists of 83 pages in total. It too consists entirely of interlinearized texts, all which may have been recorded (or rerecorded\(^{52}\)) in 1959. The eight texts included in this notebook vary from 2 to 16 pages in length with the occasional lexical and grammatical notes on alternating pages. Notebook delta (δ) also begins with material from 1937. The first 7 pages contain morphological forms of nouns and verbs, including locative and interrogative forms and stative verbs. The rest of the 33 pages of the notebook were filled out in 1947, continuing from notebook epsilon (ε). It picks up at line 25 of a text begun in epsilon and goes on for another 5 pages. This is followed by another two-page text. The rest of the notebook is filled with elicitation notes on vocabulary and the singular and non-singular forms of nouns. The 98 pages of notebook epsilon appear to consist entirely of texts and associated notes that are attributed to years 1937 and 1947 as well as some recording event in 1959. Most of these texts appear to be artificially created elicitation narratives, i.e. connected sentence prompts created by Trager and translated by his consultant. There are nine of these texts varying from one to ten pages in length and accompanied by many notes. The

\(^{52}\) It is not yet clear how to interpret the dates given in the notebooks. It may be that Trager transcribed these texts in 1937 but then made an audio recording of a speaker dictating the texts in 1959.
last text fills two pages of this notebook but is picked up in notebook delta and continues for another 5 pages. Notebook zeta (ζ) is the last of the Greek-lettered notebooks and appears to have been entirely filled out in 1947. There are 68 pages made up of eight texts with associated notes. These texts range from 3 to 7 pages in length.

The last three notebooks are not given the Greek letter designations and were all collected in the 1940s, 1950s, and 1960s. Like the preceding notebooks, they mainly consist of texts and associated notes. The first consists of 53 pages and accompanies recordings made in 1948, 1954, 1955, and 1959. There are four texts from one to eight pages in length and one of which is fully morphologically analyzed. There are also several pages of notes on grammar and vocabulary and three pages of ethnographic notes. The second unlabeled notebook includes a set of texts recorded in 1959 and is 77 pages long. There is one text with notes on prosody for Trager (1960a) plus five other texts from 2 to 36 pages in length. The last 61 page notebook was collected in 1962 and consists of three texts plus many ethnographic notes. The three texts are short, from three to six pages in length. There are also 20 pages of what appears to be the English translation of some text from 1963. It is not clear if this translation goes with a text transcribed in Tiwa elsewhere, with a Tiwa audio recording that was never transcribed, or is a text collected only in English. Further analysis of Trager’s notes is required to clear up questions on the organization of these materials.

As is indicated in the description above, the archive of Trager’s Taos notes includes not only written material, but also audio recordings. Indeed there are 116 audio media objects pertaining to Kiowa-Tanoan in the archive: 112 reel-to-reel tapes, one phonorecord, and three audio cassette tapes. The three cassettes are copies of song
recordings and one of the reel-to-reel tapes is an elicitation with a Rio Grande Tewa speaker. Otherwise, however, these recordings consist of over 140 hours of linguistic and ethnographic documentation of Taos Tiwa collected in the late 1950s, 1960s, and early 1970s. Up until recently, access to these recordings was relatively restricted due to the delicate condition and sometimes poor condition of the tapes. Thanks to support from the National Science Foundation and from the American Philosophical Society\textsuperscript{53}, I was able to have all of these recordings digitized and enhanced, improving their quality and accessibility. Given the sheer amount of recordings, I have not yet been able to catalogue in detail their contents. A sparse index of the Trager archives and some sporadic listening on my part suggest that the recordings include running texts, playback and line-by-line re-recordings of texts, vocabulary and sentence elicitation, and ethnographic notes in English. This audio material constitutes what is easily the most valuable part of the Trager collection.

With the numerous publications and the extensive field notes, Trager’s work is extremely useful for understanding the Taos language. His transcriptions are fairly accurate and he is able to provide a morphological inventory for the language. There are some shortcomings in his work, however. His analysis of suprasegmentals in the language is strange, claiming there to be three levels of phonemic tone and three levels of phonemic stress that interact, a system not to be found in any other language in the world, suggesting it is actually erroneous. Because of his influence among other linguists

\textsuperscript{53} I was able to acquire many of the archival resources described in this literature review thanks to a National Science Foundation Doctoral Dissertation Research Improvement Grant (1052650), including the majority of these recordings. The American Philosophical Society also agreed to help fund the digitization of these recordings. Copies of the digital recordings are now available at both The University of California-Irvine, with the rest of the Trager notes, and at the archives of the American Philosophical Society.
working on the Tiwa languages, this analysis of tone and stress also has been passed on to researchers working on Picuris Tiwa and Southern Tiwa. Trager’s understanding of the morphosyntax is also underdeveloped, it seems, but at least he provides enough primary data for subsequent researchers to come to their own conclusions.

Contemporary with and following George Trager, there has been virtually no academic research on Taos Northern Tiwa. Hall (1947) comments on the Tiwa word for “horse”—citing the form given in Trager (1944)—confirming that it probably is a loanword from Spanish based on patterns of words for “horse” across the Americas. Bodine (1968) is a statistical study on naming practices at Taos, surveying the use of native, Spanish, and English names in the Pueblo community. It gives no Taos language data. Beyond such articles, the primary printed language work to follow has been by SIL linguists.

David Hull was a missionary linguist who seems to have begun working at Taos in the 1950s\(^{54}\), although most of his work is from the 1970s. Hull (1973) is an unpublished, but oft-cited, manuscript\(^{55}\) proposing a standardized orthography for writing Taos Tiwa. It is also effectively a phonological analysis. While most of the segmental phonemes are in accord with Trager’s descriptions, Hull differs in how he handles a couple of vowels and in his analysis of suprasegmentals. Rather than adopt Trager’s tone-stress system, Hull proposes a set of three tones comparable to those found in Tewa (and Kiowa and Towa)—high, low, and falling—with stress an independent system. Tone also shows some regular morphophonological alternations across certain constructions. Hull’s

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54 This is probably an error in the records of the Archives of Traditional Music at Indiana University.
55 This manuscript has circulated in a number of ways, I’m sure, but a copy is to be found in the Papers of George L. Trager at UCI.
manuscript is too short to truly revolutionize our understanding of Tiwa tone, but it does at least point in a direction that seems more plausible than Trager’s system. Hull (1950s) is a set of audio recordings eliciting the words he uses as examples in his manuscript. Although not archived and circulated together with the manuscript, it does permit the possibility of checking Hull’s transcriptions with the audio on which it is based.

Unlike the SIL linguists who worked on Tewa and Southern Tiwa, Hull did not produce any academic articles beyond the above manuscript. He did, however, do a lot of Christian translation work with Wycliffe publishing. Wycliffe (1974) is a comic book adaptation of a story about Isaac and young Joseph from the Book of Genesis with the speech and thought bubbles translated into Taos Northern Tiwa. Wycliffe (1976a) consists of a set of excerpts from the Book of Mark and Wycliffe (1976b) from the Book of Luke. The former are grouped thematically as stories of the miracles of Jesus while the latter consists of a group of stories told by Jesus. Wycliffe (1976c) is the entire Book of Mark translated into Taos Northern Tiwa. Like the other Wycliffe productions, all text in these works is in the target language and no English translation or analysis accompanies it. Chapter and verse numbers are given for all but Wycliffe (1974), however, so the non-fluent Tiwa speaker can follow along. These texts make use of some slightly different orthographic conventions than are presented in Hull (1973). Most notably, Hull seems to have abandoned the three tone analysis in favor of marking a single accent on each content word. Whether this is to indicate a pitch accent or a stress accent is not clear, but from my own observations of the language, it is a step in the wrong direction. However, the morphological richness of Tiwa does give tone a low functional role, so the text is still understandable even without accurate suprasegmental information. This issue
notwithstanding, these publications substantially increase the available corpus of Taos Tiwa running texts.

After Hull and his Christian texts, documents with primary data on Taos Tiwa largely run dry. The exception is the work of Corrie Kontak and Janet Kunkel, missionary linguists who wrote some unpublished manuscripts towards a grammatical sketch of Taos Northern Tiwa between 1985 and 1987. These manuscripts are not archival and appear to be in closed circulation. They show influence from David Hull’s research: marking three tones, writing /x/ as “hh”, and using the SIL convention of writing Tiwa /i/ as “eu”.

However, Kontak and Kunkel worked for Messengers of Christ, a Lutheran missionary and Bible translation organization, rather than SIL. They show terrific insight and skill in their analyses of the language and have a nice build-up towards a grammatical sketch. Their manuscripts include surveys of phonology, question words, temporal dependent clauses, as well as a 40-page grammatical sketch that includes all of these topics and more\(^{56}\). They cover more syntactic ground than Trager (1946) did and are a little more detailed in their morphology. It is only unfortunate that they do not have published articles or more extensive unpublished manuscripts (to my knowledge), because they have a good beginning towards a full reference grammar of Taos Northern Tiwa.

Through the efforts of Kontak and Kunkel, another Christian text was published in the 1990s. Messengers of Christ (1992) is the entire Book of Luke translated into Taos Tiwa. Stylistically it is very similar to the Wycliffe documents described above except

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\(^{56}\) In the bibliography of their manuscript, among the various familiar references, they also list quite a number of conference papers by Randall and Anne Speirs, most of which were presented at the Kiowa-Tanoan conferences of the 1980s. One of these is a comparative-historical work on Kiowa-Tanoan, but there are several mentioned having to do with various constructions of Taos Tiwa. See Speirs, Randall and Anne Speirs 1981-1985 and Speirs, Randall (1962) in the bibliography of this dissertation for references.
that it has a list of names and important words in English given in the back along with the 
Tiwa translation of those words. Also the orthographic conventions are almost identical 
to those seen in the Wycliffe documents. The one major distinction is that there is full 
tone marking throughout the text, including both high and falling tone distinctions. This 
suggests that Kontak and Kunkel had more confidence in recording tone than did David 
Hull, whether or not they end up being right about it.

Since Kontak and Kunkel’s manuscripts, the only original Taos Tiwa data is a 27 
minute audio clip of Christian messages on the Global Recordings Network website 
(http://globalrecordings.net/program/C11781) and the occasional video on YouTube. In 
publishation the only Taos data have been through citation of older sources. Nichols 
(1994b) is one major example, which analyzes vowel copying preceding the nominal 
number suffixes in both Taos and Picuris Northern Tiwa. Nichols cites Taos data from 
Trager’s articles although she is a little cleverer in her explanation of the vowel copy 
construction. Taos Northern Tiwa is otherwise little cited in the linguistics literature since 
so little quality data is easily available without fishing through archives. Fortunately there 
is still a proportionally high number of speakers of Tiwa in the Taos Pueblo community, 
but intergenerational transmission may not presently be as successful as many Taos 
people let on57.

3.5 Picuris Northern Tiwa

Picuris Northern Tiwa is the least well-analyzed and documented of the Tiwa 
languages and is one of the most highly endangered languages of New Mexico. There has

57 I have heard such an opinion from Taos people themselves.
been no good lexicon of the language available in either publication or in archives, no audio recordings, and the few grammatical studies have only scratched the surface of the morphosyntax. Only very recently has quality archival material become available (to be described below). Picuris Tiwa does have the advantage of having a large corpus of texts in the language (Harrington and Roberts 1928), which provides the potential for much more in-depth work on the language from the currently printed resources. This collection is especially valuable because these Picuris texts are indigenous narratives unlike the text corpora for Taos and Southern Tiwa, which are largely translations of Western Christian documents.

Within the earliest period of documentation of New Mexican languages, the BAE period of the late 19th century, Picuris received very little attention. Budd (1886), archived as NAA manuscript 1023, appears to contain the first significant recordings of the language, although it contains very little data. In order to compare and contrast the languages of Taos, Picuris, and Isleta, he gives two short sentences with parallel translations in each of the three varieties plus a side-by-side list of the numerals from 1-10. Budd’s transcription quality is on par with that seen in his other documents on Taos Tiwa (see previous section), but it is adequate enough to see some of the differences in Picuris as compared to Taos and Southern Tiwa. The comparative list of numerals in this document is also copied in typed format into NAA manuscript 3125 by J. N. B. Hewitt (Hewitt 1896), but adds nothing to the account of the language.

John Peabody Harrington would be the next researcher to document the Picuris Northern Tiwa language, although the amount of work he did pales in comparison to his contemporaneous studies of Taos Tiwa. Within his collection of microfilmed field notes,
his documentation of Picuris constitutes but one reel of 710 images, reel 37 of the Southwest portion. Over 500 of these reel frames are made up of notes and drafts—both handwritten and typed—for his publication of texts with Helen Roberts. The rest of the reel consists of ethnographic, grammatical, and lexical notes. Based on this content and the organization of his notes, he apparently did not make any significant study of the texts he recorded, not even establishing a real slip file of vocabulary as he did for the other Kiowa-Tanoan languages. Thus, while his original field notes on Picuris are not without value, they add little to the actual published material.

The one publication on Picuris Northern Tiwa that Harrington did produce, however, proved to be extremely important for the documentation of the language. Writing in association with ethnomusicologist Helen Roberts, Harrington and Roberts (1928) is a compilation of 29 lengthy children’s stories and 11 songs (with accompanying musical notation) transcribed in the original Tiwa along with an English free translation, the document totaling over 150 pages of tight, small print. Although not analyzed word-for-word or morpheme-by-morpheme, the English translation and the other descriptive material for Tiwa and other Tanoan languages are enough to allow for a decent analysis of this outstanding collection of texts. It is in fact the largest collection of native texts—as opposed to translated Western texts—for any of the Kiowa-Tanoan languages. Harrington’s transcription of all but tone is quite accurate, as could be expected from his later publications after having years of experience with Kiowa-Tanoan. In addition Roberts provides a write-up analyzing the musical conventions of Picuris singing.

\[58\] Note that the publication of this text collection is over a decade after he had ceased to do active field work on Kiowa-Tanoan.
Although not of much interest for the purposes of linguistic analysis, her essay provides significant documentation on the ethnomusicology front.59

Although it would be some decades before the next major published documents on Picuris Northern Tiwa would appear, the 1920s and 1930s were not without any research efforts. Alexander Lesser included Picuris in his 1929 unpublished survey of kinship terms among native Southwestern languages. He gives over 17 pages of one of his pocket notebooks to recording the first-, second-, and third-person possessive forms of numerous kinship items in Picuris Northern Tiwa in a fairly decent transcription effort. A few years later, Elsie Clews Parsons published an ethnography of Picuris Pueblo as an article in the journal *American Anthropologist* (Parsons 1939). While not of book length like her other ethnographic descriptions, she formats the article quite similarly, including a smattering of Picuris Tiwa terms throughout, as well as a detailed list of kinship terms. Fortunately these transcriptions are well-informed by George Trager’s fieldwork on the Tiwa languages and most are of much better quality than those seen in Parsons’ publications of the 1920s.

It was during the 1930s that Picuris Tiwa received its first major linguistic analysis, albeit not in published form. George L. Trager, who had begun to undertake a major study of Taos Northern Tiwa (as described in section 3.4), in 1937 decided to collect data on the Tiwa spoken at Picuris, Isleta, and Sandia. These notes are included with the rest of the George L. Trager Papers archived at the University of California-Irvine. Trager’s endeavors for Picuris are quite similar to his study of Southern Tiwa.

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59 It appears that Harrington also recorded some Picuris songs on wax cylinder, perhaps in affiliation with this project. These recordings have subsequently been transferred to other media and may be found at various academic libraries and archives in the US.
described in the next section. His notes consist of 46 pages of elicited vocabulary and occasional linguistic notes and an 11 page manuscript describing Picuris Tiwa phonology. Having already worked for a couple years on Taos Tiwa, Trager’s transcriptions are of great quality, only his analysis of suprasegmentals being difficult to interpret. His notes unfortunately contain little in the way of grammatical analysis, consisting entirely of individual lexical items and phonemic inventories, but he would pave the way for future work. It should also be noted that Trager’s papers include the ethnographic notes of Joan Abbott, who did fieldwork and interviews at Picuris in 1969. There is little in the way of linguistic data in Abbott’s notes, although Trager does pencil in corrections to Tiwa forms in the transcript of a 58-page interview that is mostly in English. The notes are interesting from an ethnographic and historical point of view, documenting something of Picuris culture in the mid-20th century.

Picuris Tiwa would remain unstudied for another 30 years before the next linguist or ethnographer came along. In the mid-1960s, Felicia Harben Trager began working with Picuris consultants under the tutelage of her husband George Trager\textsuperscript{60}. This research led in 1968 to a doctoral dissertation in anthropology at SUNY Buffalo (Harben Trager 1968). The first half of this dissertation provides the very first grammatical description of the language, detailing the basics of the phonology and morphology, including the noun class and number marking on nouns and the pronominal proclitics that affix to verbs and possessed nominals as well as minimal further coverage on compounding and TAM suffixation on verbs. The second half of the dissertation is given over to

\textsuperscript{60} By way of biography, Felicia Harben (Trager) appears to have been Trager’s second wife following Edith Crowell (Trager-Johnson) who had worked on Kiowa, as mentioned in section 3.1. Trager and Crowell divorced in 1960 and Trager was married to Harben in 1961.
“ethnolinguistics”, considering such culturally specific topics as the name of the Pueblo, the status and form of loanwords, part of the lexicon for discussing time and space, kinship, government, and a number of other semantic domains. Aside from the list of kinship terms, none of these discussions is particularly long or detailed, but it does provide the groundwork for subsequent research on Picuris.

Felicia Harben Trager followed up her dissertation with a small number of articles, most of which are based in the material contained in her dissertation. Trager and Harben Trager (1970) is an article written with her husband and describes the terminology for cardinal directions in both Taos and Picuris Northern Tiwa. It was described in section 3.4. Harben Trager (1971a) is a distillation of her dissertation’s description of Tiwa phonology, covering the segmental inventory, allomorphy, and suprasegmentals of the language, as well as some minimal coverage of the syllabic structure. Harben Trager (1971b) is an analysis of vocabulary dealing with temporal units, also adapted from her dissertation. It includes a list of the terms for the days of the week—all loans from Spanish—and for the months, for which there are indigenous terms. Her analysis involves some consideration of the morphological constituency and discussion of anecdotes demonstrating pragmatic usage of temporal concepts by Picuris speakers. The article concludes with a brief comparison of terms for months in Nootka. Harben Trager (1972) lists the kinship terms in use at Picuris and contrasts the forms and usage with that described for Taos in consideration of the changes that Picuris Tiwa has undergone. Finally, Harben Trager (1975) looks at the noun classification and number marking as reflected in both the nominal suffixes and pronominal proclitics, analyzing the synchronic system seen in Picuris Northern Tiwa as having undergone changes
towards a singular-plural number system analogous to English and Spanish. These last
two articles were actually published posthumously. Felicia Harben Trager died at a
tragically young age in 1972, cutting short any further study she might have made on the
language.

Fortunately, study of Picuris Northern Tiwa was soon picked up by Amy
Zaharlick, an anthropology student of William Leap who met George Trager in 1972
shortly after his wife’s death. Based on the notes of George and Felicia Harben Trager
and her own fieldwork begun in 1973, Zaharlick would produce the best descriptive
materials on the language done to date. Her publications begin with Zaharlick (1975),
which examines the noun class and number suffixes and the possessive (intransitive-
dative) and transitive series of pronominal proclitics in order to analyze the
morphological constituency, akin to Trager’s 1954 analysis of Taos Northern Tiwa and
Leap’s (1970b) analysis of Isleta Southern Tiwa. Given how problematic such a
synchronic analysis of these effectively portmanteau forms is, this early article itself adds
little to our understanding of Picuris Tiwa. Her follow up was much more in-depth and
interesting though. Zaharlick (1977) is a doctoral dissertation from the American
University which, although titled Picuris Syntax, is as close to a full grammatical sketch
as has yet been published. Her study covers the basic phonology, the morphology of
nouns and verbs, and is among the earliest pieces of literature to seriously consider giving
any attention to the passive/inverse construction in a Kiowa-Tanoan language. She also
includes discussion of complex clause constructions and six short morphologically
glossed texts: four adapted and analyzed from Harrington and Roberts (1928) and two
original personal narratives. The work is also valuable for listing a large number of
grammatical “particles”, which are often overlooked in morphology-oriented studies of Kiowa-Tanoan. However, like many other works of the era, it gives too little attention to the semantics of grammatical constructions and does not address verbal TAM suffixes and enclitics adequately. Zaharlick also follows Trager’s and his students’ odd analysis of suprasegmentals in the language, although she does not mark stress-tone much outside of the phonology chapter. Nonetheless, the dissertation provides decent coverage of Picuris grammar.

Zaharlick published three more articles on Tiwa before dropping out of the arena of Kiowa-Tanoan studies. Zaharlick (1980) is a report on her dissertation research to the New York Academy of Sciences. It gives one of the texts she included in the appendix of her dissertation and based on examples from this text, she presents a list of transformational rules for the language. While the reader may extrapolate some useful information on Picuris Tiwa from these rules, it presents little that cannot be found in Zaharlick’s other publications. Zaharlick’s (1981) article is an attempt to reanalyze tone in the language following Hull’s (1973) findings for Taos Tiwa. While she does report that there is more to tone in Picuris Tiwa than had been previously described, she comes out of the article with little more clarity on the issue than she had when she went in. Finally, Zaharlick (1982) improves on her 1977 description of the passive construction following Allen and Gardiner’s (1980) study of the Southern Tiwa passive, demonstrating that the system works much as it does in Southern Tiwa, with usage determined by the person-animacy-topicality hierarchy. It also provides the fullest set of pronominal proclitics for the language of any of the Picuris literature and addresses
ditransitive constructions, which had not been previously explicitly discussed or illustrated in any publication.

While Zaharlick appears not to have published any subsequent work on Picuris Northern Tiwa or Kiowa-Tanoan, she has recently made a much more substantial contribution. In 2012 she submitted her field notes and recordings on Picuris, as well as those of George and Felicia Harben Trager, to the National Anthropological Archives. Unfortunately I did not discover this in time to get a hold of these notes or make use of them for the present dissertation, but it does appear to be an invaluable collection of linguistic data on a highly endangered language and could provide a huge contribution to future work on the language.

Amy Zaharlick was the last linguist to publish on Picuris Tiwa based on her own fieldwork, but the late 1990s did see another scholar touch on the language based on the previously published work. Lynn Nichols, who had done a doctoral dissertation at Harvard on Zuni syntax, also took an interest in Kiowa-Tanoan, making a contribution to comparative-historical studies. But, she also took an interest especially in Picuris Northern Tiwa and had apparently planned to write a grammatical description of the language, although this has not yet been developed. Nichols (1994b) presents an attempt to account for the epenthetic vowel that occurs with some nouns between the stem and the noun class/number suffix in both Taos and Picuris Tiwa. The phenomenon differs for each of the two Northern Tiwa languages, but in both seems determined by length and form of the stem and by suprasegmental features (stress and/or tone). Nichols provides a good quality analysis based on the available data, although she is of course limited by the impoverished account of suprasegmentals throughout the Tiwa branch. Nichols (1995a)
and (1995b) are essentially the same article and attempt to account for the restrictions on
the passive/inverse construction in Picuris Tiwa by appealing to the Government and
Binding notions of c-command and the Projection Principle. The theory-specific
discussion aside, these articles supplement Zaharlick (1982) in further elaborating the use
of the passive/inverse, although they are perhaps not as prolific as the Southern Tiwa
literature on the topic. These articles are intelligently written and look at diverse
evidence, including incorporated nouns and complex clause constructions. Nichols
(2001) considers much the same data, but compares the constructions and restrictions
with those found in Kashmiri, a typologically different language. Nichols (1995c) is an
unpublished manuscript which attempts to determine the functions and distribution of the
ever-frustrating ny-/nɔ̄-/ prefix of Tiwa, considering Taos in addition to Picuris Northern
Tiwa. She is particularly interested in the function involved in cross-clausal argument
structure. While it is a decent attempt, she does not consider enough data to get at a
coherent picture of the use of this morpheme.

No further work has appeared on Picuris Northern Tiwa. While I and some other
colleagues at the University of New Mexico have had some tentative starts to language
projects with the Pueblo, nothing has gotten off the ground. Considering how small the
community is and how few fluent speakers are left, it can probably be considered the
Kiowa-Tanoan language in most need of documentation and revitalization efforts.

3.6 Southern Tiwa

Southern Tiwa is today spoken at the two Pueblos closest to Albuquerque: Isleta,
approximately 15 miles south of the city center, and Sandia, approximately 15 miles to
the north. It is also the language of Ysleta del Sur, the sole surviving Pueblo community in the El Paso area. Isleta is today one of the largest Pueblos in New Mexico while Sandia has continuously been one of the smaller ones since language documentation began in the mid-19th century, but both still have fluent first language Tiwa speakers. Ysleta del Sur today has a moderate-sized population. The last fully fluent speakers of Tiwa at that Pueblo appear to have died in the early 20th century, but there are still partial speakers and today an active program to revive the language. Given these respective situations, it should not be surprising to find that the overwhelming majority of the language data that have been recorded have been from the Isleta dialect, although this work has not been as extensive as that done on the Taos Northern Tiwa language.

Despite a relative dearth of study in the 20th century until the 1980s, the BAE period of the late 19th century saw a fair number of studies of the language. At a first scan of the archive, it may appear that Bartlett (1852a, 1861, 1896)—NAA manuscripts 458a, 1627, 458c—represent the earliest documentation of Southern Tiwa, Bartlett’s Tiwa wordlist having been collected at Ysleta del Sur. However, as described in section 3.4, his consultant, despite being a leader in the Ysleta del Sur and Piro communities, was actually from Taos and thus spoke Northern Tiwa. The actual earliest recording of Southern Tiwa thus appears to be NAA manuscript 1019, collected by George Gibbs in 1868 from two Isleta men visiting Washington, D.C. (Gibbs 1868b). This document contains a wordlist of approximately 200 words and possessive phrases written into one of the Smithsonian’s 211 word “Comparative Vocabulary” elicitation prompt booklets. This list, or at least the majority of it, is copied in a slightly clearer hand in NAA manuscript 1018 (Gibbs 1868a). Like other recordings of Kiowa-Tanoan languages from
the era, Gibbs did not catch onto the distinction of aspirated or ejective consonants or of tone, although he did distinguish vowel nasalization and the Tiwa [i] vowel, which he usually represents as “er”. His transcriptions are thus interpretable and accurate notwithstanding these usual shortcomings.

Gibbs’ list was duplicated but a year later by Major General August Valentine Kautz, who recorded a list of words from an Isleta fruit seller at Fort Stanton, NM in 1869 (Kautz 1869). This list can be seen in NAA manuscript 1021 and was elicited using the same 211 word prompt as Gibbs (1868b). Not being a linguist or ethnographer, Kautz’s transcriptions are not as accurate as Gibbs’, although being based on the same prompt, it does provide a check for comparison that the modern linguist might use to interpret what the documenters might have actually heard.

The same is also true of the next wordlist, recorded by agricultural chemist Oscar Loew in 1873 on Lt. Wheeler’s Expedition for Exploration and Survey West of the 100th Meridian, which was elicited again using the 211 word “Comparative Vocabulary” prompt (Loew 1873). This list is gathered with several others from the same expedition in NAA manuscript 1870 (Klett 1879). Loew’s transcriptions are somewhere in quality between Gibbs’ and Kautz’s, but it adds little more than another perspective upon the same lexical items. The dialect represented is again Isleta, although no details are given on the context of the elicitation. Also, like the above two other lists, no details are presented on the grammar, nor could much be extrapolated by the modern linguist aside from first person singular possessive forms for kinship terms. Fortunately, the next documenter gave a lot more attention to the details of the language.
Albert S. Gatschet, one of the earliest full-time BAE ethnographers, began recording the Southern Tiwa language in the 1880s. Not only would Gatschet record full texts and sentences and develop a beginning analysis of the grammar of the language, he also would end up collecting data from both Isleta and Sandia Southern Tiwa speakers. NAA manuscript 613 is a notebook filled with nearly 100 pages of linguistic and ethnographic notes on Isleta Southern Tiwa, including texts, sentences, and vocabulary, recorded in 1879 and 1885 (Gatschet 1885). While Gatschet’s penmanship is not always the neatest, his transcriptions are fairly good for the time, although he too had yet to identify and distinguish the ejective series of consonants at this point. Still, this notebook is highly valuable for its extensiveness and its focus on language above the word level.

Based on these notes, Gatschet published two Isleta Southern Tiwa texts in the *Proceedings of the American Philosophical Society* (Gatschet 1891). Both of these mythic texts are presented with an interlinear word-for-word translation as well as an English free translation, making them among the earliest samples of a Kiowa-Tanoan to appear in full publication. The transcription of these narratives follows the same conventions as those seen in his notebook, although the published texts are at least typed and presented more neatly. Gatschet would also give a short page of Isleta Tiwa data in a handwritten manuscript on deverbal nouns alongside data from around 20 other Native American languages (Gatschet 1895). This document, NAA manuscript 3437, contains only a dozen or so Tiwa words, but gives some idea of the derivation of agents, instruments, and objects derived from verb forms.

In 1899 Gatschet elicited 19 pages worth of Tiwa vocabulary from a man from Sandia Pueblo, constituting the first significant body of data from a Southern Tiwa dialect
other than Isleta (Gatschet 1899a). The notes, archived as NAA manuscript 614, include terms for body parts, fauna, objects, tribes, geographic names, and miscellaneous other basic vocabulary. His transcription had little improved since recording Isleta Tiwa and he still missed the ejective and aspirated consonants, but otherwise represented the language well enough. He does not include any full sentences or texts to say much about the grammatical structure or how the Sandia dialect might differ from the Isleta, but the document does provide some evidence in terms of recent sound changes in the language. Although this original manuscript gives the data pseudo-randomly, in order of elicitation, Gatschet then copied the word list with headers for different semantic fields, which is archived as NAA manuscript 1553 (Gatschet 1899b).

The last major document in the BAE archive with Southern Tiwa data is the only extant word list of Tiwa from the Ysleta del Sur dialect of which I am aware, collected by ethnographer James Mooney in the late 1890s. In 1897 Mooney visited the Piro settlement of Senecú and the Tiwa settlement of Ysleta near El Paso. His ethnographic notes from this trip are collected in a notebook and loose notes archived as NAA manuscript 1953 (Mooney 1897). This work only contains a couple of Tiwa words, however. Mooney did transcribe over 100 Tiwa words, but he wrote them directly onto a copy of Bartlett’s Kiowa word-list, archived as NAA manuscript 454 (Bartlett and Mooney 1897). He used the same 180-word elicitation prompt as Bartlett had used for Kiowa, but he mostly wrote the Tiwa on the back of the pieces of paper (since he’d written in Piro and Plains Apache forms in the margin on the same side as the Kiowa). Mooney’s regular handwriting is generally quite terrible, but his transcriptions of other languages are at least legible. On the whole these transcriptions are about as accurate as
Gatschet’s, but he does catch many of the stop contrasts that the previous recorders had missed. The list is good enough to demonstrate how similar the Ysleta del Sur dialect was to its more northerly counterparts, but not extensive or detailed enough to say much of the full similarities and differences developed over 200 years of separation.

The only other documents from the early period of the Bureau of American Ethnology with any Southern Tiwa data have only a handful of forms documented. Budd (1886), a letter archived as NAA manuscript 1023 (see previous two sections), gives two sentences in Isleta Tiwa with parallel translations into Taos and Picuris Northern Tiwa. He also presents the numerals 1-10 alongside the Taos, Picuris, and San Juan Tewa forms. This list of numbers is then copied in typed form in NAA manuscript 3125 (Hewitt 1896). These comparative sets are enough to establish that Southern Tiwa is fairly divergent from its northern sister languages, but gives little else. Another BAE affiliate, J. Walter Fewkes, visited the Pueblos near El Paso at the beginning of the 20th century. Fewkes (1902) is a study of these Pueblos, particularly Ysleta del Sur, and includes several Tiwa terms for government officials and a few social practices.

The next major presentation of Southern Tiwa language data appeared in the popular press rather than through academic research. In 1910 popular writer Charles Lummis, who had been living at Isleta for a number of years, published a volume of traditional Isleta stories in English, but sprinkled throughout with Tiwa words, albeit in mediocre transcription. On top of this, however, the book also contains a 10-page story given in Tiwa with a word-for-word interlinear translation and followed by an English free translation. Lummis’ transcription of the text is actually fairly decent for its time, even capturing some of the non-English phonemic contrasts. Despite the faults that
remain in the representation, the Tiwa forms are still interpretable given other
documentation of the language.

As the reader might expect from the review above, the next researcher to come
along in this period was John P. Harrington. While Harrington never published any
articles or books on Southern Tiwa, a full reel of over a thousand microfilm images—reel
36 of the Southwest portion of his collection of field notes—is dedicated to Isleta
Southern Tiwa (Mills 1981). However, unlike his other Kiowa-Tanoan work, the majority
of the linguistic research on Isleta Tiwa appears to have been done by his wife at the
time, Carobeth Tucker Harrington. It is not clear from the records whether she herself
personally worked with native speakers or if she simply processed and organized her
husband’s notes61, but much of the documentation does seem to be attributable to her.
These linguistic notes include a slip file of over 600 index cards of linguistic and
ethnographic notes, about 240 pages of texts and vocabulary from the texts, a manuscript
of over 100 pages covering the full set of pronominal proclitics, and over 600 pages of
handwritten notes on the language. The reel also contains two unpublished ethnographic
manuscripts by John P. Harrington. One is on the katsinas of Isleta and the other is an
evaluation of historical documents correlating the province of “Tihuex” with Isleta and
“Quiriz” with San Felipe. Hundreds of pages of notes accompany these manuscripts,
although they present little in the way of linguistic data. Still, this reel contains a wealth
of data on Isleta Southern Tiwa which has been under-utilized in research on the
language.

61 Carobeth Tucker Harrington, later Laird, was herself a competently trained linguist and ethnographer and
had been a student of John P. Harrington. There is thus no reason not to think that she did not do the work
herself, although her autobiography does not attest to this (Laird 1975).
A few years after the Harringtons elicited all of the above material, around 1921, renowned ethnographer and linguist Franz Boas recorded a list of 175 word forms from an Isleta speaker, primarily the names of plants (Boas n.d.). This word list is gathered in the archives of the American Philosophical Society and, like similar manuscripts in this collection mentioned above, I have yet to access these materials to review them.

Another renowned early Puebloanist followed the Harringtons. Ethnographer Elsie Clews Parsons, mentioned many times in the preceding sections, also wrote a fair amount on the Southern Tiwa, primarily on Isleta Pueblo. Parsons (1920) contains opening notes on the clan, moiety, and ceremonial system of Isleta and of two Keresan Pueblos: Acoma and Santa Ana. As such, it contains the native names for many of the societal divisions and related practices. She followed this short article up the next year with further details on Isleta Pueblo (Parsons 1921). This latter article includes a list of kinship terms from the Isleta dialect as well as a few from Sandia. It also goes further into the clan and moiety system and lists part of the ceremonial calendar for Isleta. A decade later, Parsons published a full-length ethnography of Isleta Pueblo of over 200 pages, comparable to those she produced for other communities (Parsons 1932). This volume incorporates and expands on her findings from the previous articles as well as addressing many other aspects of Isleta life. She also includes more than 50 folktales from the Pueblo (all in English, of course). Representation of Tiwa words and phrases in these works, while numerous, is of the usual quality of Parsons’ transcriptions: not absolutely terrible, but not all that good either. They are for the most part interpretable.

Beyond these three works, Parsons also wrote a detailed manuscript commenting on watercolor paintings sent to her by an Isleta Tiwa artist. These paintings illustrate
many ceremonial practices from an insider perspective as a way of correcting and elaborating on the description of Isleta ceremonies read in Parsons (1932). Parsons’ commentary and these paintings were edited by fellow ethnologist Esther Goldfrank and published as Parsons (1962), twenty years after Parsons’ death. Like Parsons’ above works, this volume includes transcriptions of many Tiwa terms, but it also contains an annotated glossary of the Southern Tiwa forms as more accurately transcribed by George Trager, who began work on the Tiwa languages in the 1930s (Trager 1962). Trager’s transcriptions are largely accurate, although he approximated some of the forms by considering Parsons’ representations and applying the appropriate regular sound correspondences to Taos Tiwa forms he had recorded rather than checking them with a native Isleta speaker.

Also during the 1920s when Parsons was doing her research, anthropologist Alexander Lesser elicited kinship terminology from Isleta and Sandia Tiwa speakers (Lesser 1929b). As part of the same project as described in the other sections, Lesser collected 12 pages of a pocket notebook worth of notes from Sandia and 15 pages from Isleta in late 1929. As with the other languages, his elicitation included the first-, second-, and third-person singular possessive forms for many of the terms in addition to some non-possessed forms and a few ethnographic notes. Also like the other Pueblo languages he recorded, he never published the data and the notebooks are archived at the American Indian Studies Research Institute at Indiana University.

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62 Goldfrank also did ethnographic studies at Isleta, publishing an article (Goldfrank 1926) and a book-length volume about the artist who collaborated with Parsons towards the 1962 publication (Goldfrank 1967). These are not covered in this literature review because they contain next to no consideration of the Tiwa language.
A few years after Parsons and Lesser did their ethnographic work and shortly after he began his linguistic research on Taos Northern Tiwa, George Trager did some field work with both Isleta and Sandia Southern Tiwa. His field notes suggest the elicitation was done in late 1937 and early 1938, although it may have been done as early as 1935. Trager also supplemented his Isleta data with more consultant work in 1957. The total Southern Tiwa notes among the George L. Trager Papers archived at the University of California-Irvine consist of two ten page drafts of descriptions on Isleta and Sandia phonology respectively, 25 pages of notes on Sandia Tiwa, mostly just vocabulary, and 37 pages of notes on Isleta Tiwa, including primarily vocabulary, but also some verbal paradigms and other linguistic notes. These collections of notes are comparable to the Picuris notes described in the previous section. On top of these, however, Trager also developed a slip file of over 700 lexical index cards, including grammatical notes and information on noun classes, although not as much on verbal structure. Trager never published any articles dedicated wholly to Southern Tiwa, but he did make his notes available to some later students and other researchers working on Kiowa-Tanoan languages. While his notes are little given over to morphosyntactic issues, they are quite valuable as one of the only major lexical resources available on the language.

It would be several decades before any other researcher would work with the Southern Tiwa language. White (1945) presents some short ethnographic notes on Sandia Pueblo collected as an aside by Leslie White, an anthropologist specializing in the Keresan Pueblos. He describes some of the positions of government and ceremonies and

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63 This is the year given in Trager (1962) for his work with Isleta, at least.
also lists the Tiwa names for the governing officers, albeit with inaccuracies in the transcription. Newman and Ayer (1950), described in section 3.2, made an audio recording of an Isleta speaker dictating a short list of basic vocabulary and an elicited paragraph-long narrative. In the mid-1960s, ethnologist M. Estellie Smith began working with the Tiwa, primarily at Taos, taking a particular interest in the structure of governing. Smith (1972) is a comparative ethnolinguistic study among the four Tiwa Pueblos as well as the Tewa Pueblo of San Juan, but it focuses especially on Isleta. The article includes terms for many of the government positions at Isleta, as well as attested terms at Sandia and Ysleta del Sur (in addition to some for Taos, Picuris, and San Juan). Her main point is just to present the terms and she does not develop any significant analysis, but it is an interesting representation of this semantic domain of the lexicon.

Shortly before Smith’s article, the first major grammatical studies of Southern Tiwa were produced as doctoral dissertations by two students of George Trager at Southern Methodist University: William Leap and Elizabeth Brandt. Leap worked with speakers of Isleta Tiwa in the late 1960s and appears to have developed a fairly decent basic understanding of the language. Leap (1970a) is an article that considers the development of the Tiwa noun classes, building on Trager’s analysis of Taos Northern Tiwa. The article includes comparison of the system in Isleta with the systems in Taos and Picuris and even some data points from Ysleta del Sur. It considers the three primary noun classes as well as the function of the prefix \texttt{na-}. On the latter topic, it does present some possible differences among the Tiwa languages, but on the whole the analysis of noun classification is unsatisfactory.
In the same year, Leap also published his doctoral dissertation, a description of
the phonology and morphosyntax of Isleta Southern Tiwa (Leap 1970b). It constitutes the
only grammatical sketch to ever be published on the language and includes: a detailed
description of the sound inventory and allophonic variation; a full list of the tense-aspect-
mood suffixes (but minimal discussion of their range of functions); a list of many of the
postpositional enclitics; the organization of the noun class system; and, some discussion
of a subset of the pronominal indexation forms, including an internal reconstruction of
their historical composition similar to Trager’s (1954) analysis of Taos Tiwa. Being a
student of Trager, Leap’s consideration of the language is very much in the vein of his
mentor’s, including a strange analysis of suprasegmental phonology, an analysis of noun
classes that is hardly explanatory, and an internal reconstruction of the pronominal
proclitics that does not particularly contribute to an understanding of their historical
development. However, these criticisms aside, Leap does provide decent coverage to the
phonetics and phonology—the best ever produced for the language—and to the verbal
morphology other than the pronominal indexation markers. Leap also includes a short
narrative text in Tiwa with an interlinear morphological gloss and free translation.

After his dissertation, Leap ceased to focus on grammatical topics in Isleta Tiwa,
although he still wrote a couple of articles dealing with the language. Leap (1975) is a
sociolinguistic discussion of the use of written and spoken Isleta Tiwa in an educational
setting among young students who are not necessarily fluent speakers. This work
includes several Tiwa words and sentences as examples. Leap (1981) considers Native
American conceptualizations of math and numbers and includes an example from Isleta
Tiwa, among other languages. Otherwise during the 1970s and 1980s, Leap took an
interest in the variety of English used among American Indians, particularly in the Southwest and at Isleta. Leap (1973, 1974a, b, 1977a-d, 1980, and 1982) thus address this topic of “Indian English” with only occasional comments on the Native language substrate.

At the same time that Leap was studying Isleta Southern Tiwa, Elizabeth Brandt was doing research on Sandia Southern Tiwa. Unlike Leap, her research agenda was primarily sociolinguistic in nature from the get-go and considers very little in the way of phonology, morphosyntax, and semantics. Her dissertation focuses on age-based variation at Sandia as realized in the articulation of consonants and the use of independent pronouns and pronominal indexation (Brandt 1970b). Her findings on the consonant variation are also published as an article that appeared the same year (Brandt 1970a) and both areas of her study are summarized in Brandt (1975). Given her approach to her research topic, Brandt actually has very little in the way of language examples and adds little to the representation of Tiwa language data in the literature. Moreover, her description of the language and language situation at Sandia Pueblo cast the language as being far more drastically moribund than I find it to be 30-40 years later. While the language situation at the Pueblo is indeed quite dire, I have not seen the grammar to have been reanalyzed and broken down as much as she suggests that it is (even for the more fluent speakers), indicating she may not have had optimal access to the best speakers of the language.

Like Leap, Brandt did not significantly continue work with Southern Tiwa after her dissertation period, at least not in publication, although she did continue to write

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64 Leap’s (1977) edited volume also includes Cissna (1977), Hutchinson (1977), Stout and Erting (1977), and Wayne (1977), contributions by other authors on Indian English, including Isleta English.
about the language situation in the Southwest. One exception is Brandt (1979), a handbook chapter on Sandia Pueblo. It addresses language only a little, but it does include a handful of lexical items. Another exception is Watts and Brandt (1981) which reexamines the short text presented in Leap (1970b) and analyzes it in terms of animacy and argument tracking, especially in the light of the findings of some of the literature to be described immediately below. Brandt also published a couple of articles about secrecy and the control of knowledge among the Pueblos (Brandt 1977, 1980, 1981). Although she does not particularly address the situation at the Southern Tiwa Pueblos much, this topic is important for an understanding of the linguistic situation among the Pueblos.

It was only a few years after Leap and Brandt produced their dissertations that the most detailed and modern grammatical analysis of Southern Tiwa began to appear. Barbara Allen and Donna Gardiner were missionary linguists with the Summer Institute of Linguistics who began working at Isleta in the mid-1970s, collaborating with linguistics professor Donald Frantz. As well as translating a large amount of Biblical material into Southern Tiwa, these authors would end up producing a series of articles through the 1970s and 1980s that took a formalist linguistics approach to some interesting morphosyntactic constructions of the language—and language family—that had thus far been understudied. These publications would perhaps do more than any other to bring the Kiowa-Tanoan language family to the attention to the wider world of linguists. Although mostly written using a formalist theoretical syntactic framework that is now largely abandoned—Relational Grammar—these articles would be fairly accessible to most linguists, especially the interesting language data presented therein.
Allen and Gardiner (1977) opens this series of articles with a presentation of the form and distribution of, and restrictions on, noun incorporation in Isleta Tiwa. The survey includes consideration of transitivity, animacy, person, noun class, specificity, and valence altering constructions. Many of the other constructions they describe through this body of writings interact with incorporation, thus this article serves as a useful introduction. It is also notable in being the first study dedicated to noun incorporation in any Kiowa-Tanoan language, a family that has perhaps the most productive use of incorporation of any in the world. It is thus further useful for approaching the noun incorporation constructions found in Southern Tiwa’s sister languages. This article was republished a few years later in the *International Journal of American Linguistics* as Allen, Gardiner, and Frantz (1984). While the prose is revised and extended and a couple of Relational Grammar tableaux are added, the set of examples and overall structure of the article are effectively the same.

The same year as their opening act on noun incorporation, Donna Gardiner produced two solo-authored works addressing complex clause constructions and information structure markers. Gardiner (1977a) appears in the same volume as Allen and Gardiner (1977) and describes embedded question and relative clause constructions, but also touches on the form of main clause information questions and focus markers. This article is, however, just a diluted version of Gardiner (1977b), her M.A. thesis from the University of North Dakota. This much longer work goes even further into embedded questions and other complex clause constructions as well as listing the full set of interrogative pronouns and information marking enclitics and even considers a couple of evidential/epistemic particles. Unlike the articles she would write with Allen and Frantz,
Gardiner’s works are not embedded within a Relational Grammar framework and are largely descriptive in nature. It is also chock-full of examples that are not to be found in other writings. Gardiner never returned to the topic and these two relatively hard-to-find works are the only ones to address these kinds of complex clause and information structure marking constructions to any extent in the Tanoan languages, and certainly the only ones for Tiwa.

Barbara Allen followed up the noun incorporation paper the next year with two articles dealing especially with argument indexation. Allen and Frantz (1978) considers verbal indexation, including monovalent, divalent, and trivalent constructions as well as the person-animacy restrictions that lead to valence alternations. It is these restrictions and alternations in particular that would catch the attention of many other linguists and would be the center of attention of Allen and Frantz’s other writings. This article was republished under a slightly different title as Allen and Frantz (1983b). Like the above mentioned re-publication, the prose is slightly revised and extended, but the examples and content are largely the same. Allen (1978) also addresses the same topic of verbal indexation and valence alternations, although with more focus on “goal” (i.e. dative) arguments, including ditransitive, possessive, and locative goal constructions. This article also differs from the above in being cast more explicitly in a Relational Grammar framework in terms of the terminology used. The data it presents are quite interesting, though. This article too would be revised and published again as Allen and Frantz (1986). One of the differences in this latter publication is that it presents a subset of the

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65 All of these re-issuances also serve to print the new version in a venue with wider circulation than the original.
pronominal proclitic paradigm for Southern Tiwa, which differs somewhat from the forms presented in Leap (1970b).

The early 1980s witnessed a few more original articles before these authors would fade from the Southern Tiwa oeuvre. Allen and Gardiner (1981) describes the passive/inverse construction. While the syntactic reflexes of the construction presented in this article are but a rehash of what the authors addressed in their previous writings, this article is most valuable in getting into the morphological formation of the passive form of the verb, the only detailed description of this in Southern Tiwa, and includes a decent length list of verb stems to illustrate. Allen, Frantz, and Gardiner (1981) discusses what they call “phantom arcs” in Relational Grammar terminology. In other terms, these are constructions where the syntactic valence of the clause is less than the morphological valence suggested by the form of the pronominal proclitic. Namely, they are looking at divalent verbs that are lexically specified to take a ditransitive pronominal indexation. Their analysis attempts to deal with these within a Relational Grammar framework, but the greater value of the article (for the more widespread audience) are the descriptive facts of the construction. The same can be said of the construction presented in Allen and Frantz (1983a). This article introduces a complex clause construction wherein the main clause has an impersonal subject (e.g. “it’s hard for X to do Y”), but the authors take particular interest in a sentence where the subject of the embedded clause is also unspecified (e.g. “it’s hard to do Y”), which requires use of the passive construction when polyvalent verbs are involved. Such articles, while not the most prominent of these authors’ writings, do serve to show just how interesting the grammar of Southern Tiwa can be.
The last of the core articles in this series was Allen, Frantz, Gardiner, and Perlmutter (1990), a 60-page volume chapter which effectively summarizes many of the descriptive points on argument indexation, voice, valence, and noun incorporation presented in the above articles. As such, the types of constructions and many of the specific examples are repeated from the earlier writings and it presents little that is new (and indeed, skips some of the more interesting data and constructions). Also, being a chapter in a volume on Relational Grammar, it is a little more heavy-handed on the theory-specific jargon than many of the above literature. It does serve as a decent summary of the basic facts of Southern Tiwa as presented in this series of articles, however. Furthermore, it publishes for the first time a full list (or nearly so) of the large inventory of pronominal proclitics of the language, giving many more than Leap (1970b) did. While a couple of other full inventories would appear at roughly the same time—but with some differences—this appendix of proclitics makes for a good closing to an interesting series of articles.

Allen and Gardiner subsequently dropped out of the academic literature on Southern Tiwa, although they will be mentioned again shortly with regard to their missionary work. Donald Frantz, on the other hand, went on to write a few more articles on the language. Frantz (1985) and Frantz (1991) both touch again on the syntactic and semantic restrictions on noun incorporation under a Relational Grammar framework, but neither really present any new information about the language. Frantz (1995) addresses argument structure more generally, building on the analysis in Rosen (1990) (to be described shortly). This article is even more jargon heavy than Allen et al (1990) and also presents almost no new data. Frantz apparently has also written a grammatical description
of Southern Tiwa (Frantz 1994), but the manuscript remains unpublished and in limited
circulation for now. He also developed a lexicon based on the notes of Allen and
Gardiner and on their Christian documents described below, but this too is in limited
circulation (Frantz n.d.). It is a useful resource for those who can get a hold of it,
featuring example sentences for most lexical entries.

With all of the above articles describing some very interesting and exciting
language data, it should not come as a surprise that Southern Tiwa caught the eye of other
linguists, leading to a few publications based up on the writings of Allen, Gardiner, and
Frantz. Sadock (1985) is a brief blurb that seeks to cast the facts of Southern Tiwa noun
incorporation in the light of Silverstein’s (1976) findings on ergativity and feature
hierarchies. Sadock cites only Allen, Gardiner, and Frantz (1984) and illustrates with no
data, although he does give two large (and unnecessary) figures to illustrate the effects of
various features on noun incorporability.

Laylin (1988) is a doctoral dissertation in anthropology from The American
University which analyzes the pronominal indexation proclitic of Isleta Southern Tiwa
under a Role and Reference Grammar framework. While she does take the articles of
Allen, Gardiner, and Frantz as a point of departure, Laylin also makes use of at least
some of Carobeth Tucker Harrington’s notes on Isleta Tiwa pronominals and includes
many example sentences from these notes as well as a full list of pronominal proclitics as
listed by Harrington. She also includes two texts from Harrington’s notes as well as the
text from Leap (1970b). Aside from the publication of some of C. T. Harrington’s
Southern Tiwa language data, this dissertation adds little to our understanding of the
morphosyntax of the language. Being presented under a Role and Reference Grammar
framework, Laylin does show sensitivity to issues of information structure with respect to the pronominal proclitics. However, it is not apparent that her analysis has any repercussions outside of the theoretical framework, nor does it obviously aid in a diachronic breakdown of the proclitics or in a synchronic analysis of discourse-level information structure.

Rosen (1990) is a 45-page article published in *Language* which gives another Relational Grammar perspective on Southern Tiwa based on the articles of Allen et al. as well as on some unpublished data the author was able to acquire from Frantz. Like Allen et al. (1990), this article is most useful as a summary of the facts of argument structure and noun incorporation in Southern Tiwa. Also like that other article, it includes summary comprehensive tables of all of the pronominal proclitics in the language. Otherwise, while it does present some reflexive constructions not seen in the other literature, most of the data and constructions are repeated from the other publications and the theoretical analysis has no particular bearing outside the Relational Grammar framework (although see the review of Heck and Richards 2010 below).

Finally, it should also be noted that based on the above series of articles, Isleta Southern Tiwa plays a fairly prominent role in Mark Baker’s massive 1996 volume *The Polysynthesis Parameter* (as well as a less prominent role in his 1988 book *Incorporation*). This book presents a Principles and Parameters analysis of “polysynthetic” languages, which he defines based primarily on argument structure. Although most of his discussions revolve around the Iroquoian language Mohawk, each chapter provides supporting evidence from six other languages he considers
polysynthetic, including Southern Tiwa. It also contains the occasional example from other Kiowa-Tanoan languages. While very detailed and interesting, the study is fully couched within its generative framework and gives little to Kiowa-Tanoan studies per se, unless one also follows Baker’s formalist model or one related to it.

On top of their widely cited academic articles which led to the above studies, Barbara Allen and Donna Gardiner worked towards the Summer Institute of Linguistics’ missionary agenda as well by translating Christian texts into Southern Tiwa. They first established an orthographic system. SIL (n.d.) is a booklet which presents their practical orthographic system along with example Tiwa words for illustration. Once a solid foundation in the language was established, they translated three full books of the New Testament into Southern Tiwa. Under the purview of Wycliffe Bible Translators, SIL’s Biblical translation affiliate, Wycliffe (1978) represents a little over half of the Book of Mark written entirely in Isleta Southern Tiwa. Wycliffe (1980) finishes out the translation of this book, filling out those chapters and verses that had not been translated in the first publication. Wycliffe (1981) is an even more ambitious endeavor, being a 100-page translation of the lengthy Book of Acts. Wycliffe (1985) is a Tiwa translation of the short Book of James. Finally, Allen and Gardiner (1987) is the Book of John in Tiwa that was never fully published. Termination of the SIL endeavor at Isleta, whether by the Pueblo’s decision—not unlikely—the missionaries’, or SIL’s, meant that very few copies of this

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66 The other languages are Ainu (Isolate; Japan), Chukchi (Chukotko-Kamchatkan; Siberia), Mayali (Gunwinjguan; Australia), Classical Nahuatl (Uto-Aztecan; Mexico), and Wichita (Caddoan; USA).

67 This booklet is not explicitly credited to Allen and Gardiner, but being the only SIL linguists to work at Isleta to my knowledge and given that the booklet presents the same orthographic system that they use in all of their writings, it is likely that one or both of these authors had a hand in its creation.
last translation were ever produced. I have yet to attain a copy or get a look at this text, but I assume it is in much the same style and format of their other translations.

Like the other Wycliffe publications for Northern Tiwa and Tewa, these texts are presented with no accompanying English translation and no morpheme-by-morpheme gloss. They do however come with chapter and verse divisions making it possible to more easily correlate the Tiwa with other languages. There is apparently an audio translation of the New Testament, or some portion thereof, into Isleta Tiwa as well, much like the one for Rio Grande Tewa described in section 3.2 (Erin Debenport, p.c.). However, I have not been able to get a hold of it to evaluate it as of yet. Such a large body of Tiwa texts is obviously invaluable, despite the fact that they do not represent the indigenous culture. They do complement the texts recorded by Gatschet, Lummis, Harrington, and Leap and at least provide some kind of contextualization for the semantic and morphosyntactic constructions illustrated within.

Allen and Gardiner obviously had a decent understanding of the language considering all of the work they did. Their transcriptions vary in convention among their publications, but are all fairly accurate in their representation of consonants and vowels. However, despite recognizing that Tiwa makes use of lexical tone, they never seem to have arrived at an adequate analysis of suprasegmentals and thus do not mark them at all. They also do not mark vowel length, although the status of length distinctions is even less certain than that of tone distinctions. The Tiwa languages are certainly

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68 There are a few exceptions in a couple of articles, namely to mark a difference between two otherwise homophonous pronominal prefixes. Given their lack of understanding of the system, however, it is difficult to trust the accuracy of these exceptions.
69 The patterns of vowel length contrast seen in Kiowa, Tewa, and Towa suggest that it developed relatively recently, perhaps even after the break-up of Proto-Kiowa-Tanoan. Long vowels appear to correlate
morphologically rich enough to be written and read without any overt markings for tone, so their work does not seem to suffer for the purposes intended. It is an unfortunate absence for a diachronic study such as this one, however.

Since the above research by SIL linguists, no publications with new primary data have appeared. This is primarily due to reservations on the part of the Tiwa communities about working with outside linguists. Most such collaboration that has taken place in the past 20 years has consisted of language revitalization projects aimed more towards helping the communities than towards developing research projects. One exception to this has been the work of Athabaskanist Jeff Leer, who has been doing field work with speakers from Isleta for a number of years. This seems to be a private enterprise, however, and has not produced any publications or archival manuscripts to date.

Recently, two formalist linguists published a reanalysis of Southern Tiwa agreement and noun incorporation patterns based on the data and descriptions of Allen, Gardiner, and Frantz (Heck and Richards 2010). It is moreover based on Rosen (1990), reinterpreting her Relational Grammar account within a Minimalist syntactic framework. The article thus presents nothing new in terms of empirical evidence, but does provide a formalist account to deal with restrictions in the system without having to posit any person-animacy-topicality hierarchy as a syntactic primitive. They also compare their analysis to that of Noyer (1997) and Harbour (2007, *inter alia*) and find them compatible, but with the caveat that Southern Tiwa does not show an inverse number system as is found in Kiowa and Towa. The article contains few actual language examples and would

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historically with lexical accent (or perhaps it’s more that short vowels correlate with lack of accent). Thus, it is feasible that the absence of vowel-length contrast in Tiwa, if it is indeed absent, reflects something of the original Kiowa-Tanoan system.

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be of most interest to linguists building a generative framework to try to capture
generalizations of Kiowa-Tanoan grammar.

There are also recordings available for Isleta Tiwa which were not made for
research purposes. Global Recordings Network has 30 minutes of audio in Tiwa
(http://globalrecordings.net/program/C13761), a mix of prose Christian messages and
hymns (sung with an acoustic guitar accompaniment). No translation or analysis
accompanies the recording, as is usual with GRN materials. The Pueblo Indian Cultural
Center also has a three minute Isleta Tiwa audio clip on its website
(http://www.indianpueblo.org/19pueblos/language.html), simply as a sample of what the
Tiwa language sounds like70. No translation or metadata of any kind accompanies the
recording.

Archer (2001) should also be mentioned here, containing as it does twelve
traditional stories from Ysleta del Sur given in English. Like the Kiowa stories also
included in this volume (mentioned in section 3.1), these were collected by Elsie Clews
Parsons, sometime between 1915 and 1927. They do not appear to contain any Tiwa
language data.

Two efforts that have had elements of both research and community-oriented
focus have been those of Shannon Hiatt and of Erin Debenport. Hiatt (1985) is an M.A.
thesis from the University of Texas at El Paso that gives a narrative analysis of Tiwa texts
from all of the Tiwa Pueblos. All of these texts are from sources described in the above
three sections on Tiwa. While the bulk of the document gives the English translations of
tales, the thesis does also include one of the Taos Northern Tiwa stories from Trager

70 The website treats “Tiwa” as if a single language.
Hiatt’s stated original intention for the thesis was to collect Tigua tales for a cultural program at Ysleta del Sur, although her exact plan ran into roadblocks at the Pueblo. The work, however, is a nice compendium of Tiwa stories organized by themes and formatted for comfortable oral recitation.

Debenport has been working collaboratively with one of the four Tiwa-speaking communities which she identifies by the pseudonym San Antonio Pueblo. From this collaboration Debenport has helped to develop materials and lesson plans for the community’s language revitalization efforts. At the same time, she received approval to do research regarding language ideology, which would lead to a doctoral dissertation and other publications. Debenport (2009) is her dissertation in anthropology from the University of Chicago. In this work she considers the choices and decisions that community members make in developing an orthography and a dictionary for the San Antonio Pueblo language program as a reflection of the prevailing (and competing) ideologies in the culture surrounding representation of and accessibility to the language. The dissertation includes numerous example sentences and even a spontaneous text from a genre that is not otherwise well-represented in the literature. However, in the publicly accessible version of her dissertation, all Tiwa data are redacted in order to ensure the kind of control of information that she describes as being part of the Pueblo’s linguistic philosophy. Debenport (2010) is a distillation of her dissertation work that considers the Western notion of “universal property” and how the San Antonio community, and she as

71 Anyone quite familiar with the details of the Pueblos of New Mexico would be able to identify which Tiwa language and with which Pueblo Debenport is working, based on the metadata she gives. I describe her work here because it is at the end of the three sections on Tiwa in order to help maintain the desired ambiguity. Thus, the reader should not assume that she is writing about a Southern Tiwa language.
a field work researcher, have to work with it and around it in order to represent the Tiwa language in a culturally appropriate way. Debenport is also one of the authors of Ashworth et al (2011), which also includes a brief summary along the same lines.

Debenport’s research program is reminiscent of Paul Kroskrity’s on Arizona Tewa when compared to the other literature being reviewed here. Rather than focusing on the structural properties of language, she instead considers community usage of the language and the ideologies surrounding this use, a facet that is too little considered for most languages in the world. Thus while structurally oriented studies like the present one may make only limited use of Debenport’s research, especially considering the redaction of language data, her publications do bring up important points for evaluating the extra-linguistic pressures that have affected—and are affecting—language use and thence language structure. It should also be noted that Debenport has recently begun collaborating with and assisting the language revitalization program at Ysleta del Sur Pueblo. Although no publications have yet come out of this collaboration, it does promise a venue for future work.

3.7 **Towa**

Jemez Towa has a smaller body of literature than any of the above languages, probably owing to the conservative nature of the community. Fortunately, though, some of the work that has been done has been of decent quality. This is especially important since Towa is the only member of its branch of the family. Many scholars believe that
Pecos Pueblo may have spoken a language or dialect closely related to Jemez Towa\textsuperscript{72}, but since the few records of that language are questionable (see below), Jemez Towa remains the unique representative.

The earliest known recorded word-list comes from Lt. James H. Simpson’s expedition in 1849, which can be found in NAA manuscript 104-a (Gibbs 1852). This list has also been copied by scribes and exists as manuscript 1020 (Simpson 1896d) and manuscript 1026 (Simpson 1896c). The list contains 38 items consisting of basic terms for people, animals, body parts, and the indigenous names for Pecos and Jemez Pueblos. The language Simpson ascribes to “Jemez and Old Pecos”, although whether he consulted with any of the few survivors from Pecos who had migrated to Jemez in 1838 is unknown. The quality of the transcription is much the same quality as Simpson’s other word lists described above, but the forms are recognizably Towa.

The next wordlist within the BAE archives collected at Jemez is quite explicit in having been elicited from the last two survivors from Pecos. Colonel James Stevenson recorded eight words from these two men in 1887, which may be seen in NAA manuscript 1017 (Stevenson 1887), which is actually a copy of some original list created by Albert Gatschet and some other scribe. Unfortunately, in addition to being so short, six of the items are the names of Pueblos, which makes it difficult to determine much about the Pecos language. But, the two non-place names, the words for “fire” and “caterpillar”, appear to be akin to Towa in form while one of the place names appears to bear a locative suffix of the same form as the Towa locative suffix -kʷɑ. It is little to go on, but it does support the contention that Pecos may have spoken a Towa language.

\textsuperscript{72} See Ortman (2012: 151, endnote 1), however, for a suggestion that Pecos Pueblo may have spoken a variety of Tewa.
These sparse records by the earliest of collectors for the Bureau of American Ethnology are disappointing, to say the least. This would be made up for somewhat by the next document, NAA manuscript 1657 (Reagan 1907). Albert B. Reagan, later a professor of anthropology at Brigham Young University, worked as a government farmer at Jemez Pueblo from May of 1899 until January of 1901. During this time he appears to have taken the opportunity to make a study of the Towa language, the product of which is the above mentioned manuscript. It consists of a 58 page vocabulary list of approximately 780 lexical items arranged in alphabetical order according to the Towa form. In addition there is also a 90-page treatise on Towa grammar, the earliest attempt at a grammatical description of any Kiowa-Tanoan language to my knowledge. This treatise is divided into eleven chapters organized by lexical categories: four chapters on nouns, one on adjectives and numerals, two on verbs, one on adverbs, one on prepositions, conjunctions, and interjections, and one on sentence construction. A twelfth chapter consists wholly of sentence and text examples. Each of the grammar chapters ends with a short selection of illustrative Towa sentences and most also include a short vocabulary list. There is also a vocabulary list that follows the twelve chapters, including all of the lexical items from the preceding document (this is in addition to the full 780-word vocabulary mentioned previously). The twelfth chapter, consisting of examples, includes 91 independent sentences, a selection of a conversation reported to the author by a consultant, a formal ceremonial inauguration speech by the newly elected governor that Reagan recorded first-hand⁷³, and three songs. All of these texts include English translation.

⁷³ Reagan makes no comment about his transcription practice, but it appears that he was able to write down the contents of the speech either on the fly and/or by memory. That there were sections that he missed is attested by occasional “XXXX” sequences in the text.
Reagan’s grammar treatise and vocabulary represent a valiant effort for the time, considering his training. It is apparent, however, that the author was not educated in linguistics and his description of the language is heavily cast into the mold of the pedagogical tradition for Western European languages. Along with certain phonological and morphophonological characteristics of Towa, the grammar presents a language that would be wholly unrecognizable to the modern Kiowa-Tanoanist if not for the frequent language examples. Most notably, Reagan fails to recognize the pronominal indexation proclitics and reports that verbs do not agree in person or number with any of the arguments! To account for the phonological content of these proclitics, he comes up with an account of “euphonious changes” at the end of nouns and adjectives, alternations at the end of words (but, importantly, not verbs) that are phonologically motivated by the following sound. A close examination of his description and the examples he gives to illustrate reveal that what he is observing are actually the pronominal proclitics phonologically attaching to the immediately preceding element74. Reagan also misses the inverse marking on nouns—along with the concomitant complex noun classification—and several grammatical distinctions that are indicated primarily by tone and/or vowel length. Thus, his example sentences are much more useful than his actual analysis.

Reagan’s transcriptions are actually fairly good compared to other documents in the BAE archive. Like most other documenters of the time, he fails to capture vowel length, tone, or ejective consonants. Unlike others, though, he develops a regular system for transcribing different vowel qualities and thus represents vowels nearly phonemically. It helps that he includes a key to his transcription conventions in the grammar treatise. He

74 More on this phenomenon in later chapters.
misses a few nasal vowels, but otherwise he usually does a good job at showing nasalization. The bigger problem within the grammar treatise is Reagan’s cursive handwriting, which tends to be no clearer for his Towa transcriptions than for his English writing. His penmanship is not truly terrible, though, and with only a little practice—and by recognizing repeated forms in the Towa data—the reader can accurately access the document. His full 780-word vocabulary of the language is fortunately written a little more clearly. Taking the above-mentioned shortcomings into account, a researcher studying Towa may find some information of interest in this document.

The next researcher to address Towa in the early 20th century was John P. Harrington, although he never produced any publications specifically on Towa. Harrington (1916), his huge ethnogeography of Tewa, includes a fair number of Towa forms consisting of some place names and miscellaneous other vocabulary items. This work also contains the only publication of the few forms that are ostensibly Pecos that Harrington recorded. Some of Harrington’s other publications on Kiowa-Tanoan languages also contain a sprinkling of Towa forms as a comparison to Tewa and Tiwa, but none of these show any significant accumulation.

This dearth of publication does not entail that Harrington did no research on Jemez Towa. A full three reels constituting almost 1,500 microfilm images of his collected field notes are given over to the language (Mills 1981). Reel 33 contains 188 images (at one to two notebook pages per image) of linguistic and ethnographic notes.

75 Brigham Young University has Albert B. Reagan’s research papers archived in the L. Tom Perry Special Collections, which includes material from Jemez. Unfortunately I found out about these papers too late to get a hold of and review them for this dissertation write-up. A review of the contents of the collection (here: http://files.lib.byu.edu/ead/XML/MSS250.xml?CISOROOT=/EAD&CISOPTR=1354&filename=1355.url) suggests there may be little of linguistic interest, however.
This is followed by a slip file of index card notes that spill over into reels 34 and 35, which add up to approximately 10,000 individual note cards. About a third of these cards may be copies, though. The last portion of reel 35 includes 135 pages of census records. While nowhere near as extensive as his documentation of Rio Grande Tewa or any of the Tiwa languages, Harrington’s Towa notes still constitute a rich collection of linguistic data that have yet to be used to their full potential.

The sparseness of research on Jemez Towa would continue on through the 20th century. Elsie Clews Parsons published an ethnography of Jemez of just under 150 pages (Parsons 1925a). The manuscript is comparable in form to her other ethnographies, with occasional poorly transcribed indigenous words throughout, but little on the language itself. Alexander Lesser was able to record 11 pages of notes on kinship terms in 1929 (Lesser 1929b). Much like his notes on the other languages, he includes forms for first-, second-, and third-person pronominal possessors and has a fairly decent transcription. The same year, Blanche Harper completed an M.A. thesis on Jemez for a degree in archaeology at the University of New Mexico (Harper 1929). This thesis is divided into three parts. The first section provides a history of Jemez Pueblo based on previous research and includes accounts of how the remaining Pecos survivors came to live at Jemez. The second section addresses the language and gives a large number of vocabulary items and short phrases and sentences organized by semantic domains. The third section is an ethnography of various aspects of traditional Jemez life. Harper’s account of linguistic material is limited to the lexical for which her work is comparable to Reagan’s in terms of quality. She appears to be fairly consistent in the transcription conventions she uses, but fails to account for the usual phonological features.
The same cannot be said of the transcriptions in Cook (1930). Another M.A. thesis from the University of New Mexico, Sarah Cook provides an ethnobotany for Jemez to complement Robbins et al.’s (1916) for Tewa. The document consists of a front section on the history and ethnography of the Jemez people (which actually makes up about two-thirds of the whole thesis) followed by a ten-page list of native plants ordered alphabetically according to their Latinate genus. For each plant species or genus, Cook provides a short description of the traditional use by the Jemez people and for many gives the native Towa term. Unfortunately the transcriptions are poor, but many may still be interpretable where the word or at least the constituent morphemes of the botanical terms can be found in other sources. Finally, Newman and Ayer (1950) collected a short list of vocabulary and a paragraph-length elicited narrative in their Indian School audio recordings. This recording is archived at Indiana University in the Archives of Traditional Music.

The middle of the twentieth century saw a turnaround in the study of Towa that would finally begin to reveal much more about its phonological and grammatical structure and permit comparison with its sister languages. This turnaround began in the 1950s with unpublished fieldwork by a young Kenneth Hale, one of the most renowned linguists of the late twentieth century. Later famed for his skill at learning languages, one of his earliest acquisitions was apparently Towa, which he learned from a Jemez friend while in high school. In graduate school he worked with speakers of Towa in 1956 and 1957, collecting 400 pages of written notes and recording 9.5 hours of elicitation (Hale 1956, Hale 1956-1957. These field notes consist of numerous verbal paradigms, vocabulary, and elicited sentences and represent the most comprehensive source of Towa
data outside of native speakers. Through this work, Hale was able to establish much of
the basic phonology and morphology of the language and identify important
morphophonological alternations, although these findings would exist only in limited
circulation for a long time. Hale’s only publications on Towa were his few comparative-
historical studies on Kiowa-Tanoan (see section 3.9 below) and he seems never to have
returned to the language for further research. Hale freely made his field notes available to
Kiowa-Tanoanists before his untimely death in 2001 and they otherwise appear to be
archived with his other Amerindian field notes at MIT. Copies of his audio recordings
have long been also housed at the Archives of Traditional Music at Indiana University
and can be acquired in digital format. While these materials do not appear to contain any
running texts of the language and he had not developed a full understanding of tone and
laryngealization in his written analysis, his notes are an important resource for anyone
who does work on Towa and indeed have proven influential in subsequent research.

Just a few years after Hale did his consultant work, Constance Martin produced a
Master’s thesis in anthropology at the University of New Mexico that focused on Towa
phonetics and phonology (Martin 1964). She lays out the phonemic inventory of the
language fairly accurately, describes the allophonic variation in sounds, provides minimal
and near minimal pairs illustrating the contrastive distribution of phonemes, and details
the phonotactic patterns of the language. Martin does miss the three-way tone
distinction—she posits only two phonemic tones—and does not have a well-enough
developed analysis of the morphology to capture numerous phonological alternations or
to realize that certain sounds only occur in morphophonologically derived environments
(cf. the “L-effect” that Hale describes in his field notes, described in chapter 6.7). It is,
however, the first good description of any part of Towa structure to be published in any capacity.

Martin’s M.A. thesis was followed up a decade later by another M.A. thesis from the University of North Dakota. Beatrice Myers subsequently published her thesis as a working paper for the Summer Institute of Linguistics (Myers 1970). Her work complements Martin’s to some extent by attempting to describe the morphosyntax of Towa, with a particular eye towards order of elements in basic phrase structure. She clearly lays out the sets of pronominal proclitics that attach to verbs and identifies the inverse marker on nouns, but she does not catch the noun class system and her inattention to phonology—including tone—leaves her account of the rest of the verbal morphology severely wanting. Still, she provides three short texts of the personal narrative genre with interlinear translation, numerous example sentences, and identifies several grammatical morphemes. Her publication is easily overshadowed by the next work to be done on the language, but for its time it represents another step towards a description of Towa grammar.

In the early 1990s, Jemez students at the University of Colorado worked with linguists as consultants on language projects until conservative ideologies at Jemez Pueblo regarding language and literacy brought this to an end (Laurel Watkins, personal communication). In particular phonetician Alan Bell and one of his students, Rebecca Heins, undertook detailed phonetic and phonological studies of the language, research which addressed vowels, consonants, and suprasegmentals using instrumental and

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76 Her transcription of segmental phonemes is adequate though.
77 Laurel Watkins also worked with these students. Watkins gave a conference paper or two based on this research, but never published anything from it, undoubtedly out of respect for Puebloan language ideologies.
acoustic studies based on recordings. Bell and Heins (1993) is an abstract of a talk on Towa vowels that the authors gave for the Acoustical Society of America. Unfortunately they do not appear to have published a paper out of this and the abstract is little detailed. Bell (1993) describes tone and stress in the language. While not yet the final word on suprasegmentals in Towa, the article does show quite an advancement in understanding tone in the language compared to earlier studies. The falling tone is established, as is its mid tone allophone, and the analysis of the tones as more of a “pitch accent” than a straight tone system\textsuperscript{78} is clearly laid out. Finally, Heins (1994) is a Master’s thesis which makes an instrumental and acoustical analysis of stop consonants in Towa, particularly comparing and contrasting the voice onset time and release features of voiceless, voiced, and ejective stops. She also compares the articulatory features of the palatal stop (represented in the literature variably as /tʰ/ and /kʰ/) with the palatalized allophones of the velar stops and considers the realization of phonetic nasal stops following nasal vowels and the effects of word length on consonant realization. Heins’ work represents the kind of phonetic study that is needed for all of the sounds of all of the Kiowa-Tanoan languages. For the researcher not as interested in the finer points of the phonetic analysis, the thesis also includes a list of the transcribed corpus of forms that Heins used for her study, especially valuable for the quality of the transcriptions compared to previous works on the language.

Contemporary to the work that was being done at the University of Colorado, two other graduate students were also engaged in linguistic research on Towa and would with

\textsuperscript{78} As Hyman (2009) clearly discusses, the distinction between “pitch accent”, “tone”, and “stress” systems is a gradient one, “pitch accent” in particular being merely a label of convenience to cover a range of patterns that don’t really have a typological prototype.
their respective dissertations provide the best descriptions of the language to exist at present. The title of Robert Sprott’s doctoral dissertation from the University of Chicago suggests that he looks at Towa syntax (Sprott 1992). In fact the dissertation has a brief description of phonology, a fair amount of morphology, and would be more rightly said to be focused on morphosyntax. Sprott does a fair job at surveying the pronominal proclitics, the noun class and number marking system, important aspects of morphophonology, the voice system, noun incorporation, and numerous other constructions, including complex clauses. His dissertation also includes three texts with interlinear morphemic translation, all Towa translations of Biblical stories. All of this makes Sprott’s work a very rich resource for understanding the language that goes well beyond any of the published work produced to that point. His representation of the language is fairly accurate except in tone, which by his own admission, he had not quite figured out at the time the dissertation was produced. He seemed to be aware that there is a contrast between high and falling tone (and between those and low tone), but his ear could not pick up on the contrast. Luckily, rather than completely ignoring it, he opts to mark those syllables he perceives as accented (i.e. with a high or falling tone). Given the pitch system of the language and concomitant laryngeal effects, which Sprott does often write, the tone pattern of many words can be recovered from Sprott’s transcription.

Sprott’s dissertation is strongly complemented by a later dissertation by Yukihiro Yumitani of the University of Kansas (Yumitani 1998). Yumitani worked with Towa language consultants from 1987 to 1992 and again in 1997 and studied Ken Hale’s field notes on the language to produce what is probably the most detailed and useful work on Towa. His dissertation does not delve into Towa phonetics very much, but he goes in-
depth into the phonology, both elaborating on previously described patterns and accounting for other phonological and morphophonological alternations that had yet to be addressed. He also arrives at an account of Towa tone and laryngealization patterns which, if not the end of the story, is at least closer to a coherent picture than any others have yet to produce. His survey of morphology is nearly exhaustive as he complements Sprott’s description of argument indexation, noun class and number marking, and numerous small topics. More importantly, he takes on the often subtle verb stem inflection for tense, aspect, and mood which had yet to receive the attention it deserves. His dissertation also provides a text, albeit a short one, with interlinear morphological translation. Devoting so much to the phonology and morphology, though, he is not as prolific on the subject of morphosyntax, for which researchers are often better off consulting Sprott (1992). Between these two works, Towa quickly went from being the most understudied of the Tanoan languages to the one with the best published grammatical description, although not quite on par with the available descriptions of Kiowa.

Since the above dissertations, no other dedicated work on Jemez Towa has appeared to my knowledge. The Global Recordings Network described in previous sections does include a 26 minute audio clip of Towa, a mix of prose text translating a Biblical tales and some hymns (http://globalrecordings.net/language/3824). The audio quality is good, but with no direct translation and the lexical resources being what they are, it will take some effort to optimally analyze this recording. The same could be said of another recording of Towa, found on the Pueblo Indians Cultural Center website (http://www.indianpueblo.org/19pueblos/language.html). This four minute audio file is
on an unspecified topic and is intended, like the other audio clips on the site, to allow
visitors to the site to hear what the Pueblo languages of New Mexico sound like. These
audio clips are valuable as running texts among the currently publicly available resources
on Jemez Towa, but will take an effort on the part of someone well versed in the
language to access the content.

Fortunately, despite being spoken in only a single Pueblo community, Jemez
Towa is perhaps one of the strongest indigenous languages of New Mexico in terms of
intergenerational transmission and has somewhere between 1,000-2,000 fluent speakers.
While this security does mean that the Jemez community is in no rush to enlist the aid of
linguists in documenting the Towa language—indeed, it can be expected that further
work on Towa will continue to be slow and sporadic in appearing—it does of course also
bring with it the hope that the language will endure for some generations yet.

3.8 Piro

The Piro language (not to be confused with the Arawakan language of the same
spelling) ceased to be spoken around the end of the 19th and beginning of the 20th
centuries. As the reader might guess from the dates of documentation in the Southwest
described for the other languages above, this means there are very few records of this
language. Indeed, in terms of direct consultation with fluent native speakers, there exist
only two short word lists and one short text, all collected using the poor transcription of
the era. Being so far from the core Pueblo area, on the Texas-Mexico border, and not
particularly near any other large Native American communities meant that few of the
Bureau of American Ethnology expeditions made it down to the Piro region while the language still had speakers.

The first wordlist was collected in 1852 by John Russell Bartlett of the U.S. Boundary Commission during the same expedition on which he collected the Tiwa and Kiowa lists described above. The original list is to be found in NAA manuscript 1627 (Bartlett 1861), along with Bartlett’s commentary. It consists of 175 Piro words (out of a list prompt of 180 items) plus six pages of commentary. Within this write-up, there are fourteen more lexical items, all higher numerals—teens and tens— that are not included on the main list, giving a total of 184 Piro items. NAA manuscript 458b (Bartlett 1852b) is a copy of the list without the commentary (and thus also without the additional numerals) and without six items in the main list which were identifiable as Spanish loanwords. The English prompts on this 180 word list are also slightly different such that in the end it gives only 167 Piro items. This 167 word list is recopied in NAA manuscript 458c alongside the list of Tiwa seen in NAA manuscript 458a. Within his commentary in the original document, Bartlett describes his elicitation procedure in some detail and gives information about his two male consultants. Among the other information he gives, he does mention that there is a difference between men’s and women’s speech and even that his consultants gave him both forms for words that had a distinction. Unfortunately, he did not record both forms since they tended to differ only in aspiration and tone, of which Bartlett failed to recognize the importance anyway. His transcriptions are actually fairly decent for the time, although perhaps not as good as his transcription of Kiowa (see

79 Within the main word list, the numerals given are 1-12, 20, 40, 100, 400, 1000. The numerals listed in the commentary are 13-18, 20, 21, 30, 50, 60, 70, 80, 90, 100, 400, 900, 1000. Note that the numerals 20, 100, 400, and 1000 are given in both locations. Also, the Piro word for 30 is not explicitly translated, but its position on the page and the composition of the word strongly suggest this form-meaning correspondence.
3.1). With knowledge of other Kiowa-Tanoan languages, especially of Southern Tiwa, the list is interpretable to a fair degree.

The second wordlist of Piro was collected by BAE ethnographer James Mooney in 1897 on an expedition to Senecú and Ysleta del Sur. While Mooney’s short ethnographic notes are gathered in a small notebook archived as NAA manuscript 1953 (Mooney 1897), his linguistic notes on Piro are actually penciled onto NAA manuscript 454, a copy of Bartlett’s Kiowa wordlist (along with notes on Ysleta Tiwa and Plains Apache). Considering Mooney’s normally atrocious penmanship, this makes the document extremely messy to try to read, nor does it help that the Piro is crammed into the narrow left margin. Nevertheless, Mooney transcribes approximately 105 Piro words. Since the 180 English prompts given in manuscript 454 are almost all the same as the list Bartlett used to collect his Piro data, there is a great deal of overlap in the words that he and Mooney record⁸⁰. Mooney’s transcription is no better than Bartlett’s, but since he does use a very different transcription system and hears certain sounds differently, this permits the careful modern analyst to develop reasonable guesses as to the actual phonetic value of the Piro data. Unfortunately, it does not appear that any researchers have ever made use of Mooney’s list in any publications, meaning such a cross-reference has yet to be attempted.

Independent of the BAE agenda to document native languages in the newly acquired American territory, some Piro was also recorded in a Mexican effort. La Sociedad Mexicana de Geografía y Estadística published in 1860 a volume containing the

⁸⁰ NAA manuscript 454 has the same 180 word list as manuscript 458b, which is slightly different than the 180 word prompt that Bartlett originally used for his Piro word list. Notwithstanding those few prompts for which each collector recorded a wholly distinctive word, this does mean that there are a couple of words that Mooney records that Bartlett did not.
*Pater Noster* ("Lord’s Prayer") translated into 52 languages indigenous to Mexico, including Piro (Sociedad Mexicana 1860). The volume was revised almost three decades later to encompass 68 languages (Sociedad Mexicana 1888), but still retained the Piro text. This is the one and only connected discourse—and indeed the only set of full sentences—ever collected on the language. No information is given regarding the translation and recording of this text and no analysis of it has ever been done to my knowledge. The transcription system appears to make use of conventions typical of written Spanish and, like the American efforts, glosses over phonetic (moreover, phonemic) features that were probably present in the language. It is probable that the text represents most vowels somewhat more consistently than Bartlett’s and Mooney’s lists though.

The only other linguistic data available for the Piro language consist of place names recorded in Spanish documents and still retained in central New Mexico. As such, all subsequent materials dealing with Piro rely on the data above. Bartlett and Hodge (1909) is the first academic publication on Piro and consists of Bartlett’s 175 word list and most of his commentary\(^{81}\) plus an introduction by F. W. Hodge of the Bureau of American Ethnology which describes the history of the Piro people. Hodge’s introduction also includes the Piro Lord’s Prayer from the collections mentioned above. This article was followed in the same year—actually, in the very next issue of the same journal—by a lengthy piece by John Peabody Harrington which also makes use of Bartlett’s word list (but not of the Lord’s Prayer text). Harrington takes an analytic approach, describing the linguistic context for Piro, supporting Powell’s (1891) classification of the language as

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\(^{81}\) But unfortunately fails to include the additional numbers that Bartlett had written in his original notes.
Tanoan and suggesting a special affinity to Tiwa. He also provides a comparative
wordlist giving Bartlett’s Piro forms next to forms from Ysleta del Sur, Isleta, Taos,
Jemez, and San Ildefonso. Harrington then goes word-by-word and attempts to analyze
Bartlett’s list in a Kiowa-Tanoan context (and with internal comparison amongst Piro
forms). By this method, he is able to roughly identify some morphological constituency
within the Piro data and come up with something of a phonemic inventory. He is limited
by the quality of the available data and this was done quite early in his study of Kiowa-
Tanoan languages, which must be considered in a reading of this paper. Harrington does
also include some of the Piro place names (taken from Bandelier 1892) and mentions the
existence of Mooney’s wordlist and the Lord’s Prayer, but includes none of these in his
analysis. Harrington also describes having made a trip to the Senecú area near El Paso,
but failed to find any remaining Piro speakers. Notes for the development of this paper
can be found amongst Harrington’s material on Isleta in the microfilm collection (Mills
1981), but this constitutes only fourteen frames on the microfilm and is not any more
informative than the article itself. Harrington’s article, however, remains the best analysis
of Piro data to appear to date.

With so little data available on Piro, scholars appear to have closed the case on the
language for many years. Schroeder (1964) is the next piece to try to address the Piro
language at all, although his aim is not to analyze the linguistic data itself. Instead he
evaluates historical documents to determine that the peoples of the Saline Pueblos
amongst the Manzano Mountains, the people called the Tompiros in early Spanish
documents, spoke the same language as the Piros who lived along the Rio Grande. This
he must infer from comments in the Spanish records since no Tomepko language data was ever collected aside from the names of the Pueblos.

The next, and last, publication on Piro is Leap (1971). William Leap, who had done his dissertation research on Isleta Southern Tiwa, takes a critical eye to the Piro data and casts doubt on its membership in Kiowa-Tanoan and especially on the close affinity to Tiwa that Harrington had suggested. In his prose, Leap appears to be taking Harrington to task on the Piro data. While Harrington’s analysis of Piro certainly has its problems, Leap seems to overlook the fact that Harrington did not actually collect the data and thus that the transcription of the Piro is not actually comparable to the transcription of the other Tanoan languages that Harrington includes. This, among other oversights and oversimplifications in his analysis, considerably weakens Leap’s arguments. The one valuable point that Leap does bring up is the possibility of Tiwa influence on Piro in the El Paso area. Considering the close proximity of the Piro settlement of Senecú and the Tiwa Ysleta del Sur and the moribund status of the Piro language—and of the Piro as a culturally distinct people—at the time the linguistic data were recorded, the possibility of language contact effects must be considered. However, I do not otherwise agree with Leap’s evaluation of the data and would maintain at least that Piro is Kiowa-Tanoan.

While the available Piro data is too poor to seriously incorporate into this comparative-historical study outside the occasional footnote, more work could realistically be done on the language. Cross-referencing Bartlett’s and Mooney’s wordlists with each other and with the Piro Lord’s Prayer and with comparison to extant Kiowa-Tanoan languages could lead to more accurate guesses as to the actual phonemic forms of words. Further, some morphosyntactic analysis could be done on the text and on
the wordlists in the light of our current knowledge of the grammar of the language family. While we will now never know exactly what the Piro language was like when the Spanish first arrived in New Mexico, the data does provide the possibility of reaching at least a closer approximation than we currently have.

3.9  **Comparative-Historical, Typological, and General Literature**

There have been only a bare handful of studies of the Kiowa-Tanoan languages (or some subset of them) using the linguistic comparative method or some similar empirical analysis and seeking to establish regular correspondences and reconstruct some ancestral language. But, on top of these there have also appeared far more numerous articles and works that discuss or hypothesize on the linguistic classification of the languages, survey the family, or even just present a few linguistic forms from one or more of the languages without particularly focusing on them. This section will seek to review all such literature that does not take an individual Kiowa-Tanoan language as its topic. Many of the pieces reviewed in the preceding sections could also be placed here insofar as they might mention data from more than one member of the family, but I will not take space to repeat this aspect of such works here. Note too that many of the finer details of the more data-rich of the works to be reviewed here will be engaged in subsequent chapters as I undertake my own comparative-historical analysis. Like the above reviews, this section will proceed in a largely chronological order in order to trace the lines of thought that have circulated through the ethnographic and linguistic literature.

The individual linguistic groups in the Kiowa-Tanoan family have long been recognized by the native community members themselves, and by the earliest Spanish,
French, and American explorers. Classification of these languages into linguistic phylogenetic stocks in the Western sense did not begin until the second half of the 19th century, as American scientists were sent west to survey the new territorial acquisitions by the US and the people inhabiting them. Within this tradition, the earliest reports only recognized the affinity among communities that speak a language of the same branch of Kiowa-Tanoan. Thus, in Schoolcraft’s (1853, 1855) volumes III and V documenting some of the tribes of the United States, early American ethnologist Albert Gallatin mentions Kiowa (“Kiaways”) as a distinct language group (Schoolcraft 1853: 402), while New Mexican governor William Carr Lane groups six out of seven of the Tewa Pueblos together as speaking “Tay-waugh”, groups all of the Tiwa Pueblos together as speaking “E-nagh-magh”, and puts Jemez and Pecos together without giving a name to the language (Schoolcraft 1855: 689). Whipple et al. (1855), Buschmann (1858:432-433), Latham (1862:444) also all report on the Kiowa a few years later, not affiliating it genetically with any other language.

Buschmann (1858) provides a very detailed overview, in German, on the peoples and languages of western North America and of New Mexico specifically. His account includes coverage of the Tanoan and of the Kiowa peoples and languages and contains a small number of examples as well as comparative wordlists of each of the four major branches of Kiowa-Tanoan, although Kiowa is not ever put in comparison with the Tanoan languages and Buschmann does not make any special grouping of Tewa, Tiwa, and Towa as opposed to Keresan and Zuni. Most of his data are from sources described in the preceding literature review.

82 He misses Tesuque.
Latham (1862) includes an original short 38-word list of Kiowa and suggests a similarity to “Paduca” (i.e. Uto-Aztecans) languages. The very next wordlist he gives in the volume consists of 47 forms from Whiting’s list of Tesuque Tewa (Schoolcraft 1853: 446-459), although he does not actually propose a relationship between the two languages. Twenty years after that, Gatschet (1876, 1879) describes the language groups of New Mexico, including Tewa, Tiwa, and Towa, while Keane (1878: 479) reports Lane’s earlier groupings. None of these authors formally put Tewa, Tiwa, and Towa together. Gatschet (1876) does, however, include a couple-page description (in German) of each Isleta Tiwa, Jemez Towa, Rio Grande Tewa, and Taos Tiwa as well as Kiowa, and includes examples from each. He does note the similarity of the Tanoan languages to each other, but does not delve too deeply into potential genetic relations although he also presents data from six other Southwestern languages for contrast. In order to work towards a classification, though, Gatschet includes a 17 page comparative vocabulary list with words from all 12 languages covered in the volume placed side by side. He also gives separate words and phrases from a subset of the languages, including Tewa, in order to provide further comparison.

Powell (1878) appears to be the very first to recognize the relationship among the Tanoan languages, mentioning Sandia, Téwa83, San Ildefonso, San Juan, Santa Clara, Pojoaque, Nambé, Tesuque, Sinecú, Jemez, Taos, Picuri[s], and thus capturing all three branches of the family, including Piro. He calls this group “Taño”.

Powell was soon followed by Gatschet (1879) who labeled the family “Rio Grande”. He gives a short account of some of the features of the languages and presents a

83 This appears to refer to Tewa Village, First Mesa.
211 word list of Isleta Tiwa, Arizona Tewa, Taos Tiwa, Towa, and two lists for Rio Grande Tewa, one San Juan and one Los Luceros. These are taken from the same archival BAE lists described in the previous sections, most of them collected by or under the direction of Oscar Loew. They stand beside about three dozen other Western languages for comparison in Gatschet’s article. In addition to this comparative list, Gatschet also gives an appendix that includes transcriptions he himself collected: a few forms from Sandia Southern Tiwa, from Los Luceros, a longer list from Tesuque Tewa, a short list and a short song in Taos Tiwa, and a few words and phrases in Jemez Towa. These lists probably constituted the most comprehensive inventory of Tanoan forms to be published at the time and provided a basis for claiming the relationship among the Tanoan languages.

Powell (1880) is a little more comprehensive than in his 1878 article, taking into account all of the contemporary Tanoan Pueblos of New Mexico, Arizona, and near El Paso. In this publication he calls the grouping “Téwan” and breaks it into five main “mutually unintelligible” divisions: Taño [Southern Tiwa], Taos [Northern Tiwa], Jemes [Towa, including Pecos], Tewa/Tehua, and Piro. Gatschet (1896), NAA manuscript 1025 among the BAE documents, appears to be a handwritten copy of Powell’s (1880) classification. Gatschet (1882a: 258-259) follows Powell’s (1880) five-way division, but calls the family “Rio Grande Pueblo”\textsuperscript{84}. He also points out the closeness between “Taos” [Northern Tiwa] and “Taño” [Southern Tiwa] and mentions a couple of facts of the grammar (from Tewa: a demonstrative pronoun “na” (\textit{nø}) and a suffixed demonstrative “-e, -ê, -a” (\textit{þ})). Because of the presence of the Tiwa and Piro near El Paso, both Powell

\textsuperscript{84} Whether by a mistake of Gatschet himself or by the article typist, Jemez is given as “Temes” and Picuris Pueblo as “Ticori”, although “Picuris” referring to the tribe is spelled correctly earlier in the paragraph.
(1880) and Gatschet (1882a) believe that the family used to extend along the Rio Grande
down into Chihuahua. This hypothesis was dispelled, of course, as American researchers
learned of New Mexican history.

It was finally Powell’s (1891) opus categorizing all of the languages of North
America and Mexico that would coin the family name “Tañoan” for Tiwa, Tewa, Towa,
and Piro. This work simply cites the above sources and does not explicitly re-avow or
disavow Powell’s (1880) five-way division. Kiowa is given as a language isolate of the
“Kiowan” family and there is no suggestion at all that the groups may be related. Powell
is also the first published source to posit a potential genetic relationship between Tanoan
and Uto-Aztecan, stating that “a considerable body of words hav[e] Shoshonean
affinities” (p. 122), although he hedges his bets awaiting further evidence. Similarities
between Kiowa and Comanche, on the other hand, which Powell reports from Whipple et
al.’s (1855) sources, are purported to be due only to language contact, so the Kiowa-
Tanoan connection is not made via a potential Uto-Aztecan relationship either. It should
also be remembered that the above classifications are at best based on the BAE word lists
described in the preceding sections and often by only first impressions and hearsay, so
the couple of errors to be found in Powell can hardly be wondered at. While it would be a
while before Kiowa and the Tanoan languages were proven to be related, work towards
establishing this relationship, refining Powell’s classification, and searching for new
relationships would begin appearing only two decades later.

John P. Harrington was one of the first researchers to seriously work with more
than one language in the family and indeed he would end up working with virtually all of
them. It shouldn’t be surprising therefore that he was the first to make innovative
suggestions. At the end of the first decade of the 20th century, however, he was only a
year or two into his New Mexican fieldwork and had primarily consulted with Rio
Grande Tewa and Taos Northern Tiwa speakers and only a little with speakers of other
languages. This is reflected in the publications described in 3.2 and 3.4 especially, most
notably his grammatical sketches of Taos Tiwa and Tewa. Harrington (1910c, d) both
give a scant handful of words in Harrington’s own transcription from Towa and Tewa,
while Harrington (1911) gives the words for “two” and “three” in a number of
Southwestern languages, including Kiowa, Tewa, Piro, Towa, Taos Northern Tiwa, and
Southern Tiwa (from both Isleta and Ysleta del Sur), based on his own and others’
recordings.

No comparative work among the Tanoan languages had been formally
undertaken, at least in print, but Harrington (1910a)—his sketch of Taos Tiwa—makes a
few revisions to Powell’s classification: he incorporates Powell’s (1880) “Taño”, Taos,
and Piro as three dialect groupings of a single “Tiwa” language85, thus effectively
establishing “Northern Tiwa” versus “Southern Tiwa”. The inclusion of Piro is more
contentious, as noted in 3.8. He also introduces the name Towa86 for the speech of Jemez
and Pecos, which he divides into two respective dialects. Also, whether Harrington
himself innovated it, or if it was simply a development that had been circulated in the
preceding 20 years, he gives the family name as Tanoan87 in place of Powell’s Tañoan.
This paper thus sets much of the classification and terminology that has continued to be
used to this day, the status of Piro notwithstanding.

85 He recognizes that each Pueblo speaks a different dialect even within this three-way division.
86 This is based on the Towa word tōwā (ti·wā?), which Harrington says means “native, town, village”.
87 Harrington does specify that the stress is on the first syllable: Tānoan. When the pronunciation shifted to
the penultimate syllable used today, Tanōan, is uncertain.
It was in these early days of his New Mexican research that Harrington also made another important observation: Kiowa and Tanoan seem to have a lot of similarities. He notes that such similarities had been reported before, but never really examined. Based on the Kiowa wordlist that appears in Mooney (1898), poorly transcribed though it may be, Harrington (1910b) points out the similar sound inventory and gives a list of almost 70 similarity sets between Kiowa and all three branches of Tanoan. He does not offer any commentary nor does he attempt to establish regular sound correspondences, so the article remained a speculative piece. It did, however, lead researchers to begin considering a relationship between these Pueblo and Plains peoples.

Harrington continued to note the similarities between Kiowa and Tanoan even after he had done his own fieldwork on the former. Several entries in Harrington’s (1928) *Vocabulary of the Kiowa Language* include a potential Tanoan cognate, mainly from Tewa. Again, not having done the comparative-historical legwork to prove a connection, this was only a hypothesis at the time. Most of the compared items in this and the preceding article would however prove to be cognate.

Actually, while the few other specialists in Kiowa-Tanoan languages would take some decades to come around to accepting the connection, linguists of the era were showing an interest in establishing deep phylogenetic relationships among Native American language families. Such linguists were more willing to consider the Kiowan-Tanoan link. Edward Sapir, one of the greatest American linguists of the early 20th century, was one who took up the task of classifying all the American languages. He had little to say in particular on Kiowan and Tanoan, having not studied them in depth, but he included them both in his Aztec-Tanoan language stock, along with Uto-Aztecan in Sapir
(1921) and with both Uto-Aztecan and, questionably, Zuni in Sapir (1929). Within this classification, the Kiowa-Tanoan relationship is not only accepted, but also seen as being closer than the relationship between either Kiowan or Tanoan and some other language family. Sapir is also the first to firmly assert a relatively close relationship between Kiowa-Tanoan and Uto-Aztecan, a hypothesis that others would soon investigate and attempt to support with empirical data.

Of course during this time period, there were no other linguists specializing in any Kiowa-Tanoan language to take up Harrington’s argument. It wasn’t until the mid-1930s that a specialist other than Harrington would come along, when George Trager began his research of Tiwa. Trager opted to remain reserved in his opinion on the relationship of Kiowa and Tanoan, not refuting it, but also not undertaking a comparison between Tiwa and the vast lexical materials of Kiowa and Tewa that Harrington had made available.88 This, even though one of Trager’s earliest publications addressed the phylogenetic relationship of Tanoan and he had written a handful of other comparative-historical articles.

Shortly after he began his work on Tiwa, Trager collaborated with prominent linguist Benjamin Lee Whorf, a specialist in Hopi and Uto-Aztecan languages. Whorf and Trager (1937) is a proposal of a relatively close relationship between Uto-Aztecan and Tanoan, a stock that has come to be known as Aztec(o)-Tanoan. While not a new proposal—Powell, Harrington, and Sapir had all considered it as well—this was the first

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88 The idiosyncratic transcription symbols used in Harrington (1928) may have made it off-putting as a resource, although there is a phonetic key by which the symbols may be easily interpreted. Of course, Trager cites Harrington’s largest publications very little, which may mean that he simply did not have convenient access to them. Harrington’s personality was undoubtedly off-putting as well and professional jealousy may also have been a factor.
study to actually make a data comparison in print. Based on 140 lexical comparisons, of which they list only 102, Whorf and Trager are able to propose sound correspondences between Uto-Aztecan and Proto-Tanoan and to propose a reconstruction of the sounds of Azteco-Tanoan based on these correspondences. Note that Trager had very little knowledge of Tewa and even less of Towa at this point, so their “Proto-Tanoan” appears to differ little from Taos Tiwa. Unsurprisingly given much more data from Uto-Aztecan than from Tanoan, they state that “[t]he structure of AT appears to be much like that of UA” (p. 618), although the consonant inventory is more akin to that of Tanoan.

Of a relationship to Kiowa, they recognize the similarities pointed out by Harrington and are willing to concede its relatedness, but they suggest that the connection is more distant than that between Uto-Aztecan and Tanoan and prefer to leave Kiowa out of their Azteco-Tanoan stock for the time being. It is of course a prudent move, but given that any discussion of “Proto-Tanoan” was premature considering the lack of Tewa and Towa forms consulted, and given the ultimate conclusions regarding Kiowa’s very close affinity to Tanoan, it only underscores the problems with this article. Unfortunately, with two big names in linguistics behind it, the Azteco-Tanoan hypothesis was all too readily accepted and continued to be cited and propagated despite the lack of any further forthcoming evidence or arguments.

Neither Trager nor Whorf—the latter of whom passed away shortly after this article was published—ever followed up on this study. Notes pertaining to Azteco-Tanoan are to be found among the archived Papers of George L. Trager (Trager 1935-1972). The collection includes a slip file of over 200 cards: 60 are headed by proposed

89 Specifically they say that “the relationship is on a different plane from that of the Uto-Aztecan” (p. 609), but the context makes it clear that they think that “plane” is more distant, not closer.
reconstructed phonemes with Tanoan reflexes on them, and another 151 cards headed and ordered alphabetically by a Taos Tiwa word with notes on possible Uto-Aztecan cognates and Azteco-Tanoan sources. There are also 34 pages of notes towards the development of Whorf and Trager (1937). It should also be mentioned that a good number of Benjamin Lee Whorf’s notes on Uto-Aztecan are to be found in the archive of Trager’s papers. It appears that these notes were bequeathed to Trager following Whorf’s death. I did not collect or catalogue these notes when I acquired copies of Trager’s Kiowa-Tanoan files, but they would undoubtedly be of interest to Uto-Aztecanists.

The next two and a half decades saw a little bit of comparative-historical work on Tanoan and further consideration of a relationship with Kiowa. Trager (1942) is the very first study to provide a quality comparative method analysis to any set of Tanoan languages. This article undertakes to reconstruct the phonemic inventory of Proto-Tiwa by comparing cognates across all four varieties of Tiwa in New Mexico, on which Trager had done fieldwork in the 1930s90. These languages and dialects are all close enough to easily identify regular correspondences, although Trager does note one or two irregular correspondences in affixes. The application of basic linguistic principles of sound change also permit him to reconstruct the ancestral Proto-Tiwa sounds from which the modern languages’ phonemes descend, which does involve changing some of his conclusions on Proto-Tanoan from Whorf and Trager (1937), although he doesn’t explicitly point this out. This article is a valuable step towards a comparative-historical study of Kiowa-Tanoan as a whole.

90 Trager does not include the Tiwa of Ysleta del Sur, which should be a descendant of the Tiwa of Isleta and Sandia. By the time of Trager’s research, though, it was thought that no fluent speakers of Ysleta Tiwa still existed.
Trager (1943) is a follow-up to the above that undertakes a comparative study of the lexical semantic domain of kinship and (human) status terms. Most of the article is given over to lists of the terms he was able to collect at the four New Mexican Tiwa Pueblos. His longest list is from Taos, that being where he had done the most research, and his shortest is from Sandia. Based on these lists, the last three pages of his article reconstruct a number of the kinship and status terms for Proto-Tiwa. Having more data from Taos, however, there may be a slight bias in his reconstructions. Such analysis is still an excellent continuation of historical work. Unfortunately it is the last such work that Trager would really undertake in print. He does make comments about inter-Tiwa and Tanoan correspondences amongst his later publications, but he did not publish any other comparative reconstruction articles. Trager (1946) does at least admit to the “probable” inclusion of Kiowa in Azteco-Tanoan, although he makes no comment on its degree of closeness to Tanoan.

Due to the war, research and publications in the 1940s were rather limited. One other piece to note from this decade, however, was Harrington’s final say in the matter. Harrington had long ceased to do any active fieldwork on Kiowa-Tanoan languages as his focus had moved elsewhere. In two appendices to a volume on the Pueblos by Edgar Hewett (Hewett 1945), he managed both to share very little of his depth of knowledge on the Pueblo languages and to make a radical proposal that he does not support with any reliable evidence. Harrington (1945a), the first appendix to the Hewett volume, simply lists the types of sounds that are to be found among the Pueblos of the Southwest. He makes a few comments on which sounds are to be found in which languages, but moreover simply makes general short statements that are not particularly informative.
This language-specific information he leaves to the second appendix. Harrington (1945b) gives the sound inventories of individual languages and includes some example words from the different languages. More interesting in this second appendix is his proposal of a new linguistic stock: Pueblo-Aztecan. This mega-stock divides first into Keresan and non-Keresan, the latter of which then divides into Uto-Aztecan and “Zunyi-Kiowan”, which then divides into Zuni and Kiowa-Tanoan. Harrington provides no convincing evidence for this grouping aside from some vague comments on shared sounds and the gross morphological structure. To my knowledge no one ever followed up on this proposal. The possibility of a Zuni-Tanoan connection was entertained a bit in the next decade, but Keresan is far too different to be obviously linked closely with any of these other families.

The 1950s witnessed some discussions on Tanoan relations and prehistoric population movements, but no real empirical studies. Olmsted (1951) is a brief response to a muddled aside by Cropely (1951) citing earlier sources that Kiowa might be a Uto-Aztecan language. Olmsted corrects this statement citing Whorf and Trager (1937) and Crowell’s (1949) work on Kiowa which suggests it is related to Tanoan. He simply points out that if these latter studies are correct, Kiowa might be related to Uto-Aztecan, but as part of a larger stock, not as a member of Uto-Aztecan. The same year, Trager published a short linguistic and ethnologic history of the peoples of the Southwest (Trager 1951). In it he follows Harrington (1945b) in suggesting that Zuni may be related to Tanoan and, following Edith Crowell(-Trager)’s studies of Kiowa, he accepts that there may be a Kiowa-Tanoan grouping. Thus he proposes that Proto-Azteco-Tanoan divides into Protos.

91 Cropely misinterprets earlier sources as saying that Kiowa is not Shoshonean but it might be Uto-Aztecan. Shoshonean is the earlier name given to Uto-Aztecan.
Uto-Aztecan and Proto-Tano-Zunian, and the latter divides into Proto-Zunian and Proto-Kiowa-Tanoan, and thence into Proto-Kiowan and Proto-Tanoan. This appears to be the first article to use the term “(Proto-)Kiowa-Tanoan”. He also proposes that these peoples came out of the north and that Kiowa and Tanoan had split before the Tanoans moved into the Southwest and adopted a Puebloan lifestyle. Many of the suggestions put forth in this article, including a connection with Zuni and a recent northern origin for Kiowa-Tanoan would not endure long.

The 1950s closed with even firmer statements on the language family than it had opened with, although the middle of the decade was still a little uncertain. Newman (1954)—and the accompanying commentary by Voegelin (1954), Hoijer (1954), and Swadesh (1954)—was tentatively willing to accept Azteco-Tanoan as a strong, but not conclusive, proposal, but the status of Kiowa and of Zuni within this stock was still hesitant. Miller (1959), apparently unaware of Trager’s (1951) proposed family tree, explicitly reopens the question of Kiowa’s affiliation with Tanoan. Comparing Whorf and Trager’s (1937) list of Azteco-Tanoan forms with Kiowa forms taken from Harrington (1928), Crowell (1949), and Sivertsen (1956), Miller is able to find 28 possible cognate sets to tentatively suggest that Kiowa might be related to Azteco-Tanoan. He is even willing to say that Kiowa might be closer to Tanoan than either is to Uto-Aztecan, although he hedges on all counts due to the limited data and calls for further study. In response Trager and Crowell Trager (1959) confirms Trager’s (1951) Kiowa-Tanoan proposal, presents a list of Kiowa and Taos Tiwa forms for comparison, and points out some regular sound correspondences. While the Azteco-Tanoan hypothesis is still accepted in this article, the Tragers do move away from including Zuni following
Newman’s (1958) published dictionary of the language. Kiowa-Tanoan, however, had been finally confirmed by the leading name in the field, if only sparsely supported by empirical evidence.

In a study completely independent from the discussion presented in the preceding paragraph, Irvine Davis of the Summer Institute of Linguistics and a specialist in Keresan undertook his own study of genetic relations among Puebloan languages. Davis (1959) presents the results of glottochronological studies of both Kiowa-Tanoan and Keresan. Not only does this study also confirm Kiowa’s relationship to Tanoan, it is also the first to propose an internal structure to the family and suggests dates at which the various branches diverged from one another. Based on the glottochronological statistics using a 100-word list: Kiowa diverged first approximately 4,000 years ago; Towa next at about 2,500 years ago; Tewa separated from Tiwa approximately 2,000 years ago; Piro diverged from Tiwa a little over 1,000 years ago; and, finally, Taos Tiwa and Isleta Tiwa (representing Northern and Southern Tiwa, respectively) separated just over 500 years ago. A summary analysis towards evaluating Azteco-Tanoan suggests Uto-Aztecan and Kiowa-Tanoan split approximately 5,000 years ago. While the dates generated by a glottochronological study are highly dubious, as Davis himself notes, it does at least give another opinion of Kiowa’s relatively close relationship with Tanoan.

Unfortunately, Davis does not actually give the 100-word list that he used to compare cognates, so the reader cannot evaluate the empirical basis for the study him- or herself. Following a similar glottochronological study of the Keresan varieties, Davis speculates on ancient population movements of the Southwest. He arrives at effectively the opposite conclusion as Trager (1951), suggesting that Kiowa-Tanoan (and Azteco-
Tanoan) has a Southwest origin with the Kiowa abandoning the sedentary Pueblo lifestyle and moving onto the Plains rather than the Tanoans having abandoned a Plains-like nomadic lifestyle and coming into the Pueblo area late. Despite the empirical problems many linguists find with glottochronology, Davis’ article does at least provide a fresh perspective on the issues of Kiowa-Tanoan relations.

The 1960s finally laid the matter to rest and confirmed the Kiowa-Tanoan relationship beyond a shadow of a doubt once and for all. It also saw the first, and almost the only, comparative-historical study that appealed to data from all four branches of the family equally. One move towards such a study was apparently taken by Randall Speirs, who had already begun his study of Rio Grande Tewa. Speirs (1962) is a ten-page manuscript that works towards a reconstruction of “Proto-Tanoan”. Unfortunately, I only know this manuscript by hearsay and do not know the details of its contents.

The truly groundbreaking work, appearing in a major linguistics journal, was done by Kenneth Hale. As described in section 3.7, Hale had become fluent in Towa as a teenager and recorded some field notes on the language in the 1950s. Towa being the most understudied branch of the family to that point, Hale was thus in a position to make a major contribution to Kiowa-Tanoan studies. Hale (1962) fills in the silence of Towa data in the arguments of the preceding decades and gives a comparison of Towa and Kiowa which establishes the regular correspondences in stem-initial consonants. He also notes briefly the further stem-initial consonant and vowel correspondences among Kiowa-Tanoan languages more broadly, bringing in some Tewa and Taos Tiwa data. He does also point out some morphological correspondences, but only barely touches on this.
While this article is enough to solidly demonstrate a very close relationship between Kiowa and Tanoan, Hale published another article five years later that took the next step in comparative-historical study of the family. Hale (1967) extends his Kiowa-Tanoan consonant and vowel correspondences of the preceding article based on approximately 200 cognate sets (Hale n.d.). He also demonstrates the morphophonological correspondence of the verb-stem-initial consonant ablaut phenomenon present in all Kiowa-Tanoan languages. Moreover, he also proposes reconstructions for the stem-initial consonants, although he does not feel confident enough to reconstruct the vowels from the correspondence sets, more complex of a task. Hale’s study is empirically sound and would influence all future comparative study in the family. It was, however, only ever intended as a first step and is not without its shortcomings. In reconstructing the Proto-Kiowa-Tanoan consonant inventory, for instance, he relies a little too much on creating a symmetrical system\footnote{Seeking symmetry in phonemic inventories, i.e. trying to economize on combinations of voicing, place, and manner of articulation, was a trend in the mid-to-late 20th century.}, which means that some of the consonant qualities he proposes are probably not correct (although most are). He also does not tackle stem-final or stem-internal consonant correspondences or much in the way of morphological or morphosyntactic correspondences and reconstruction. The latter would have been difficult due to inadequate study of the grammars of all of the languages at the time. This dearth of study also meant there were other sound correspondences that Hale simply didn’t recognize. Indeed it is not as though he intended this article to be the final word on reconstruction and comparative-historical study within the family. As it is, though, it effectively has been the final word for the past 50 years. Only a few studies in a similar vein would follow.
It would be another 10 years before the detailed comparative-historical mantle set by Hale would be picked up again to any degree. There were some relevant publications in the interim though. Trager (1967) is a linguistic historical paper much like Trager (1951), discussing the chronology of the Tanoan entry into the Pueblo area. As it appeared in the same year as Hale (1967), it could not take into consideration the full implications of that paper and does not cite it. Thus, while recognizing the Kiowa-Tanoan relationship, Trager still treats Kiowa as an external relation to Tanoan, although he does admit it may be close enough to be a fourth sub-group. He still insists upon a deeper connection with Uto-Aztecan. While he had dropped Zuni from this grouping, as noted in Trager and Crowell Trager (1959), he does consider there may be a less direct relationship by pondering a connection between Azteco-Tanoan and Macro-Penutian (a controversial deep language stock to which Zuni has been proposed to belong). The paper also includes some other interesting comments. He decides to consider Taos and Picuris Northern Tiwa to be two distinct languages, a move with which I would agree. He posits a primary split within Rio Grande Tewa between Santa Clara and the other dialects, although he does not cite any evidence. He refutes an informal suggestion he had once heard from a student working on Towa that the language might be more closely related to Kiowa than are Tiwa and Tewa. This refutation is based only on impression, not on empirical study (see chapter 0 for discussion). Along with this, he holds that Tiwa and Tewa are closer to each other than they are to Towa or Kiowa. He further suggests that Tewa might be “pidginized” Tanoan created in intensive contact with Keresan, a claim I would strongly disagree with. Finally, he dismisses the dates of linguistic splits proposed by Davis (1959) out of a distrust of glottochronology. In the remainder of the article,
Trager summarizes some structural features of Kiowa-Tanoan languages, gives a prehistory of the Southwest based on archaeological findings, and then proposes an ethnolinguistic history for the region, again suggesting that the Tanoans were latecomers who adopted Puebloan cultural traits from Keresans and Zuni upon arrival.

Trager’s last article in the historical vein is Trager (1969), in which he considers the linguistic separation of Taos and Picuris Tiwa. While archaeological and ethnohistorical evidence would suggest a separation 700 years previously, sound correspondences between old Spanish loanwords that would have been introduced only 350 years before Trager's documentation fall into the regular sound correspondence patterns found among indigenous Tiwa words in the two varieties. Trager does not come to any conclusion to reconcile these data and ends by grumbling about the complexity of language and prematurely applying dates and chronologies to linguistic facts.

While Trager published very little in the way of actual comparative method research towards a reconstruction of Tanoan or Kiowa-Tanoan, he did leave behind a few notes among his archived papers, although not many. In addition to the Azteco-Tanoan slip file and papers mentioned above, the collection also contains comparative slip files for just Tanoan. Some of these cards appear to date from the 1937 study, others from later. These files include 144 notecards based on sound correspondences and organized by reconstructed phonemes. There are mainly Taos forms on these cards, suggesting they date from the 1937 work. There is also another slip file of 255 notecards, organized according to Taos Tiwa forms, but which also include comparison from other Tanoan languages, including Kiowa. Finally, there is a single page with the numerals 1-10 listed for the four Tiwas, Kiowa, Zuni, a few Tewa forms, plus some reconstructed Proto-Tiwa
words. From all of these notes, it appears that his publications are fairly representative of his thoughts on the historical linguistics of the family.

With Trager’s retirement in the early 1970s and prevailing trends in American linguistics through the 1970s, 1980s, and into the 1990s, comparative-historical research became more intermittent. These next few that appeared thus must be considered exceptional anomalies of the era. Harwell (1971) is an M.A. thesis in linguistics from the University of Kansas which attempts to provide a comparative analysis of the grammar of Kiowa-Tanoan as an add-on to Hale’s (1967) reconstruction of phonology. Using some of the published data on Kiowa, Taos Tiwa, and Rio Grande Tewa, Harwell compares the general verb structure, noun classification, negation constructions, and question constructions of these three languages. While an admirable endeavor, the available data for all of these areas in each of the languages was quite understudied at the time and made it difficult to make any substantive observations beyond the basic similarities and differences. Also, as a Master’s thesis, the analysis is not as thoughtful as one would hope and Harwell takes the claims of the authors on whose work she bases the thesis a little too much at face value. Of course lacking sufficient data to draw her own conclusions, she may have had no other choice. The one area where she does make especially interesting observations is in the compositional structure of the pronominal proclitics. While she does not take a comprehensive enough approach to the massive sets of verbal indexation markers, she is able to point out a few apparent correspondences between sound segments and meanings. It is a start which would soon be followed by Watkins (1982) and eventually by Part III of this dissertation.
In 1976 linguist Joel Sherzer released a book-length study of areal-typological features of Native languages north of Mexico. Sherzer (1976) uses a set template of phonological and morphological traits to evaluate a representative sample from each of the major recognized geocultural regions of North America93, including members from each language family. His template looks at vowel systems, stop and fricative systems, laterals, nasal, rhotics, and semivowels within phonology94; case, possession, reduplication, consonantal symbolism, gender, number, demonstratives, numerals and locatives within nominal morphology; and, nominal incorporation, subject person markers, reduplication, tense-aspect, evidential, instrumental, and locative-directional markers within verbal morphology. His survey is hence a list for each region to say if a given feature is present or not along with comments on its distribution when not shared by all languages in the area.

Kiowa-Tanoan is of course split across the Plains and Southwest areas and Sherzer takes into account a representative language from all four branches of the family. Since his organization is by linguistic feature, though, his findings for Kiowa-Tanoan are intermingled with his findings for culturally and geographically proximate languages in each region: Yuman, Uto-Aztecan, Athabaskan, Zuni, Keresan, and Coahuiltecan in the Southwest, and Athabaskan, Algonquian, Siouan, Caddoan, Uto-Aztecan, and Tonkawan in the Plains. Also, because his coverage is so extensive and is concerned with the distribution of linguistic characteristics for typological purposes, he does not consider the evolution or family-internal relationships between characteristics. For instance, in the

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93 For Sherzer, these cultural areas are the Arctic, Western Subarctic, Eastern Subarctic, Northwest Coast, [Northwest] Plateau, California, Southwest, Great Basin, Plains, Northeast, and Southeast.
94 Each of these features is then broken down into multiple different types. For instance, for laterals he has different specifications for different types of laterals.
Southwest phonology he is able to point out that the lateral /l/ is to be found in all sample languages except Keresan, [Rio Grande] Tewa, and Southern Tiwa⁹⁵. He is also able to note under the rhotics that /r/ is to be found in Tewa and Southern Tiwa (as well as in Keresan, Hopi, and Yuman). However, this superficial evaluation does not take into account that the /r/ of Southern Tiwa is in fact cognate to the /l/ found in Towa and in Northern Tiwa, but is often not related to the /r/ (or [ɾ], rather) of Rio Grande Tewa, which is only a recently derived allophone of /d/. While such a history is not important for certain types of linguistic typological studies, it is potentially misleading for other types or for a coherent picture of a given family.

Nonetheless, Sherzer’s volume is impressive for its time and is a potentially useful reference for a quick feature-based reference of the language family and how it compares to nearby languages. Sherzer’s last couple of chapters explicitly compare the results in and between his different regions to be able to develop some universals of linguistic structure among North American languages. His findings lead him to conclude that the Southwest does not constitute a linguistic area due to few shared traits among the different language families. This is despite a historically high population density and a great deal of shared cultural influence. He does posit a Pueblo linguistic area within this, but he notes that the evidence is very weak. The Plains are also not seen as a coherent linguistic area, not surprising given that it is a relatively new cultural area, established only after the introduction of the horse from Europe. Instead, Sherzer claims it is made up of several linguistic areas, each roughly isomorphic to the different language families present. In other words, Plains Kiowa-Tanoan is set up as a linguistic area centered on—

⁹⁵ Acoma provides his only representative of Keresan. His Tewa data are primarily Santa Clara and his Southern Tiwa data are from Isleta.
and only including—Kiowa. With more recent descriptive work, our knowledge of the various languages and language families has increased in many areas, making it possible to make a much more in-depth analysis of the typology and areal features throughout North America. Sherzer (1976) is a good point of departure for such an endeavor, but is far from the final word.

Sherzer’s tome was shortly thereafter followed by another general overview of North American languages in Campbell and Mithun’s (1979) handbook. Davis (1979) is a chapter in this volume on the Kiowa-Tanoan, Keresan, and Zuni languages of the Southwest. It is essentially a summary of the work done to date, providing a short literature review, although not a comprehensive one, and discusses the structure of the families. Davis does manage to be critical in his overview, including his own impression as well as reporting the previous research. He seems to accept the relative closeness of Tewa and Tiwa, but is more willing than Trager (1967) to accept that Towa and Kiowa might be close to each other. He also dismisses Trager’s assertion that there is a primary division in Rio Grande Tewa between Santa Clara and the other dialects, citing lack of evidence. Most of his survey is merely reporting on what I have discussed above as well as on some of the recent historical and archaeological findings. The article is a good overview of the state of affairs in Kiowa-Tanoan (and Keresan and Zuni) studies at the time, although it is now over 30 years out of date.

The next researcher to come along and take an approach to comparative linguistics as seriously and meticulously as Ken Hale had was Laurel Watkins. Like Hale, Watkins had the advantage of undertaking in-depth field research into a previously poorly studied Kiowa-Tanoan language. While the Kiowa lexicon had been well represented in
Harrington (1928) and the articles by SIL linguists in the 1950s made good headway towards understanding aspects of the grammar, Watkins became the first to follow through with a fairly full analysis of the phonology and morphology of Kiowa grammar (Watkins 1984). Thus, when it came to writing comparative-historical studies of Kiowa-Tanoan, Watkins had a new perspective to contribute. She has written only four short articles along these lines, aside from scattered comparative comments in her works on Kiowa, but they are among the only works published to follow in the spirit of Ken Hale’s two articles.

Watkins (1977) attempts to provide empirical argumentation for the internal structure of the language family by appealing to shared innovations. Since at least Trager (1951)—and followed by the study in Davis (1959) and reported in Speirs (1966), among others—it had been circulated that Kiowa was the first to split from the family, followed by a split between Towa and Tiwa-Tewa, and finally the division of the latter two. Aside from Davis’ (1959) glottochronological study, this had been based on nothing but impressionistic data. Watkins seeks to correct this and find actual motivation for claiming that one branch is closer to another than the others are. Basing herself on the reconstructed consonant inventory of Hale (1967), she posits three sound changes that motivate a primary Kiowa/Tanoan split and two changes that motivate a Towa/Tewa-Tiwa split. As I argue in Sutton (2009), however, all but one of these changes do not actually constitute proof of shared innovation and even the one that is left may have an alternative explanation (see chapter 0 for a summary of my arguments). Watkins realized these shortcomings herself since she never appeals to these innovations in subsequent writings (Laurel Watkins, personal communication). This issue notwithstanding, it is an
enjoyable article and represents exactly the type of study that is needed for tackling the historical linguistics of a language family. She also closes the article by pointing out features shared among the Kiowa-Tanoan languages: number suppletive positional verbs and some of the constructions in which they are involved, namely possession.

Watkins published another comparative-historical article the next year. Watkins (1978b) addresses one of the problems in Hale’s (1967) reconstruction of the Proto-Kiowa-Tanoan consonant inventory, namely the correspondence involving glides. Hale proposes a proto-segment /*w/, but it is supported by only a single cognate set, and that a dubious one. Hale’s inventory also lacks a /*y/. Watkins argues for another line of development concerning /*w/—Kiowa lacks a /w/ phoneme, so it takes some clever observation and knowledge of the languages to arrive at the conclusion she does—and also proposes a /*y/ to account for sound correspondences that are not in accord with the regular patterns Hale discusses. The article does leave the reader with some questions and makes it clear there is much more study that is needed, but Watkins’ new work on Kiowa shines through and enriches the comparative-historical research of a language family that has been lacking in empirical data.

Watkins’ next two comparative-historical studies, though years apart, turn to morphosyntactic issues in the family that had recently become the center of attention. The complex voice and indexation system of the family was coming to light through Allen, Gardiner, and Frantz’s work on Southern Tiwa (section 3.6) and Kroskrity’s work on Arizona Tewa (section 3.3). Similar data for Towa had also briefly appeared in publication (Hale 1972). Watkins (1982) first compares the pronominal proclitics of the languages in both function and form. She points out some sound correspondences—
different from the regular correspondences found by Hale for stem-initial consonants—but does not seek to reconstruct the proto-system of proclitics or to establish correspondences across the board. She limits herself to outlining the similarity in the pronominal systems. She then turns to the “passive” voice/valence-reducing construction seen amongst the languages and is able to propose a reconstructed morpheme that gave rise to the passive suffix in Tiwa and the detransitivizing suffix in Kiowa, hypothesizing that the original function of the suffix was as a general detransitivizer. The strictly passive function in Tiwa would then be an innovation.

Watkins (1996) revisits the 1982 study but is able to take into account more and a greater variety of data. Again she examines the structure and usage of pronominal proclitics with respect to person indexation and valence and also looks at the voice alternations. She again comes to the conclusion that the passive/inverse suffix of Tiwa and Towa derive from a general detransitivizer, whose reflex still has this function in Kiowa. She does argue that Proto-Kiowa-Tanoan had some kind of direct-inverse voice system, but that the passive realization of this system seen in Tiwa and Towa developed by reanalysis of the dative clitics. It thus improves on the earlier article by providing a functional motivation for the changes that she suggests have taken place.

While I will be seen to disagree with Watkins’ analysis of the original function of the Proto-Kiowa-Tanoan detransitivizer (chapter 0) and in the paths of development of the pronominal indexation markers (Part III), these articles are good quality and level-headed investigations. It is only unfortunate that there have been so few of them and not many by other authors that are comparable.
As Watkins was producing her early comparative-historical and Kiowa work, another summary statement on the languages of the Southwest appeared in Hale and Harris (1979). Published in the large Smithsonian handbook on Southwest communities and cultures, this article seeks to demonstrate the benefits of bringing together historical linguistic and archaeological data and analyses. It is largely a critical summary of previous works, although there are some original claims regarding Kiowa-Tanoan. Hale and Harris do perform their own glottochronological study and arrive at comparable time depths as Davis found, but with a lower figure for the Kiowa-Tanoan relationship (2,600-3,300 years instead of Davis’ ~4,000 years). Like Davis, though, they do not publish the data list on which they base this conclusion. They also go with the proposal that Tiwa and Tewa are slightly closer than either are to Towa or Kiowa, but otherwise do not take a strong stance on the relative closeness of Tewa-Tiwa to Towa or Kiowa or of the latter two to each other. They are much more reserved about accepting the Azteco-Tanoan hypothesis, but they do not dismiss the possibility. The authors also differ from Trager (1951, 1967) in the origin and movements of the Kiowa-Tanoan speaking peoples and their participation in the major prehistoric Southwestern civilizations. Whereas Trager argued that they were probably latecomers to the area, Hale and Harris suggest they were probably major players throughout the Mogollon and Anasazi developments, no less so than the Keresan peoples. Hale and Harris’ article would be the last linguistically savvy original statement on these matters until the 2000s.

Aside from Watkins (1982), the 1980s did not produce any comparative or comparative-historical work for Kiowa-Tanoan. There were a few pieces with statements towards deeper relationships, however, including revisitations to the Azteco-Tanoan
hypothesis. Shaul (1985) raises a question regarding Whorf and Trager’s (1937) reconstructed Azteco-Tanoan liquids */l/ and */r/ based on correspondences seen internal to Uto-Aztec. Namely, Northern Uto-Aztec languages have /n/ where Southern languages have /r/ or /l/. Thus if Kiowa-Tanoan languages consistently have /n/ or /r/ in forms proposed to be cognate to Uto-Aztec, it could suggest borrowing rather than genetic relation. Shaul pulls out some of the relevant sets from Whorf and Trager’s list, correcting the Uto-Aztec and Kiowa-Tanoan forms based on subsequent work. He finds that Whorf and Trager’s reconstruction of Azteco-Tanoan */l/ and */r/ is not as sound as they believed and correspondences between the two families could be explained by borrowing. It must be noted that Shaul’s three-page paper is the first empirical study to follow-up on Whorf and Trager’s proposal and try to ascertain its validity.

Shaul’s short work was soon supplemented by another reevaluation of Azteco-Tanoan. Davis (1989) revisits Whorf and Trager’s full list of data. Like Shaul, he updates the Uto-Aztec and Kiowa-Tanoan reconstructions based on all of the work that had been in the 50 years since the Azteco-Tanoan hypothesis was proposed in 1937. For Kiowa-Tanoan he is of course relying most heavily on Hale (1967), but he also supplements it with his own analysis by proposing vowel reconstructions for the correspondences that Hale had found. Also, while he doesn’t come to any resolution of the issue, he does make some observations on stem-internal and stem-final consonants and includes some tentative reconstructions for undertaking the study in his paper. Davis’ reconstructions will be evaluated in chapter 0 along with Hale’s and Watkins’. Davis goes on to list the new reconstructed Uto-Aztec and Kiowa-Tanoan forms, many accompanied by Whorf and Trager’s proposed Azteco-Tanoan reconstructions, and
summarizes the consonant and vowel correspondences between the two families. He finds that only about half of the cognate sets proposed by Whorf and Trager seem possibly valid, about 52 out of the 102 shown in the 1937 paper. He finds this enough to support a possible relationship, but points out that this does not entail an especially close one. That is, it is not enough to suggest Uto-Aztecan and Kiowa-Tanoan are closer to each other than either of them is to some other family. Hence the door for further investigation of the hypothesis is left open.

Those familiar with the linguistics of languages of the Americas will also know that, two years before Davis published his article, a major work appeared that contained some radical proposals for deep genetic relations. Greenberg (1987) was a monumental and notorious work by a great linguist of the 20th century in which all of the languages and language families of North, Central, and South America are classified into phylogenetic groups. Perhaps the most noted, and most controversial, aspect of Greenberg’s classification is that he ultimately classified all of these languages into only three genetic stocks. Two of those stocks, Eskimo-Aleut and Na-Dene96, were largely already accepted language families, but the third, Amerind, encompassed all of the languages of Central and South America and most of the languages of North America, including Kiowa-Tanoan97. What’s more, Greenberg’s claims imply (and he states) that the highly diverse Amerind stock is effectively no more than 12,000 years old, dating

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96 Eskimo-Aleut has long been accepted as a relatively low-level family unit, although Greenberg groups it with families of Eurasia under his Eurasiatic stock. Na-Dene includes the Athabaskan language family, and the isolates Eyak and Tlingit. This grouping is fairly well accepted by specialists at this point. The isolate Haida has also often been classified as Na-Dene, a classification Greenberg accepts, but this inclusion has long been questioned and most Na-Dene specialists reject Haida as a member of the phylum nowadays.

97 Greenberg (1987) was not his first publication of some variant of the Amerind hypothesis. Greenberg (1960) and (1979) both present classifications building up towards his full 1987 proposal.
from the earliest confirmed records of human habitation in the Americas at the time\textsuperscript{98}. While this three-way grouping is probably the one that grabs most people’s attention, language and language family specialists would probably take greater interest in the sub-groupings that Greenberg proposes. In this, his work is much like Sapir’s (1929), and many of his groups are the same or similar. Kiowa-Tanoan Greenberg places in his “Central Amerind” phylum, alongside Uto-Aztecan—thus effectively accepting the Azteco-Tanoan hypothesis—and the large and diverse Otomanguean family of Central America. He sees these three as coordinate branches, so he makes no claims that two of the families are closer to each other than either are to the third.

Greenberg derives the above classification using his mass comparison method, a basic statistical method which takes into account a fairly large amount of data from a large number of languages. The gist of the method is that if two languages or language families look more similar to each other on multiple data points than either do to another language or family, then they must be related. Unlike the comparative method of historical linguistics, it does not require regular correspondences—which become muddled and/or disappear across great time depths anyway—and is not in-and-of itself intended to be used for reconstruction of an ancestral language. Instead it essentially relies upon both the conservative nature of language and the non-random ways in which languages change. While one can easily find a similarity of form and meaning between a single random word of one language and a word in some other random language, one is unlikely to find multiple form-meaning similarities between two languages unless those

\textsuperscript{98} J. Nichols (1990) argues that, if Amerind has any validity at all, it would be on the order of around 50,000 years old, an age most specialists would probably be more willing to accept. However, see Nettle (1999) for discussion on this issue.
languages are either related or have been in intensive contact (each of which lead to different kinds of remnants in languages). It is thus more a method for making general findings across large pools of data rather than for investigating fine-grained details, like the comparative method is intended to do. Thus, in surveying a list of words, Greenberg found more (non-arbitrary) similarities between Kiowa-Tanoan, Uto-Aztecan, and Otomanguean than he did between these individual families and any other family in the Americas.

Since this work is not specifically about the classification of Kiowa-Tanoan, this is not the place to go into the details of the controversy surrounding this work. For critical evaluations see Campbell (1988) for a scathing review and Greenberg’s (1989) defense and response to this review. Campbell (1997) is effectively a book-length criticism of Greenberg (1987), both detailing the languages of the Americas as well as pointing out the various errors in Greenberg’s work.

Indeed, one point where Campbell is correct in his criticisms is the fact that Greenberg (1987) has a lot of mistakes in the data. Since he was pulling language data from sources of varying quality—from fine detailed linguistic studies of the 20th century to 16th century word lists recorded with great linguistic naivety—there are numerous errors in linguistic forms and meanings. This is certainly true in his Kiowa-Tanoan data, where he was pulling examples from Harrington and others who had various shortcomings in their transcriptions. Also, not being a specialist in any of the hundreds of

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99 Linguists have actually been using mass comparison for a long time. It is how they’ve come to hypotheses on how two languages might be related. Indeed, until Hale (1962, 1967), it is effectively how people classified the Tanoan languages. It wasn’t because of regular correspondences, but rather because people could listen to Tewa, Tiwa, and Towa (and eventually Kiowa) and hear words that sounded similar and had similar meanings.
languages he was classifying, he was often unaware of morphological constituency, leading him to compare word forms that were not actually comparable. This kind of error was rare in Greenberg’s Kiowa-Tanoan data. To Campbell, such errors spell a death knell to Greenberg’s proposal. Greenberg’s defense is to the effect that the statistical measures of mass comparison override individual nitpicky mistakes since he was comparing so much data. Needless to say, the Amerind hypothesis—and the set of subgroupings Greenberg proposes—remains unproven, but for many it has not been disproven either. If nothing else, it suggests that Kiowa-Tanoanists interested in deeper genetic relations should perhaps first investigate Uto-Aztecan and Otomanguean before considering other families.

From the mid-1990s through the first decade and a half of the 21st century at the time of this writing, there has been a slow return to detailed empirical comparative-historical studies of Kiowa-Tanoan, including both internal and external relationships. Yumitani (1987), as a precursor to one of these works, is a survey of the phonology of the different Puebloan languages, including the different Tanoan branches, Keresan, and Zuni. He is primarily only concerned with the phonemic inventories. There are several minor mistakes in his summary and, like Harwell (1971), he occasionally sticks a little too close to what previous researchers have reported rather than reaching his own

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100 This sentence effectively represents my opinion on the issue. I think Greenberg presents some possibilities in terms of his subgroupings that are worth following up with more meticulous investigation using the comparative method and more modern findings regarding principles of language change. Whether or not Greenberg was correct will only be proven from there. As far as the overall Amerind hypothesis, again I deem it a possibility until proven one way or the other, although I do find Greenberg’s 12,000 year time depth to be dubious. To me, however, it is too general to be a useful classification for any but the broadest of typological studies such that discussing all of the languages of the Americas as related versus considering the Americas a linguistic area due to language contact (à la Dryer 1989) may be a moot distinction to make. Of course having been myself a student of two of Greenberg’s students—Paul Newman and William Croft—I am inclined to have some sympathy for his work, even if I have my doubts.
conclusions based on the data. However, he is at least able to point out a few shared traits of the Pueblo languages, even if he is not yet set to go further in his analysis.

Bereznak (1995) could be seen as the successor and expansion of Yumitani’s (1987) and Sherzer’s (1976) studies. It is a doctoral dissertation in linguistics from Louisiana State University which attempts to evaluate the Pueblo region as a linguistic area and find evidence of diffusion amongst the Kiowa-Tanoan, Keresan, Zuni, and Hopi languages. It is no small undertaking and unfortunately Bereznak’s study suffers from the same issues as other research among the Pueblos: lack of reliable linguistic data and analysis. Since Zuni and Keresan are isolates and have no widely accepted relations outside the Pueblo region and Kiowa-Tanoan has only one family member elsewhere, it is difficult to evaluate linguistic diffusion in the first place. Without much more in-depth study of the individual languages and of the language families, it becomes extremely difficult. Thus, in the end, the study is an admirable attempt, but I find it an unfortunate, if understandable, let down. Bereznak does point out shared features among the Puebloan languages, but many of them cannot be proven to be diffusion.

With respect to Kiowa-Tanoan, she does point out one important fact that is relevant to comparative-historical work and must be given serious consideration. The Tanoan languages of the Southwest appear to have undergone a change wherein voiced stops have become nasal stops before nasal vowels (and in Northern Tiwa and Arizona Tewa, this change applies to virtually all voiced stops in all contexts). The change is not found in Kiowa101, thus it has been interpreted as a shared innovation among the Tanoan languages that demonstrates a primary Kiowa/Tanoan split (cf. Hale 1967, Watkins

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101 Actually it is found, but only marginally.
1977). However, as Bereznak points out, no other language family of the Southwest has a voiced-voiceless contrast, and thus the change seen in Tanoan may not be so much a shared innovation as areal influence. If true, then this removes the one convincing piece of evidence so far proposed that suggests Kiowa is further removed from the Tanoan languages than any of them are from each other. This discussion will be taken up in Part II and in chapter 0.

Another insightful study on Kiowa-Tanoan historical linguistics appeared in the mid-1990s. Nichols (1994a), which is only slightly revised and republished as Nichols (1996), takes a fresh look at verb-stem-initial consonant ablaut, one of the hallmark morphophonological features of Kiowa-Tanoan. In the modern languages, this is seen as an alternation between the basic form a verb stem takes when used predicatively versus the “ablauted” form when it appears in certain morphosyntactic contexts: when incorporated, when nominalized, and when stativized. While sound changes may mask the original patterns, the alternation is effectively that a voiced stop or an ejective obstruent in a predicate verb becomes a voiceless obstruent (of the same place and manner of articulation) in the specified constructions. There are also a handful of other alternations in this context that are not as easily generalizable (see chapter 6). Nichols’ proposal is that historically the “ablauted” form was the basic and that the modern “basic” stem was derived by prefixing a subordinating morpheme. As this historical prefix was fused with the initial consonant of the stem, a reanalysis took place wherein the “ablauted” stem was seen as basic and the “basic” stem as ablauted.

Nichols’ argument is quite compelling, although not without its problems. It is a theory worth pursuing, however. Its application in the present study is limited, though.
The development of the ablaut seen in the modern languages predates the break-up of Proto-Kiowa-Tanoan and thus Nichols’ theorized chain of development, if true, must apply to a stage of the language before the most immediate common ancestor to the Kiowa-Tanoan language family (Pre-Proto-Kiowa-Tanoan). In a historical analysis, it is thus more useful towards exploring relationships between Kiowa-Tanoan and other language families than towards reconstructing Proto-Kiowa-Tanoan itself.

At the time of writing, the 21st century has already seen a number of comparative and comparative-historical studies involving Kiowa-Tanoan, this dissertation hopefully not least among them. Harbour (2009a-e) is a series of five handouts available on his website (http://webspace.qmul.ac.uk/dharbour/) from a set of lectures on Kiowa-Tanoan languages at Queen Mary University of London. The goal of the series is “[t]o present a notational and descriptive framework that makes clear what the points of contact and of divergence are between various Kiowa-Tanoan languages—and to make clear where the data does not permit one to say either way” (Harbour 2009a:1). Being his preferred research framework, he is particularly concerned with presenting those issues of interest to generative studies. The bulk of the handouts thus focus on verbal indexation and valence alternation constructions and he goes over the structure of the pronominal proclitic inventories of Kiowa, Southern Tiwa, Rio Grande Tewa, and Towa. Although there is some framing in generative terms, the handouts are fairly accessible to linguists of any persuasion and include a fair number of examples, including Kiowa data from Harbour’s own fieldwork (see section 3.1). The handouts are comparative, but not comparative-historical, and thus are wholly concerned with the features of the synchronic languages and provide good summaries of the parts of the grammar they cover.
Jane Hill, a Uto-Aztecist, has also published some articles in the past decade or so that touch on Kiowa-Tanoan. Uto-Aztecan studies are not without their own controversies and debates and, whether or not Kiowa-Tanoan and Uto-Aztecan ultimately prove to be related, they are tied together at the very least by geographical contiguity. The point of contention in Uto-Aztecan studies that Hill addresses in the relevant series of articles is where the Proto-Uto-Aztecan originated. One theory posits they must have originated in what is now the US Southwest, near the Pueblo area, before spreading both north and south. The southern Uto-Aztecan then adopted maize agriculture from other groups in Mexico and Central America while the non-agricultural northern Uto-Aztecan retained the older hunter-gatherer lifestyle. The other theory, the one for which Hill argues, posits a southern origin for Uto-Aztecan speakers who played a critical role in developing maize agriculture and spreading it northward. The nomadic lifestyle of the northern groups is then explained as an abandonment of agriculture as they moved into areas that would not support it (e.g. the Great Basin). Hill (2001) provides her opening arguments towards this latter proposal.

Hill (2002) and (2008) are the two articles that then focus on the implications for the Azteco-Tanoan hypothesis and should be of interest to Kiowa-Tanoanists. These studies suggest that, rather than a close phylogenetic relationship between the families, the major similarities and proposed cognates may actually represent language contact. She argues for this by examining possible cognates and notes a pattern that suggests that Kiowa-Tanoan vocabulary relating to maize agriculture may have been borrowed from Uto-Aztecan languages—the speakers of which may have introduced agriculture into the Southwest—while Uto-Aztecan languages may have borrowed vocabulary for flora and
fauna indigenous to the Colorado Plateau from the native Kiowa-Tanoan languages. It should be noted that Hill’s arguments partly depend on the validity of a Northern Uto-Aztecan phylogenetic subgrouping\(^{102}\) within that family that not all Uto-Aztecanists agree upon. The proposed contact was thus between speakers of Proto-Northern-Uto-Aztecan and speakers of Proto-Kiowa-Tanoan to account for the distribution of similar words.

Hill’s proposal and arguments are an interesting reanalysis of the issues involved in Uto-Aztecan/Kiowa-Tanoan comparison and suggest an alternative to the Azteco-Tanoan hypothesis. Not all of the potential loans she proposes are convincing and there are some minor mistakes in some of the Kiowa-Tanoan data, but not enough to undermine her argument. With some further work towards reconstructing Proto-Kiowa-Tanoan and the internal developments of that family, it could be worth pursuing Hill’s proposal in more detail. Until then, it remains an interesting suggestion.

Another body of 21st century research that has been making appeal to Kiowa-Tanoan comparative-historical linguistic work comes not out of linguistics or ethnology, but out of archaeology. Scott Ortman, who recently finished a doctorate in anthropology from Arizona State University, has made use of linguistic data and arguments in support of his archaeological research. The focus of his studies is primarily the Mesa Verde vicinity of southern Colorado, an area famously inhabited by the ancestors of some set of the modern Pueblo peoples. Ortman’s leading hypothesis in his research endeavors is that the population of the Mesa Verde region consisted of, or at least included, the ancestors

\(^{102}\) This group includes Hopi, Numic, Takic, and Tübatulabal. Hill argues that there are shared innovations that make this a valid phylogenetic subgroup within Uto-Aztecan. “Southern” Uto-Aztecan groups, on the other hand, do not form a comparable single phylogenetic grouping. In other words, the greater phylogenetic diversity of Uto-Aztecan is in the south, providing evidence for a southern origin for the family.
of the modern Tewa. Unfortunately I discovered Ortman’s work too late to make a comprehensive review for this dissertation. Instead, I will primarily concern myself with Ortman (2012), the revised publication of his doctoral dissertation (Ortman 2010) and the culmination of his primary research program to date.

Ortman (2012) centers on the question of the most immediate prehistoric origins of the modern Tewa. He debates an in-situ development in the Tewa Basin (adjacent to their close linguistic relatives, the Tiwa) versus a development in the Mesa Verde region with a later migration south during the Coalition Period (when the populations of the more northern Pueblo settlements moved south into the Rio Grande area). Ortman reasons the Tiwa to have long been in their present location along the Rio Grande Valley and the Towa to have developed in the San Juan Basin, before moving to their present areas. Both of these are fairly uncontroversial among archaeologists, thus it is the movements of the Tewa that are the least clear.

Ortman’s first arguments towards his hypothesis are archaeological in nature. He considers the population history of the Tewa Basin and Mesa Verde regions, correlating the depopulation of the latter with population growth in the former. He also looks to biological features from remains found at both sites, the respective architectural and artifact features, and other dynamics suggesting correspondence between the two regions. The details of these arguments need not concern us here, language not figuring prominently in these discussions.

The central chapters of Ortman’s book, on the other hand, depend heavily on language. His first task is to establish internal relationships within the family. To this end he relies on Hale’s (1962, 1967) and Davis’ (1989) reconstructions, adapting them only
slightly under his own analysis. For linguistic data Ortman makes use of a fair spread of the literature reviewed above, but particularly Harrington (1916), Martinez (1982), and Trager’s Taos lexical slip file (Trager 1935-1972). He is thus able to construct his own correspondence sets—93 sets appear in the appendix—to make the appropriate minor adjustments, namely in the vowels. From the arguments in the literature and from the sound correspondences, he identifies supposed shared innovations to determine that the traditional family tree is correct: Kiowa broke off first, followed by Towa, and Tewa-Tiwa form a subgroup.

Ortman next attempts to establish homelands for each of the linguistic sub-groups of the family based on the dates provided by lexicostatistic studies and by correlating vocabulary in Tewa and Tiwa with technological innovations attested in the archaeology of the region. While this does not provide definitive evidence for a Tewa-Mesa Verde connection, he does put forth evidence of the separate development of Tewa and Tiwa, the two groups thought to be most closely related.

His third arena of linguistic argumentation comes from place names and the Tewa oral tradition of their movements. Ortman compares the Tewa and Northern Tiwa place names found mainly in Harrington (1916) and Trager’s notes to ascertain the period at which the two groups may have come into contact, i.e. when the Tewa might have moved into the Tewa Basin adjacent to the Tiwa. He parses these names to determine which ones are borrowed from one language into the other, which might be calques, which might be shared retentions from the ancestral language, and which are completely different. Ortman looks especially to the names for landforms in Northern New Mexico and in the Mesa Verde area. He ultimately finds a small number of possible calques and borrowings
and a few possible shared retentions from which he concludes geographically separate developments for the Tewa and Tiwa.

His last set of linguistic arguments revolves around metaphors. In particular he tries to determine conceptual metaphors that may have been present in the Mesa Verde region based on village construction and artistic representations found on buildings, in pottery, and in textiles. He also looks at such patterns in the Tewa Basin ancient material culture. He then seeks to correlate these physically realized metaphors with reflexes in the modern Tewa language. He is especially taken with the idea that the village may have come to be conceptualized as a bowl or eating container and traces a network of potential metaphors to build up this argument.

It must be said for Ortman’s work that he took on a lot and did fairly well with massive amounts of data. This book and the research it represents is exactly the kind of interdisciplinary argumentation that needs to exist for the investigation of the ethnohistory of the region. Ortman illustrates handily how language, archaeology, and cultural anthropology can all heavily inform one another. That being said, the work has its flaws. Ortman is an archaeologist by training, not a linguist, and it does show. Of his archaeological evidence, I can say little, not having the appropriate training myself. His arguments seem compelling, but do not prove his hypothesis beyond a shadow of a doubt. In this, the work can be considered a fair success. His linguistic evidence varies in quality, but is ultimately less convincing towards his thesis.

In considering the reconstructions and sound correspondences in order to find shared innovations, he betrays his lack of training. Ortman overuses the “Occam’s Razor” principle of the comparative method in trying to extend Hale’s and Davis’ studies and
does not show enough insight into general patterns of sound change. He also does not evaluate the actual phonetic values of the sounds and sound changes he is considering, which also leads to questionable proposals. The attempt is not so terrible as to nullify the entire study, but it does not instill confidence in the rest of the work. His interpretation of Hale’s reconstructions is sound enough that his arguments for the internal structure of the family tree could have some little weight, but there are other interpretations of the data. Also, he only considers sound correspondences and does not get into grammatical correspondences and reconstruction. Of course there is not much research for him to cite and build on in this area, but it does mean that he is leaning too heavily on only little support.

His argumentation on place names and metaphors doesn’t show the same kind of fundamental flaws and both types of studies are good ideas. They don’t bear up to the weight he places on them, however. Almost none of his place name comparisons provide convincing evidence for a Mesa Verde origin and many of his proposed loans and calques are not obviously so either. I am also not convinced by all of the metaphors he discusses, neither the physical reflexes nor the linguistic ones. The same is true of his arguments correlating indigenous technologies and lexical innovations. It also does not help his case in these discussions that some of his etymologies—Tewa-internal and comparative—are questionable or flat-out wrong\(^\text{103}\). With better comparative-historical study of the

\(^{103}\) For example, he depends heavily on interpreting the San Juan Tewa word \textit{t'úphá'di} “pitched roof” as \textit{t'ú(g)} “coiled basket” + \textit{phé} “stick, timber” + \textit{di} “of”. This is part of his discussion of the BUILDING AS CONTAINER metaphor. There is no such regular change as \textit{phé} to \textit{phá()}, and \textit{phá'di} has nothing to do with wood. It does in fact mean “arched, humped” and is the term some might use of a hunchback. Also, \textit{t'ú} seems to me to be more likely derived from \textit{t'ú} “back (of the body)” than from \textit{t'ú} “basket” (probably by a common metaphor wherein “back” is used to express “top”, based in the configuration of a quadruped.). I do not deny the possibility of the “basket” interpretation, though, so it does not completely undermine his proposed metaphor.
languages of the Southwest, Ortman may have constructed a far more persuasive argument. Hopefully future collaboration between the disciplines will enhance such studies and either bear out, refine, or correct the proposals in Ortman (2012). This possibility notwithstanding, Ortman continues to be active in his field and will undoubtedly do further valuable research in the Southwest.

My own work also fits in in this time period. Much of my Kiowa-Tanoan work is towards synchronic language description of the Tanoan languages and assistance in community-based language revitalization programs, for which my publication options are currently limited in accommodation to the wishes of the communities (cf. Ashworth et al. 2011, of which I am one of the authors). This dissertation and two previous publications illustrate a strong interest in diachronic research on the language family. Sutton (2009) is a conference proceedings paper that considers, and calls into question, previous claims as to the internal structure of Kiowa-Tanoan. It is largely a speculative piece, pointing out the shortcomings in Watkins (1977), the one major attempt to determine internal family structure, and considering superficial evidence that could suggest an alternative structure to the family tree: a primary split between Tiwa and Kiowa-Tewa-Towa, or between Tewa-Tiwa and Kiowa-Towa. The article does not suggest any particular tree to be the most valid and is mainly a call for further research by making explicit points that have too often been assumed or claimed with only insufficient evidence. It does have some minor factual errors in some of the extra-linguistic data, but these do not interfere with the primary discussion.

Sutton (2010) is a somewhat more substantive piece that develops a reconstruction of the noun classification and number marking pattern of Kiowa-Tanoan.
The article examines the structure of the noun class system seen in each of the four branches of the family, focusing primarily on the semantic categories rather than on the form of expression. It finds the system in the Tiwa languages to be the most divergent and the systems in Tewa and Towa to be most alike. On the basis of typological tendencies in language change and semantic categories, I determine Tewa and Towa to represent the most conservative pattern, Kiowa to have changed the pattern only slightly, and the Tiwa branch to have undergone a fairly radical change while still conserving some aspects to the ancestral system.

The major weakness in my 2010 article is the lack of formal correspondences to help support the argument and to provide more data towards the changes that have taken place. Also, the arguments are mainly based on noun class membership and general patterns of number marking, primarily appealing to that seen in the nominal morphology. A full understanding of the development of noun class and number marking also requires analyzing the complex set of pronominal proclitics, which was not attempted at the time. Also, in order to better integrate the article into the volume in which it was published, the editors had requested that I include discussion of the fieldwork situation in studying these languages. This effectively meant weaving a completely different paper into the article. I’m not entirely sure how well the two strands mesh as a single piece and readers may find the prose unbalanced. Otherwise, I hope to improve on the discussion presented in Sutton (2010)—and in Sutton (2009)—in this dissertation.

In addition to the above studies that have more or less of significance to say on Kiowa-Tanoan, there have been a number of general overviews of the family, bibliographies, ethnographies that focus on the Pueblos in general, and works that simply
mention a greater or lesser amount of data from one or more of the languages. This section will hence finish up by mentioning some of this miscellany.

One of the earliest general reports on the languages and cultures of the Southwest, which also included a fair amount of language data, was the writings of archaeologist Adolph Bandelier. Bandelier (1881a, b, 1890a, b, 1892, 1910) consist of archaeological and ethnographic reports on the Southwest and on Puebloan culture. While he was not seeking to document any of the languages, his works do include numerous terms for clan names and place names from the various Puebloan languages, including from the Tanoan groups. His transcriptions are poor, of course, but are among the earliest representations of the languages in print. Harrington (1916) cites many forms from Bandelier’s reports. While not important in terms of language documentation or representation, Bandelier (1890c) is a historical fiction novel that follows characters from a Keres Pueblo as an incident leads to a war with a Tewa Pueblo. If nothing else, it provides a perspective on how early American scholars viewed Puebloan culture.

Hodge (1935) is a compiled and corrected list of the Pueblos that are mentioned in the earliest Spanish documents. It is an attempt to provide contemporary researchers with a resource for filtering through the jumbled mess of difficult to read handwriting, typographic errors and alternative spelling, and alternative names given in different languages. Hodge provides notes on which ethnic group was associated with each community, insofar as possible. It is a useful list to have, representing effectively the earliest documentation of words in any native language of New Mexico, but interpreting ancient names in the modern languages through the poor Spanish transcription is not an easy task.
Parsons (1939b) is Elsie Clews Parsons’ magnum opus on Pueblo religion based on two decades of ethnographic research among the Pueblos. It covers practices at Tanoan, Keresan, Zuni, and Hopi communities and, like her other works, includes sporadic native words. As a text, it is a classic of Southwestern anthropology, although any reader who also does research among the Pueblos should show some cultural sensitivity when discussing this work. Religion is the paramount arena of cultural information that these communities do not want circulated, so Parsons’ exposé on the topic must be treated with caution.

A few articles examine a single word among languages of the Southwest and end up including Kiowa-Tanoan data. Trager (1938), republished with no significant revision as Trager (1964), is a brief note on the prototype status of cottonwoods among trees in Southwest languages. He points out data from Taos Tiwa, Southern Tiwa, Tewa, Kiowa, Hopi, and New Mexican Spanish in which the word for “cottonwood” is also used as the generic term for “tree” and finds an easy explanation in the fact that cottonwoods are almost the only deciduous tree to be found outside of mountain forests in the region.

Landar (1959, 1961) and Bright (1960) constitute an exchange of brief notes on the origin and development of the word for “cat” in Southwestern native languages, which seem to be borrowed from some Spanish term. Landar (1959) shows some apprehension about deriving the Southwest terms from Spanish miso, but Bright (1960) points out an alternative origin from a more obscure Spanish usage. Landar (1961) follows Bright up with support for this argument. Of these three articles, only the first of Landar’s and Bright’s actually give any Tanoan forms: the Tewa and Taos Tiwa words, cited from earlier sources, but the discussion of all of these articles applies.
Kroskrity (1983a) presents a few instances of gendered speech forms from Kiowa-Tanoan, Uto-Aztecan (Hopi), and Keresan, the first article to address this issue. He does not claim the list he gives is comprehensive, but gendered speech is not a prevalent feature in the Southwest, so a comprehensive list would not be all that much longer. He does at least point out the phenomenon and some of its structural features. For instance, in all languages the gendered speech is lexically based rather than regularly phonological or morphologically based. It is an area in need of further study in Kiowa-Tanoan.

Leap (1985) considers the notion of “Pueblo” and how the native Puebloans themselves think of and refer to the “Pueblo”. He does this by looking at the native language term used that is the closest meaning equivalent to the Spanish and English use of the term in Taos, Isleta, San Juan, Laguna, and Hopi. He determined the meanings by asking native community members. Leap concludes that, whereas the Spanish-derived term (and its English usage) refers essentially to a sedentary settlement of structures, the indigenous terms all refer to social and communal setting and tend to highlight “tribally- and community-specific details” (p. 499). Leap writes this article as a way of pointing out the need to pay attention to basic ethnographic observation when undertaking lexical analysis.

There are also a number of publications that have little more than an overview of the Kiowa-Tanoan languages or contain relevant bibliographic information. I’m sure many other comparable publications could also be listed than I have here. While some of

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104 His list consists of nine meaning translations. Three of the meanings have examples given from three languages each, the rest are exemplified by only one language each. The Kiowa-Tanoan gendered meanings that he gives are: for Arizona Tewa, “thank you”, “it’s beautiful”, “yes”, “(be) good”; for Rio Grande Tewa, “yes”; for Sandia Southern Tiwa: “thank you”.

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these do have some analytic central topic, the analyses do not focus on Kiowa-Tanoan, so these end up being far from primary literature.

Swadesh (1964) is a good example. His discussion centers on linguistic classification in the Southwest and he includes some original studies and suggestions following Sapir (1929), *inter alia*, in investigating long distance relations between language families. But, while he does have some interesting things to suggest about Keresan and Zuni, on Kiowa-Tanoan he only states his resolute acceptance of the Azteco-Tanoan hypothesis and even considers them to be quite close. This opinion appears to be based solely on Whorf and Trager (1937).

Voegelin, Voegelin, and Schutz (1967) is an examination of the language situation in Arizona—including immigrant languages—but also takes into consideration the language families found throughout the Southwest, including Kiowa-Tanoan. Of this language family, they primarily summarize the current and historically recent language and cultural situation of the individual Tanoan communities. One remark that they make for a Kiowa-Tanoan language that had not been previously made in the primary literature is the fact that Towa is, or at least may be, a “leveled” dialect, having integrated the speech of both Jemez and Pecos. This is worth considering in a comparative-historical study, although there were very few survivors from Pecos who moved to Jemez and it is not at all certain that they even spoke a Towa language. The article otherwise does not say anything on Kiowa-Tanoan that would not be found in the main body of literature.

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105 Even taking Pecos out of the equation, Towa may still be a historically “leveled” dialect. Jemez Pueblo did not exist as such before the advent of the Spanish. Rather, there were several Towa-speaking villages amongst the Jemez mountains, mostly on the plateaus rather than down in the valleys, and perhaps more towards Pecos and Glorieta. A mission was first established near the present site of Jemez in 1621, but the (non-Pecos) Towa-speakers were not finally moved here until around 1706 (Sando 1979b). It is not
Voegelin and Voegelin (1976) is very similar to the above, summarizing the language situations of the Southwest and Great Basin regions. The majority of the article discusses Yuman and Uto-Aztecan languages, which are more the authors’ areas of expertise. They give a short summary of the constituency of Kiowa-Tanoan and of some of the more recent work being done on the languages at the time. They also point out some of the differences between Kiowa-Tanoan languages and Uto-Aztecan languages, namely in the structure and “symmetry” of the vowel system of the former as compared to the latter. Because of such differences, they deem the genetic relationship between the two families, which they do accept, as being quite remote.

In the 1980s and early 1990s, during a hiatus in innovative published language work on Southwestern languages—but as Kiowa-Tanoan came to greater attention in the wider field of linguistics—a few bibliographies appeared which had a fair inclusion of references for the family. McLaughlin (1983) is a working paper that simply lists references for indigenous languages of the western United States. The references are ordered according to language family and language and the bibliography includes about six pages of Kiowa-Tanoan published sources. De Reuse (1992) is a similar general bibliography, but instead focuses on articles and books that deal with incorporation and polysynthesis among languages of the Americas and Paleosiberia. Again, the references are ordered according to language family and it includes two and a half pages on Tanoan (but omits sources on Kiowa for some reason). Among the sources cited are some unpublished papers presented at talks. Finally, Sprott (1989) is a 15-page annotated improbable that the pre-contact Towa Pueblos spoke different dialects which undoubtedly underwent some leveling after the integration at the current Pueblo of Walatowa (Jemez).
bibliography on Kiowa-Tanoan references. For each source cited, he gives a short paragraph describing the contents, but does not aim to make a critical review.

In the mid-1990s, Laurel Watkins taught a comparative Kiowa-Tanoan class at a linguistics summer program associated with the 1995 Linguistic Society of America (LSA) Linguistic Institute hosted by the University of New Mexico. Watkins (1995) is a packet that accompanied the class, including a selection of articles on Kiowa-Tanoan from the 1960s through the 1990s and an updated manuscript of her 1984 *Grammar of Kiowa*. The updates seem to consist primarily of minor edits and revisions, but it comes with a request not to circulate the draft without permission.

The most recent comprehensive handbook of Native North American languages appeared at the end of the century, a roughly 1,000 page tome by Marianne Mithun. Mithun (1999) is made up of several chapters on topics pertaining to language structure and the general status of indigenous languages in the Americas north of Mexico, and includes descriptions of all of the language families attested. Indeed, almost two thirds of the book is composed of these summary family sketches which each include a quick literature review, a short description of the speaker status of the languages, an inventory of sounds and interesting grammatical features from one of the languages of the family, and finally a sample text from the same language. The Kiowa-Tanoan section spends about three pages on the major literature and the language status and presents grammatical facts and a text from Kiowa, using Watkins (1984) as the source. The section gives particular attention to noun class and number marking and otherwise gives a gross overview of the morphology and basic syntax. It is short, but is the best thumbnail
sketch of a Kiowa-Tanoan language currently out there, if one should want such a bare-bones description.

Most recently, two encyclopedia-type articles have been published by Kiowa-Tanoanists, although like the above, they are overviews and do not present novel information. Kroskrity (2005) is an article on “Tewa and the Kiowa-Tanoan languages” for a two-volume encyclopedia of linguistics. The volumes cover a mix of general topics in the field of linguistics and specific languages and language families and are hardly comprehensive. It does give a good two and a half pages to Kroskrity’s article though. He mentions the communities where the languages are spoken, the usual set of interesting structural features (albeit without exemplifying them), a summary of the historical linguistics of the family, some demographics of the usage status of each language, and some points on language and culture primarily based in his own work. He gives a fairly flat structure to the family tree—being more honest about the state of research than earlier summaries—and indicates the questionable status of the Azteco-Tanoan hypothesis at this point without supporting or dismissing it. One curious thing he says is with regard to the Rio Grande Tewa dialects. He states that the “Tewa language has not continued except through the in-migration of speakers from other Tewa-speaking pueblos” at Pojoaque and Tesuque (p. 1092). While this is definitely true for the former, I have never had that impression of the latter. Even with intermarriage and in-migration, Tesuque seems still to retain a distinct dialect of Tewa.

The other encyclopedia entry is Harbour (2011c), a bibliography of Kiowa-Tanoan linguistics for Oxford Bibliographies Online. Much like Sprott (1989), it is annotated, with just a brief summary accompanying the citations. It is accessible only by
subscription, which typically means a reader must have an affiliation with an institution that has a subscription given the cost. From what I have seen of the bibliography, Harbour does cover much of the published Kiowa-Tanoan literature relevant to language and it could provide a quick resource for a researcher wishing to build familiarity with the resources available for the family.

Finally, there have been a few linguistic studies researching general theoretical topics in language structure that have made special appeal to data from Kiowa-Tanoan languages in order to support their investigations. Baker’s (1988, 1996) studies mentioned in section 3.6 above are such examples, although they really only make use of Southern Tiwa data. The following studies are discussed here because they reference two or more Kiowa-Tanoan languages without notable focus on one over any of the others.

Voegelin (1962) is a study of vowel systems in Kiowa-Tanoan and Uto-Aztecan languages to demonstrate the use of distinctive features towards developing a phonological typology. The article firsts lays out the set of vowel qualities from a number of Uto-Aztecan languages and from a representative of each of the four branches of Kiowa-Tanoan. The vowels are organized by frontness and height and are made to appear symmetrical as much as possible. For example, even though it is phonetically central and fairly high, Taos Tiwa “ɔ” /i/ is categorized as a mid-back vowel in order to give an opposition to mid-front /e/ and the high and low back vowels /u/ and “o” /ɔ/. Other features, such as vowel length, tone, stress, and nasalization are considered later, but only nasalization is discussed within the analysis due to inadequate data on the others. In the second part of the article, the vowels of the different systems are assigned distinctive feature values. The article does not offer any satisfactory conclusion to the analysis and
seems to be intended just to show how Voegelin’s analytic method, involving “series
generating components” may be recast using binary features. One empirical impression
that can be taken from this piece, though, is the radical difference in the structure of
Kiowa-Tanoan vowel systems and Uto-Aztecan systems.

The publications on Kiowa-Tanoan in the late 1970s and 1980s elicited a fair
amount of interest in the linguistics theoretical trends of the time, especially Kroskrity’s
Arizona Tewa, Allen et al.’s Southern Tiwa, and Zaharlick’s Picuris Tiwa literature
describing voice and argument marking. The three next research programs thus all were
to pursue these lines to some degree.

M. H. Klaiman was able to take advantage of the growing body of information on
inverse voice constructions to begin reconsidering the so-called “passive” of Kiowa-
Tanoan languages. Kroskity (1985a) had considered an inverse analysis of the Arizona
Tewa voice constructions, but had opted for a passive analysis. Klaiman (1989) argues in
the opposite direction. Comparing Arizona Tewa, Picuris Tiwa, and Southern Tiwa data
to Algonquian Cree examples of a prototypical inverse construction, she notes that there
seem to be greater similarities in these systems than there are between the Kiowa-Tanoan
constructions and passive constructions. Namely, there is no optionality in voice
construction in a direct-inverse system when one of the arguments is a speech act
participant (SAP). Klaiman goes further and associates the differences between the
Algonquian and the Kiowa-Tanoan structures with their conformity to head-marking
morphological patterns (cf. Nichols 1986). Klaiman (1992) expands on this discussion by
taking into account data from a few more languages. The latter is about inverse
constructions more generally and places less emphasis on Kiowa-Tanoan. She also delves
a little bit more into the problems surrounding Southern Tiwa, whose voice constructions show both inverse and passive features. Lastly, Klaiman (1993) is essentially a heavily revised version of Klaiman (1989) which repeats the same arguments for an inverse analysis from the 1989 article while also discussing the problems pointed out in the 1992 article. She brings in a few more examples, especially from Arizona Tewa and Southern Tiwa, and further mentions the passive/inverse construction in Towa, although without any illustration of it.

In the midst of these articles, Klaiman also published a book on grammatical voice constructions. Klaiman (1991) is dedicated to developing a theory of voice based on data from languages from all over the world and constructions that include passive, inverse, and middle voice (as opposed to active/direct voice) as well as issues of control and ontological salience. There is a section of the chapter on inverse voice dedicated to Tanoan languages, although the data and discussion are much akin to what is found in her other articles. More on Klaiman’s views on Tanoan and her general theory of voice constructions will be discussed in chapter 0.

Also early in the 1990s, Rolf Noyer produced a 1992 MIT doctoral dissertation developing a theory of morphology within a generative framework. Noyer’s analysis is within part of the same line of development that would produce the Distributed Morphology framework shortly thereafter (Halle and Marantz 1993). Noyer (1997) is the slightly revised full publication of this dissertation. In this work he looks at certain morphological constructions across a small number of languages, taking into account primarily synchronic, but also diachronic data: agreement in Afroasiatic, particularly Tamazight (Berber-Afroasiatic; Morocco); number agreement and multiple argument
indexation in Nunggubuyu (Gunwinjguan; Australia); agreement, verbal inflection, and
morpheme position in Ket (Yeniseic; Siberia); and, most importantly for our purposes,
number, noun class, and agreement in Kiowa-Tanoan. Noyer examines language data
from each of the four branches of the family and posits two binary features, [±sg] and
[±aug], to account for the number and noun class system. He also argues for a universal
property of agreement in multiple-argument marking wherein number or agent features
will be neutralized in certain combinations in the system.

While I may not share Noyer’s theoretical framework, I would recommend this
study to anyone interested in morphology and morphosyntax under a formalist approach.
It may also offer some significant findings outside of the framework. In particular his
findings on neutralizations in multiple agreement systems are worth following up and his
analysis of Kiowa-Tanoan number and noun class may have some merit outside of
Distributed Morphology. Daniel Harbour builds on Noyer’s analysis for his own research
on Kiowa, thus readers of the latter’s work will find familiarity in Noyer’s. Noyer does
also report on some of his findings in other articles, but since he does not make use of
original Kiowa-Tanoan data, I will not review these here.

Most recently, Fernando Zúñiga also investigated inversion and inverse voice in a
2006 book on alignment and directionality. Zúñiga (2006) explores some of the range of
structural variation with which some kind of hierarchical alignment is expressed. He does
this by examining a small set of American languages in which such hierarchy based
structures are well studied: Algonquian, Kutenai, Sahaptian, Mapudungun, and of course
Kiowa-Tanoan. For Kiowa-Tanoan Zúñiga examines Klaiman’s analysis of Arizona
Tewa, Picuris Tiwa, and Southern Tiwa as well as bringing in some Rio Grande Tewa
mentioned in Kroskrity (1985). Unlike Klaiman, Zúñiga does not take an either-or approach to an inverse versus passive analysis. Rather, passive and inverse are seen to be two different kinds of concepts: inverse is a deictic value that Zúñiga calls “direction” while passive is a valence-changing and role-remapping operation that he considers voice. From this, the Tanoan constructions are considered both inverse and passive, but he notes that Tewa and Tiwa differ from each other in significant ways. Zúñiga also brings in Kiowa data from Watkins, examining the structure and use of the pronominal proclitics and switch-reference. Kiowa shows a substantially different type of system than the Tanoan languages—less of a “pivot-oriented” alignment than the latter—but it is still related and has some added complexities.

The book is a fascinating read on the issues of alignment, direction, and voice, providing cross-linguistic data handily to illustrate the range of variation to be found even within a single linguistic area (the Americas). It does not aim to be comprehensive in its coverage of the phenomena under study nor does it try to get a balanced typological sample. Rather, it explores a few interesting cases in order to develop an analytic framework for voice and directionality. Zúñiga’s analysis of Kiowa-Tanoan will be revisited in chapter 0 in discussion of the development of argument marking.

With data from Kiowa-Tanoan languages having been published in high profile linguistics journals, the number of publications that make any appeal to data from Tewa, Tiwa, Towa, or Kiowa will only continue to grow. I hope to have covered the overwhelming majority of studies that have something significant to say on Kiowa-Tanoan or one of the member languages, but there are many others that make mention of or incorporate Kiowa-Tanoan data in their studies. Such publications make use of
secondary data, hence the reader is recommended to the above reviewed literature for the
best representations of the languages.
4 Methodology

As a comparative-historical linguistic study seeking to reconstruct the ancestral Kiowa-Tanoan proto-language and the paths of change that have led to the modern languages of the family, the primary stratagem in this study will be the modern form of the linguistic comparative method, and associated methods, developed in the field of linguistics since the late 19th century (Bloomfield 1946, Campbell 2013, Hock 1986, Schleicher 1861/1862). The comparative method will be especially pertinent to the contents of Part II, where I will be establishing and discussing regular sound and lexical correspondences among the individual members of the language family from which reconstruction will proceed. The establishment of correspondences is largely just a matter of finding regular patterns that hold between and among the related languages, which are thence largely uncontroversial¹. On the other hand, reconstruction of forms in an unattested proto-language and of undocumented changes between that ancestral form and the modern languages will have to appeal to broader domains of linguistic theory. In particular in the domain of lexical and phonological reconstruction, I will be appealing to findings in phonological typology (Greenberg 1966/2005, 1978, Maddieson 1984), articulatory phonology (Browman and Goldstein 1991, 1992), evolutionary phonology (Blevins 2004, Pagliuca and Mowrey 1987), and sound change (Bybee 2002, 2003, 2005, Chen and Wang 1975, Ohala 1974) in order to analyze and posit the most likely proto-forms. Because the reconstructed forms can be neither proven nor disproven in the absence of historical documentation, some of the reconstructions I end up asserting could

¹ That is not to say that I will not posit any correspondences that may be subject to debate or criticism in future research. As will be seen, there are some apparent correspondences that do not fit the more widely attested patterns of comparison among the languages and are therefore more tenuous.
prove controversial to future researchers. In situations where I think there will be
particular room for debate, I will attempt to present plausible alternative analyses and
arguments for why I choose the analysis that I do.

In addition to the traditional comparative method for performing the
reconstruction, I will also be appealing to the methods of internal reconstruction, and to
theories of grammaticalization and lexicalization. Internal reconstruction (Givón 2000,
Trask 1997), as the name suggests, involves making an intra-linguistic analysis
comparing potentially related forms or processes within a single language that point to
phonological or morphosyntactic structures that were formally extant or productive in the
language, but may be reflected in the modern language only in frozen or idiosyncratic
structures. Such a language-internal analysis will often be necessary as a prerequisite for
isolating cognates for the comparative method. Internal reconstruction may provide
evidence for lexical correspondences, but it is especially useful towards the
reconstruction of grammatical constructions. In this regard, to be a reliable method, it
must make appeal to a coherent theory or coherent theories of grammatical and lexical
change. Thus, my comparative and internal reconstructions in the domain of grammar in
particular will rely heavily on theories of lexicalization (Brinton and Traugott 2005,
2007) and moreover grammaticalization (Bybee et al. 1994, Gildea 1998, Haspelmath
2002a, b, *inter alia*). These theories have demonstrated that there are dominant
constraints and tendencies in how linguistic structures may change and therefore serve as
powerful predictive devices in restricting possible reconstructions.
Hopper and Traugott (2003: 18) define grammaticalization as “the change whereby lexical items and constructions come in certain linguistic contexts to serve grammatical functions and, once grammaticalized, continue to develop new grammatical functions.” Brinton and Traugott (2005: 99-100) revise this definition in order to better highlight the relation between grammaticalization and lexicalization. They describe grammaticalization as “the change whereby in certain linguistic contexts speakers use parts of a construction with a grammatical function. Over time the resulting grammatical items may become more grammatical by acquiring more grammatical functions and expanding their host-classes.” They further narrow this definition with the qualification that “not all instances of fusion or phonological reduction are instances of grammaticalization. Only those which yield functional, closed class items may be considered grammaticalization.” Lexicalization, on the other hand, they define as the change whereby in certain linguistic contexts speakers use a syntactic construction or word formation as a new contentful form with formal and semantic properties that are not completely derivable or predictable from the constituents of the construction or the word formation pattern. Over time there may be further loss of internal constituency and the item may become more lexical. (96)

Both grammaticalization and lexicalization as theories of language change are thus designed to attempt to explain the development of morphosyntactic structures in language. They take into account both formal changes and functional changes and ideally predict what kinds of changes are more likely than others.

Of course the application of the above mentioned methods and theories presupposes some linguistic data to which they can be applied. The comprehensive literature review in chapter 3 above summarizes all written and audio materials—that I have been able to find to date—that describe and provide data on one or more of the
Kiowa-Tanoan languages. It is from these sources that linguistic data will primarily be drawn. Given the range in quality of transcription and analysis among these materials, I will be filtering the data through my own synchronic analysis of the modern languages. Sometimes this will mean re-transcribing language forms to create consistency in representation or to update and/or correct a transcription or gloss when I have reason and evidence for believing the form in the original source is not an adequate reflection of the spoken language. These instances will be noted and the original form cited in the text or in a footnote. Similarly, while I draw as much as possible from trusted primary sources for language examples, there may be instances where I myself construct morphosyntactically complex words or clauses. Such constructed forms will be pointed out when they occur and are used only for exemplifying and clarifying grammatical points for the reader. Obviously no arguments will hinge upon these examples.

Readers familiar with the literature on Kiowa-Tanoan languages will be aware of the limitations in the analysis and reporting of all but a few constructions in most of the languages. As seen in chapter 3, only Kiowa has a book-length published grammatical description, the other languages varying quite a bit in quantity and quality of their analyses. Because of these limitations, I have spent some time in the dissertation preparation process not only collecting all of the material that I could, but also inputting the linguistic data into databases, synthesizing the descriptions and language data, and developing a more coherent picture of the synchronic forms of all of the Kiowa-Tanoan languages. This may seem too obvious a step to be worth mentioning, but I feel it should

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2 Indeed, the original form of this dissertation was to include a grammatical sketch of each of the seven languages as an appendix to the comparative-historical chapters, a writing task which is well underway, but which for pragmatic reasons has been postponed to the purview of postdoctoral work.
be pointed out given the state of published Kiowa-Tanoan studies and the degree to which an inadequate understanding of even one of the languages in a comparative-historical investigation of such a small family could affect the analysis.

4.1 Fieldwork and Data Confidentiality

There is another primary data source on Kiowa-Tanoan languages that was not emphasized in the above sections: the few thousand native speakers of the seven extant varieties! My research has indeed been supplemented with fieldwork among the New Mexican Pueblos. In particular I have worked intensively since 2006 on a language revitalization project at one of the Rio Grande Tewa-speaking Pueblos alongside other linguists from the University of New Mexico, in addition to having also worked to varying extent on other collaborative projects with speakers from various Tewa and Tiwa communities. This experience has greatly elucidated my understanding of these languages, and by extension and analogy, of the rest of the family. This elucidation is reflected in my analysis of the linguistic data encountered both in the course of these collaborative projects and in the published and archival sources.

Despite this fieldwork experience, however, the reader will note that the overwhelming majority of examples are taken from the publicly accessible sources. The reason for this will come as no surprise to anyone familiar with the constraints and conditions on doing linguistic or anthropological research among the Pueblos. These communities are renowned for long having sought to restrict dissemination of information on their cultures, including their languages. This restriction, falling out both from indigenous ideologies and from their historical experience with Spanish and Anglo-
American colonization and government, has been analyzed in terms of secrecy (Brandt 1980, 1981) and control of information (Debenport 2009, 2010). This has often been realized by a refusal to permit researchers access to the communities or to publish on them. Details on these restrictions are too complex to outline here, but must be recognized and acknowledged in any study involving the Pueblos. My impression based on work among these communities and discussion with community members and colleagues suggests that the kind of comparative-historical linguistic analysis performed in the following chapters is abstract enough not to reveal the kind of cultural information the communities wish most to keep away from the prying eyes of outsiders. Nevertheless, I have taken steps in the design of this dissertation in an attempt to mitigate any offense as much as possible. These steps include: a) using data that are already accessible to any researcher willing to make the effort, and b) redacting all newly collected language examples in the published form of this dissertation. Data wholly dependent upon my own fieldwork is fully redacted in order to help respect the ideologies of the communities. Furthermore, as already mentioned in the first section of this introductory chapter, it is my hope that the results of this research may feed back into work towards language revitalization projects in these communities.

3 The restrictions also vary from community to community and indeed opinions on the particular constraints and adherence to them are by no means homogeneous within a given community.
This chapter aims to initiate the reader into the general phonological and morphosyntactic features of the Kiowa-Tanoan languages, particularly those constructions that will form the focus of this dissertation. The time-depth of the family is not believed to be all that great, Proto-Kiowa-Tanoan probably having been spoken approximately 2,000-4,000 years ago, and thus much of the structure of the languages is analogous, if not cognate. However, there is enough variation and (interesting) differences among the languages that will require me to presuppose, and preview, some of the diachronic analysis presented in the following chapters in order to give a description of seven linguistic systems in a meaningfully comparative way. The aim of this chapter, however, is simply to provide the reader with an overview of the synchronic languages so as to be able to evaluate the comparative-reconstructive analysis and arguments to follow.

The grammatical sketch presented here is organized into three primary sections. Section 5.1 provides a quick general overview of the phonological inventory and phonotactic structures of Kiowa-Tanoan languages. This essentially serves as a preview of the more in-depth description of the synchronic phonological systems of each individual language presented in chapter 0. Section 5.2 further elaborates the phonological description by addressing the more idiosyncratic morphophonological features of the family that characterize and add complexity to the lexicon and morphosyntax. Section 5.3 then moves on to describe some of the more salient morphosyntactic constructions of the family. This includes the complex and elaborate pronominal indexation proclitics which will be the focus of Part III of this dissertation.
Thus, this section will only briefly preview the system which is described for the modern languages in much more detail in chapter 0. Section 5.3 will also survey the unique noun class and number-marking system, verbal morphology, and complex clause constructions that the student of Kiowa-Tanoan languages should be familiar with as they go through the rest of this dissertation.

5.1 **Phonology**

The phonemic inventories of Kiowa-Tanoan languages, while not atypical of American languages, are distinct enough from their neighbors that it would be difficult to mistake a Kiowa-Tanoan language for one of the nearby Keresan, Zuni, Uto-Aztecan, Athabaskan, Caddoan, Algonquian, or Siouan languages. In general the family features ejective consonants, some voicing contrasts in consonants, vowel length distinctions, nasal vowels, and tones. Syllable structure tends to be relatively simple and most of the languages do not permit consonant clusters. Morphophonology also tends towards the agglutinative with many bound morphemes perhaps better analyzed as loosely bound clitics than as affixes and morphological and phonological criteria for word boundaries often failing to agree. There are some important fusion processes that must be noted, however. This section will fill out this highly schematic picture and discuss those inter-lingual phonological variations most salient among the seven languages. For more details, see chapter 6.

Kiowa-Tanoan languages have an average-sized consonant inventory (Maddieson 2013a), ranging from 21 to 37 contrastive segments, depending on one’s analysis. Superficial comparison suggests that historically the inventory consisted of a large
number of stops, a small number of affricates and fricatives, two nasals, and a couple of other sonorants. The stops show a four-way contrast between voiceless unaspirated, voiceless aspirated, voiced, and ejective at four places of articulation: bilabial, dental-alveolar, velar, and labiovelar. A pair of alveolar affricates also shows a voiceless-ejective contrast in three out of four of the branches. This inventory will be revised in the reconstruction of Part II, but this is the approximate configuration found in all of the modern languages, despite various shifting and merging. There has been a tendency to spirantize the aspirated stops and nasalize the voiced stops in the Tanoan languages. This has resulted in a larger number of fricatives in some of the languages and a high frequency of nasal stops\(^1\). The labiovelar series has also been effectively lost in Kiowa and Towa. The details of the changes aside, the original plosive-heavy system can still be recognized in all of the languages. The consonant inventory of Rio Grande Tewa is fairly representative of the modern family, illustrating both relatively conservative features (e.g. a four-way stop contrast across four primary places of articulation) and common changes (e.g. spirantization of aspirated stops).

\[^1\] The nasalization of voiced stops has not increased the inventory in any of the languages. The /m, n/ that derive from /b, d/ appear to have simply merged with the historical /m, n/.
<table>
<thead>
<tr>
<th></th>
<th>Labial</th>
<th>Coronal</th>
<th>Palatal</th>
<th>Velar</th>
<th>Labiovelar</th>
<th>Laryngeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unaspirated</td>
<td>p</td>
<td>t</td>
<td>(tʰ)</td>
<td>k</td>
<td>kʷ</td>
<td>ʔ</td>
</tr>
<tr>
<td>Stops</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiced</td>
<td>b</td>
<td>d</td>
<td>g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stops</td>
<td>pʰ</td>
<td>tʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰʷ</td>
<td>x</td>
</tr>
<tr>
<td>Aspirated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stops</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ejective</td>
<td>p'</td>
<td>t'</td>
<td>k'</td>
<td>k'</td>
<td>k'ʷ</td>
<td></td>
</tr>
<tr>
<td>Stops</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affricates</td>
<td>c</td>
<td>ĉ (j)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ejective</td>
<td>c'</td>
<td>ĉ'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affricates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fricatives</td>
<td>s</td>
<td>š</td>
<td>h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiced</td>
<td>(v)</td>
<td>(r)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal Stops</td>
<td>m</td>
<td>n</td>
<td>(ñ)</td>
<td>(ŋ̃)</td>
<td>(ŋ̃)</td>
<td></td>
</tr>
<tr>
<td>Approximants</td>
<td></td>
<td>y</td>
<td>w</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As Table 5-1 shows, the system has a proliferation of obstruents, especially stops, but with synchronic alternations in some sounds that demonstrate sound changes in process. Those segments in parentheses are major segments of a specialized distribution (e.g. major allophones, dialectally restricted segments, borderline phonemic sounds). Chapter 0 will discuss the synchronic sound inventories and major phonological alternations in each language in detail.

The vowel inventory is also of moderate size. There are five or six monophthongal vowel qualities per language with contrasts in length and nasalization. The Tiwa languages, which appear not to have contrastive vowel length, also have a

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2 For this dissertation, Americanist transcription characters will be used for representing the languages. This convention was chosen over the International Phonetic Alphabet (IPA) because of the representation of diphthongs as single characters and the use of the [y] symbol to represent a glide, a convention more familiar to the English speakers of the communities where Kiowa-Tanoan languages are spoken. The IPA correlates to these Americanist transcription characters are provided in chapter 0.
small number of phonemic diphthongs. Vowel qualities are relatively unmarked, showing a three-way height contrast with front unrounded vowels, and back rounded vowels, although Tiwa languages have a high central unrounded vowel. A particularly distinctive vowel quality feature of Kiowa-Tanoan languages in the areas they are spoken is the presence of a front-back distinction in low vowels, e.g. Taos Tiwa ka mother vs. kɔ [kɔ] plant, sow. Not all possible configurations of quality, length, and nasality are represented equally in any of the languages—and some configurations are completely absent—which is a feature that will prove invaluable for the reconstruction presented in chapter 0. These combinations result in approximately 13 to 24 vowels in a given language under analyses to date. The Towa and Taos Northern Tiwa vowel inventories can serve as representative of the variations seen amongst the vowel systems.

Table 5-2: Towa Vowel Inventory

<table>
<thead>
<tr>
<th>Oral</th>
<th>Nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Front</td>
</tr>
<tr>
<td>High</td>
<td>i, iʼ</td>
</tr>
<tr>
<td>Mid</td>
<td>e, eʼ</td>
</tr>
<tr>
<td>Low</td>
<td>æ, æʼ</td>
</tr>
</tbody>
</table>

Table 5-3: Taos Northern Tiwa Vowel Inventory

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Front</td>
<td>Central</td>
</tr>
<tr>
<td>High</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>Mid</td>
<td>(e)</td>
<td>(e)</td>
</tr>
<tr>
<td>Low</td>
<td>a</td>
<td>ø</td>
</tr>
<tr>
<td>Diphthongs</td>
<td>ia</td>
<td>iɔ</td>
</tr>
</tbody>
</table>

---

3 Phonetic diphthongs (or triphthongs) with a final high front or high back element in Tiwa, Kiowa, and Arizona Tewa are here interpreted as vowels followed by a coda glide consonant.

4 As described in chapter 6.7, these vowels are phonetically and phonologically high and back and usually unrounded. The high central unrounded vowel character [i] was chosen following Yumitani (1998) for presentational consistency.
The Towa inventory seen in Table 5-2 illustrates the gross pattern found in Towa, Kiowa, and Tewa: effectively a six-way quality contrast among oral vowels with length distinctions and a corresponding smaller set of nasal vowels. Table 5-3 illustrates the approximate Tiwa vowel systems, although Southern Tiwa and especially Picuris Northern Tiwa have some notable differences from the Taos pattern seen above. These include a nasal central vowel /ɨ̨/ in both, a shift in some of the vowel qualities, the low front vowel in particular, and the near absence of diphthongs in Picuris Tiwa. Despite the strong parallelism in the vowel systems among the languages, vowel correspondences are fairly complex, as the discussion and illustration in chapter Error! Reference source not found. will show.

While also found in Keresan and Athabaskan, and thus possibly an areal feature of the Southwest, the occurrence of tones in Kiowa-Tanoan is fairly unusual among North American languages\(^5\). All four branches of the family appear to show a three-way contrast between low, high, and (high-)falling tones, although they differ in the functional load borne by the tones.

\[(1)\quad \text{Kiowa-Tanoan Tone}^6\]

<table>
<thead>
<tr>
<th>Kiowa</th>
<th>Towa</th>
<th>RG Tewa</th>
<th>Taos Tiwa</th>
</tr>
</thead>
<tbody>
<tr>
<td>k'ɔ́ˑ</td>
<td>ɔ́ˑ (\text{cold})</td>
<td>ɔ́ˑ (\text{sore})</td>
<td>kʷ̃ ə̃ \text{gum}</td>
</tr>
<tr>
<td>k’ɔ̂ˑ</td>
<td>ɔ̂ˑ (\text{knife})</td>
<td>ɔ̂ˑ (\text{buckskin})</td>
<td>te (\text{wagon})</td>
</tr>
<tr>
<td>k̃ ə̃’</td>
<td>ə̃’ (\text{buffalo})</td>
<td>ə̃’ (\text{nighitngale})</td>
<td>k̃ ə̃’ (\text{oak})</td>
</tr>
<tr>
<td>k̃ ə̂’</td>
<td>ə̂’ (\text{cross})</td>
<td>ə̂’ [ə̂’] (\text{smoking})</td>
<td>pha’ (\text{fire})</td>
</tr>
</tbody>
</table>

\(^5\)Many languages and language families of North America have some kind of lexical “pitch accent” system, where there is a tone contrast on a single syllable given prominence. This is found in Northern Iroquoian and Muskogean languages, for example. Prototypical “tonal” languages where every syllable of a word shows a potential tone contrast (albeit usually within certain limitations) are quite rare north of Mexico outside of a few language families (Sherzer 1976).

\(^6\)Words in this example are from the following sources: Kiowa (Watkins 1984), Towa (Yumitani 1998), Rio Grande Tewa (Martinez 1982), Taos Northern Tiwa (Kontak and Kunkel 1987).
Some of the common tone patterns can be seen in (1). Rio Grande Tewa appears to show the greatest degree of contrast among the tones with no strong restrictions on tone sequences within a word, although there are certainly prevalent frequency differences among tone patterns. Towa and Kiowa, on the other hand, seem to be more characterizable as “pitch accent” languages, with every phonological word—prototypically centered around a lexical morpheme—tending to require at least one high or falling tone and showing tighter restrictions on tone sequences. For instance, generally in both of these languages, a high tone cannot occur in a word once there has been a pitch drop, i.e. following a falling tone or a high-low sequence. The tone systems of the Tiwa languages are poorly documented and described, but might lie somewhere between these two gross types of systems. There does not appear to be the same requirement on the phonological word to bear a raised tone, but given the morphological complexity of the languages, there may be a tendency for phonological words to bear some kind of tonal accentual prominence. This unfortunate gap in information on Tiwa tones will mean less certainty in the reconstruction of Proto-Kiowa-Tanoan suprasegmentals for the present.

Of course, the segmental (and suprasegmental) inventory of a language or language family reveals only so much of its phonological character. Perhaps more
noteworthy are the combinatory possibilities of those segments into larger units, i.e. syllables, (phonological) words, and intonation units. Such combinative potential is relevant especially for reconstruction work particularly for the interactions between adjacent vowels and consonants. This is a key factor in identifying cognates as well as tracing historical developments.

Kiowa-Tanoan lexical and syllable structure is largely based on C(onsonant)V(owel) and CVC structures. Tautosyllabic consonant clusters in the onset are to be found only in loanwords from Spanish. Consonant clusters in the coda may be found word-finally only in Tiwa due to a relatively recent process of word-final vowel loss in certain grammatical morphemes. In general all inventory consonants may be found in the onset, although there tend to be restrictions on onset consonants word-internally when the word is not synchronically recognizable as a compound. Coda consonants are restricted to plain sonorants and voiced stops in Kiowa and the Tiwa languages. Tewa and Towa, on the other hand, have undergone a massive reduction in permissible coda consonants. Tewa permits only a coda nasal, neutralized to velar [ŋ] when not assimilating in place to a following consonant, and laryngeals [h, ˀ] in restricted contexts. Towa effectively permits no coda consonants. While descriptions state that /š/ and /l/ may occur as codas when utterance final, these are often elided or resyllabified as onsets when utterance internal, maintaining a consistent CV structure. Examples of these basic syllable patterns are illustrated in (2) below.

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7 Mid-twentieth century American structuralists often analyzed ejective and aspirated stops and labialized velars as consonant clusters, e.g. Trager (1948b) for Taos Tiwa. This analysis will not be followed here.
8 Most disyllabic or longer words can be analyzed as morphologically complex, at least diachronically, the most common type of morphological complexity being constructed by compounding.
9 There is an active process of coda stop devoicing in the Tiwa languages. Moreover, there is a tendency to fricativize these devoiced coda stops in Southern Tiwa.
Both Kiowa and Tiwa permit open syllables or syllables that end in sonorants or a handful of stops. Kiowa does not seem to permit a word-final short vowel in a monosyllabic word (except for highly grammaticalized words). Tewa permits both open syllables and syllables closed by one of the codas specified above. The [ŋ] in the word for buffalo is realized as the release of the / ŋ / and the status of such syllable structures is problematic. Towa permits only the above specified codas in utterance-final position, but has a strong preference for open syllables and such codas are often not pronounced.

Equally noteworthy as the general syllable structures above are the specific combinatorial possibilities of consonants and vowels. In all but the Tiwa languages, the oral-nasal contrast of vowels is lost when in the same syllable as a nasal consonant.

Going hand-in-hand with this is the fact that in the Tanoan languages, voiced stops and nasal stops are almost fully in complementary distribution: voiced stops almost always occur in syllables with oral vowels while nasal stops always occur with nasal vowels.

This is an established historical development of the Southwest Tanoan languages (in contrast to Kiowa) that will be discussed further in chapter 0.

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10 Southern Tiwa data are from Frantz (n.d.). For data from other languages, see footnote 6.
Neutralization of nasal vowels

a. Kiowa (Watkins 1984: 10)

[tôn] be fat but *[tôn] not a possible contrasting word
[nốˑ] I, we but *[nốˑ] not a possible contrasting word
[mîn] about to but *[mîn] not a possible contrasting word

b. Towa (Yumitani 1998: 51)

št[ê] stop (PS.PF) ššt[ê]sa stop (PS.IPF)
t tô[ê] cook (PS.POT) tô[ê]sa cook (PS.IPF)

(3)a illustrates the non-contrastiveness of vowel nasality in Kiowa when co-occurring with a nasal consonant in the same syllable. Example (3)b shows the alternation of oral and nasal consonants when occurring in the same syllable as a nasal vowel. In both of these verbs, the nasalization of the first syllable has spread onto the /a/ of the passive imperfective suffix leading to the consonant alternation. The vowel /æ/ is never affected by nasal spreading, so the oral stop is retained in the perfective. The Tewa and Tiwa languages do not have such active alternations of oral and nasal consonants, but do show evidence of nasalization historically.

Another general sound pattern across the languages is that liquids—[l] in Kiowa, Northern Tiwa, Arizona Tewa, and Towa; [r] in Rio Grande Tewa11 and Southern Tiwa—almost never occur word- or morpheme-initially, although they may occur in word-internal syllable onset position. This too plays a significant role in the discussion of a few developments from PKT to the modern languages (as well as from Pre-Proto-Kiowa-Tanoan to PKT).

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11 While the phonetic sounds show the same kind of distribution across the languages, this does not mean that the sounds are necessarily always cognate. For instance, the [l] of Arizona Tewa does not correspond to the [r] of Rio Grande Tewa.
(4) Distribution of liquids

a. Kiowa (Watkins 1984: 13, 41)
   \[tʰaˡi̞\] boy but *[latʰi̞] not a possible word
   \[pól\] bug but *[lóp] not a possible word

b. Southern Tiwa (Frantz n.d.)
   buru pottery but *[rubu] not a possible word
   mįr cliff but *[rim] not a possible word

c. Towa (Yumitani 1998: 95)
   kʰá·lú baskets but *[lá·kʰá] not a possible word
   tʰí·čile (< tʰí·l-kʰíle) spoon but *[tʰí lkʰíle] not a possible word

The examples in (4) demonstrate that liquids may not occur word initially. In Kiowa (4)a
a liquid may be in a word-internal syllable onset or a syllable coda, including word-
finally. The same is true of Southern Tiwa (4)b. In Towa (4)c the liquid occurs in a
word-internal onset and, as seen in (2) above, may occur in a word-final coda under
restricted conditions, but never in a word internal coda. As seen in the word for spoon
above, if a /l/-final morpheme is bound to a following morpheme, the /l/ will drop or fuse
with the following consonant rather than appear as a coda.

Also common across the languages is the typologically common restriction that
vowel length is only contrastive in open syllables\(^\text{12}\). In closed syllables the vocalic
portion of the syllable tends to correspond phonetically to a short vowel. This means that
some morphemes will show an alternation in vowel-length depending on syllabic
structure, as seen in (5).

\(^{12}\) At first glance, Towa seems to be an exception to this generalization, its only occurring coda consonants,
/l, š/, appearing even after a long vowel. It must be remembered that these consonants tend to elide if they
would actually appear syllable-finally and tend to become onset consonants to a following syllable
whenever the opportunity arises.
Distribution of vowel length

a. Rio Grande Tewa (Martinez 1982: 86, 90, 95)

- **sq̃ŋ** drive (PF) > **saˑn̪í** drive (POT)
- **kiŋ** yell (PF) > **kiˑn̪í** yell (POT)
- **nů(ŋ)** be (ST) > **nůn̪í** be (POT)

b. Kiowa (Watkins 1984: 10, 20, 51)

- **cát** doorway > **cáˑd̪̊ː** in the doorway
- **gûl** write (imp.) > **gûˑl̪ê** write (ipf. hsy.)

A stem that has a morpheme-final consonant will be realized with a short vowel when that consonant appears as a coda. If a vowel-initial suffix is added to the morpheme, however, the final consonant occurs as syllable onset and the inherent vowel length of the morpheme will emerge. Usually that vowel ends up being long given whatever the apparent historical origins of vowel length, but it may also be short, as seen in the last Tewa word (5)a.

There are numerous other patterns in segment combination possibilities that occur on a language-by-language basis. These will be pointed out in chapter 0 as they apply to sound correspondences and reconstruction. One language-specific pattern that should be pointed out here, though, is the productive restriction on consonant-vowel sequences in Kiowa that Watkins (1984) calls “dental-velar switch”. In Kiowa, a high front vowel may never follow a dental/alveolar stop and a mid front vowel may never follow a velar stop. Should morphology or sound change have given rise to one of these illicit combinations, a dental stop will change to the corresponding velar stop (before a high front vowel) and a velar stop will become the corresponding dental stop (before a mid front vowel).
The verbs in (6) illustrate the alternations between velar and alveolar stops. The imperfective hearsay forms in (6)a and (6)b involve a suffix -êˑ which will lead the preceding consonant to be alveolar while the imperfective imperative suffix -îˑ causes the consonant to be realized as velar. It is only when followed by a vowel other than /i/ or /e/ that the original form of the consonant is revealed. Examples (6)c and (6)d show that it is only the place of articulation that alternates, features like aspiration and ejection being retained, and that the vowels have the appropriate effect whether they are oral or nasal.

Not only does recognition of this Kiowa process allow us to identify cognates matching a Kiowa velar consonant to a dento-alveolar consonant in its sister languages, but it also leads to the discovery of mismatched places of articulation among the languages that suggest that some form of this alternation was active before the breakup of Kiowa-Tanoan languages. This line will be followed up further in the chapter 0.

5.2 Morphophonology and Lexical Structure

Beyond segmental inventory, permissible sound sequences, and basic syllable structure, it is also important to consider morphological constraints on phonology. In a given language or language family, this might mean considering phonological alternations that occur at morpheme boundaries, particularly those that are not generalized across the phonology of the language, as well as the typical phonotactic form
of morphemes compared to that of words and syllables. Building on these is further the matter of determining criteria for defining the phonological word as compared to the grammatical word.

Kiowa-Tanoan morphology tends to be highly agglutinative with minimal phonological alternations occurring at morpheme boundaries. Those alternations that do occur—e.g. the L-effect and Š-effect of Towa (Yumitani 1998: 45, 70)—are language-specific and are not generalizable to the family as a whole. Some of these language-specific alternations do play a role in the reconstruction of particular forms and so will be discussed further as relevant.

The one morphophonological alternation that has been recognized across all members of the family (except perhaps Arizona Tewa) is the so-called consonant ablaut that affects the initial consonant of a verb stem in certain constructions, namely nominalization, verbal compounding, and stativization. These will be described further in the following section on Kiowa-Tanoan morphosyntax. Sound changes have altered the details of the alternation from language to language, but essentially it must have originally involved an ejective stop or affricate or a voiced stop alternating with its plain voiceless counterpart, plus a handful of other alternations. Nasalization of the voiced stops in Tanoan languages essentially means that ablaut involves alternation of a nasal stop with a voiceless stop. The specific ablaut pairs for each language appear in Table 5-4 and examples of the alternation follow.
Table 5-4: Kiowa-Tanoan Consonant Ablaut Alternations

<table>
<thead>
<tr>
<th>Kiowa</th>
<th>Rio Grande Tewa</th>
<th>Northern Tiwa</th>
<th>Southern Tiwa</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td>b ~ p</td>
<td>p' ~ p m ~ p</td>
<td>p' ~ p m ~ p</td>
<td>t' ~ t m ~ p</td>
<td></td>
</tr>
<tr>
<td>d ~ t</td>
<td>t' ~ t n ~ t</td>
<td>t' ~ t w ~ k</td>
<td>t' ~ t h ~ k~x</td>
<td>k' ~ k n ~ t</td>
</tr>
<tr>
<td>z ~ c</td>
<td>k' ~ k w ~ x w</td>
<td>k' ~ k w ~ x</td>
<td>t' ~ s h ~ h</td>
<td></td>
</tr>
<tr>
<td>g ~ k</td>
<td>kw' ~ kw h ~ kʰ</td>
<td>c' ~ c h ~ x</td>
<td>ċ' ~ ś</td>
<td></td>
</tr>
<tr>
<td>h ~ tʰ</td>
<td>c' ~ c w ~ k w</td>
<td>? ~ k</td>
<td>? ~ k (p ~ v)</td>
<td></td>
</tr>
<tr>
<td>h ~ kʰ</td>
<td>ċ' ~ ċ y ~ c y ~ c</td>
<td>ċ ~ ś</td>
<td></td>
<td></td>
</tr>
<tr>
<td>k' ~ c/k¹³</td>
<td>(y ~ ś)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(7) Towa (Heins 1994: 41; Yumitani 1998: 59)

a. kʷtx' tet'élê
   kʷtx' te=t'élê
   rib 1s>3i=eat.PF
   I ate a rib

b. dô /tosélen̄ bæ̂æ
   dô' tö=séle-nó bâ·
   that 1s>3bas>3s=eat.inc-let.PF
   I let him eat.

(8) Rio Grande Tewa (Dozier 1953: 124; Martinez 1982: 76)

a. uví e'nú wîmmûʔ
   uví e'nú wî=mûʔ
   YOUR boy 1>s>2s=see.PF
   I saw your boy.

b. na=puwغ=da'pó̄
   na=pw̄=da'-pó̄
   S/he asked to see it.

(9) Picuris Northern Tiwa (Nichols 1994a: 87)

a. náwɛlmen
   O-na-wélm-en
   3s.itr-NA-dig-sb
   As he dug...

b. tox'ialołō pēlma máx'el-say
   tox'ia-loło pēl-ma ma-x'el-say
   coyote-old.man hole-into 3s.rfl-dig-begin.PF
   The old coyote began to dig into the hole.

The underlined (a) forms in each of the above illustrate the non-ablauted verb stems and the (b) forms shows the stem with ablaut when compounded with another verb. Note that the ablauted stem form may show other changes, including tone in (7) and both tone and segmental material in (8). Ablaut appears to be no longer productive in any of the

¹³ Ablaut has apparently been losing ground in Kiowa for some time. Ablauting stems are highly unpredictable from a synchronic perspective.
languages and they vary in how much of it they have retained, Rio Grande Tewa seeming to have retained the most and Kiowa the least. But, it is present in all of the languages and seems to descend from the proto-language. More discussion of ablaut will appear in chapter 0 as it pertains to the reconstruction of stem-initial consonants.

Despite the robustness of Kiowa-Tanoan morphology which can give rise to some rather elaborate and lengthy grammatical words, the base morphemes of the language are essentially monosyllabic. Lexical morphemes are overwhelmingly analyzable in historical perspective as CV(·) or CVC, although other morphological and phonological constraints may obfuscate this fact. A purely synchronic analysis of any one of the languages, however, may not arrive at the same conclusion. A significant proportion of the lexicon in all of the languages is comprised of compounds consisting of two or more lexical morphemes. Most of these compounds are synchronically transparent, but processes of lexicalization, the loss of lexical roots (outside of compounds), and sound changes have obscured the origins of many, producing multisyllabic lexical items that are unanalyzable or only partly analyzable. A similar process has happened with grammatical affixes that have become fossilized with the roots to which they attached, which also has resulted in disyllabic or longer words. Chapter 10 will show that these processes have in

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14 For example, many lexical morphemes in Towa may be analyzed as CVC even though the language’s phonotactic constraints effectively allow only open CV(·) syllables. When a conflict arises, the morpheme’s final consonant is either deleted or, when possible, resyllabified as the onset of a following syllable.

Less apparently outside of a comparative-historical perspective, Arizona Tewa has numerous monomorphemic lexical morphemes of the form CV₁(·)lV₁, where the subscript “1” indicates that the vowels on either side of the lateral have the same quality. Historically, these morphemes were CVC, the /l/ being a coda, as seen by comparison with cognate Tiwa and Kiowa forms. However, at some point before the breakup of the Tewa languages, CVC syllable structures began to become less permissible, coda consonants either being lost, merged, or resyllabified as onsets. It appears that Tewa salvaged its coda /l/’s by the latter process, adding a vowel following the consonant that echoes the quality of the vowel preceding. This is retained only in Arizona Tewa, however, Rio Grande Tewa having lost these now intervocalic /l/’s. See chapter 10 for further elaboration.
particular been substantially realized in Tewa. Illustration of both monosyllabic and unanalyzable multisyllabic lexical morphemes from the languages is given below.

(10) Basic (monosyllabic) stems

<table>
<thead>
<tr>
<th>Kiowa</th>
<th>RG Tewa</th>
<th>S Tiwa</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td>c’ó’</td>
<td>stone</td>
<td>k’í</td>
<td>fí</td>
</tr>
<tr>
<td>sú</td>
<td>arrow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p̂áy</td>
<td>sun</td>
<td>phar</td>
<td>šó</td>
</tr>
<tr>
<td>sép</td>
<td>rain</td>
<td>čëp</td>
<td>wîl</td>
</tr>
</tbody>
</table>

(11) Transparent compounds

<table>
<thead>
<tr>
<th>Kiowa</th>
<th>RG Tewa</th>
</tr>
</thead>
<tbody>
<tr>
<td>t’̂òlt̂ýn</td>
<td>wqˑte automobile</td>
</tr>
<tr>
<td>(&lt; t’̂òl liver + t̂ýn small)</td>
<td>(&lt; wqˑ wind + te wagon, structure)</td>
</tr>
<tr>
<td>k’̂ólpʰaqu</td>
<td>p’ǒhpí spring (of water)</td>
</tr>
<tr>
<td>(&lt; k’̂ól neck + pʰá’é be tied)</td>
<td>(&lt; p’ó water + piˑ exit)</td>
</tr>
</tbody>
</table>

(12) Obscure compounds

<table>
<thead>
<tr>
<th>Kiowa</th>
<th>RG Tewa</th>
</tr>
</thead>
<tbody>
<tr>
<td>kyáysɔˑté</td>
<td>sóvóʹ moustache</td>
</tr>
<tr>
<td>(&lt; ? kyáy enemy + sɔˑté ??)</td>
<td>(&lt; sóʹ mouth + phó hair)</td>
</tr>
<tr>
<td>t’elb̂ó’</td>
<td>čuˑĝéˑ ~ čuˑĝéˑ hawk, chicken hawk</td>
</tr>
<tr>
<td>(&lt; t’el buttocks + bòˑ ??)</td>
<td>(&lt; ?? čuˑ dead + ĝéˑ ??)</td>
</tr>
</tbody>
</table>

The words in (10) illustrate the basic Kiowa-Tanoan root structure which serves as the effective default target form in a comparative-historical study such as this. Example (11) shows the typical productive process of compounding that is prevalent in all of the languages, wherein two or more root forms of various lexical categories compose a single grammatical word. The word forms in (12) represent the by no means rare instances of old compounds whose historical compositionality has begun to be obfuscated by lexical loss and phonological changes. Part of the challenge for the analysis of word-internal consonants in chapter 10 is to determine the historical constituents of such compounds.
Aside from the productive compounding, bound grammatical morphology commonly creates polysyllabic word units. As is common in indigenous American languages, much of this morphology is affixed to the verbal piece while most other lexical categories are morphologically simpler, and thus tend to be phonologically shorter. Phonological developments in the grammaticalization process of these bound morphemes have ensured that there tend to be relatively few problems in such polysyllabic words fitting the phonotactic restrictions of the languages. As noted above, phonological alternations at morpheme boundaries are few in number and not generalizable across the seven members of the language family. Word formation thus tends to be fairly straightforward, at least according to descriptions published to date.

Word formation is straightforward, that is, depending on how one defines the unit “word”, a question with a non-trivial answer. As argued by Dixon and Aikhenvald (2002), Dixon (2010), and Haspelmath (2011b) among others, the “word” is not a homogeneous unit even within a single language and different semantico-pragmatic and structural criteria may lead to different results when defining the boundaries between words. Dixon therefore argues that the notion of “word” needs to be divided into at least two distinct types of units: the phonological word and the grammatical word. Sometimes within a given utterance or construction these units will align, isolating an unambiguous “word” on all counts, but sometimes they will not. Kiowa-Tanoan languages seem to provide strong grounds for the application of this model. Morphemes

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15 Dixon and Aikhenvald (2002) do admit that other types of “word” may be established by further criteria. For example, they cite Packard (2000: 7-14) who suggests for (Mandarin) Chinese that one could differentiate the orthographic word, sociological word, lexical word, semantic word, phonological word, morphological word, syntactic word, and psycholinguistic word. See also Haspelmath (2011b) for a more critical perspective on linguists’ definition of the “word”.

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that are clearly defined as bound within a morphological template to one unit by morphosyntactic criteria may appear to be non-bound by phonological criteria, or bound to a completely different unit. A glimpse of this kind of mismatch has already been suggested above in mentioning the resyllabification of the only permissible codas in Towa. When one considers that this resyllabification most notably occurs with a /š, l/ at the end of a (grammatical) word, the result is conflicting dictates by the morphosyntax and phonology.

(13) Towa grammatical-phonological word misalignment (Yumitani 1998:22, 71)

a. vē-læ ŋji
   vē-lₐ-š jə-ši
   man-1 3D,ITR-fall.PF
   Men (du.) fell off.

b. dō-čtiᵉ-ʔó
   dō-ž kʰæ-ʔó
   that-I T/A 3D,RFL-wake.up.PF
   They (du.) woke up.

In (13)a the inverse suffix -š morphologically bound to the noun on its left is phonologically resyllabified as the onset of the otherwise vowel-initial syllable to the right. A similar resyllabification is seen in (13)b, but morphophonological processes lead to a sequence of phonological fusion: /a/ plus /i/ is realized as just [i] and /š/ plus /kʰ/ are fused and syllabified as a syllable onset [č] (these examples also demonstrate the L-Effect, fusing the morpheme final /l/ with the following consonant). Yumitani (1998) describes the word boundaries as given in the examples above. However, as will be discussed in later chapters, there is evidence that the CV syllables that include the verbal indexation proclitics in such examples may tend to be phonologically bounded to the
word on the left, i.e. like the indicated phonological forms to the right (the + indicating the boundary between phonological words).

Previous researchers have tended to define and represent words in Kiowa-Tanoan languages on the basis of morphosyntactic patterns. The picture these descriptions have painted shows a prototypical North American language family, with a polysynthetic verb construction—including both prefixes and suffixes as well as compounding and incorporation—and light suffixation on nouns and adjectives. This is not to say that researchers have ignored phonology. Yumitani (1998), for example, describes resyllabification and some other phonological processes in Towa—particularly the consonant fusing L-effect and Š-effect—which result in word-boundary conflicts. However, they are discussed only in terms of phonology and the implications in terms of the notion of “word” are not analyzed. On the other hand, Harbour (2003:548) builds on Watkins’ (1984) description of Kiowa phonology and morphophonology to arrive at the conclusion that the pronominal “prefixes” that attach to verbs are better deemed “clitics”. This designation thus admits to the only partial phonological integration of these morphemes into the verbal word as defined morphosyntactically.

It should also be noted that in some language revitalization projects among the Tewa and Tiwa Pueblos of New Mexico which have opted to develop a writing system for their languages, speakers appear to prefer those pronominal proclitics as separate orthographic words, i.e. separated by spaces. This desire on the part of speakers does not necessarily entail that the pronominal elements morphosyntactically bound to the verb are phonologically aberrant. One could posit that the primary motivation for writing the pronominals separately is due to habituation to English orthography where pronouns are written as separate words and lengthy orthographic words are relatively few and far between. While this could certainly be a factor in the decision, the very fact that this is structurally even feasible in
Kiowa (Laurel Watkins, personal communication). These three caveats—the resyllabification of consonants and pronominals in Towa, Harbour’s discussion of prefixes versus clitics, and speaker intuitions and preferences for a non-bound representation—themselves should be enough to beg the question as to how the “word” in Kiowa-Tanoan should be represented.

In my own research on Rio Grande Tewa, I have found that not only do the pronominal proclitics, among other morphological constructions, not firmly attach phonologically to the verb to which they’re morphosyntactically bound, but they often seem to be phonologically affixed to a preceding element with which they have no morphological constituency. That is, the pronominal proclitics are bound to the right by grammatical word criteria and bound to the left by phonological word criteria. Compare the phonological boundedness of the underlined sequences in the top phonetic line of the examples in (14) with the morphological boundedness of the morpheme in the second line.

(14) Tewa grammatical-phonological word misalignment.

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</tr>
</tbody>
</table>

a. DF bow=TOP 1S>3S-sell.INC-finish.PF=ALREADY  
I have already finished selling the bows.

b. 1S=TOP 1S>3>RFL-bow-sell.INC-finish.PF=ALREADY  
I have already finished selling bows.

c. 1S=TOP 1S.ITR-want Roadrunner 1S>3S-tell.POT=CPL 3S.ITR-come-POT=CPL  
I want to tell Roadrunner (a personal name) to come.

the language warrants taking a closer look at morphophonology. For instance, one could not even hope to separate the bound pronominals from the verb in the neighboring Apachean languages or in other polysynthetic languages such as Iroquoian or Caddoan.
The examples given in (14) provide evidence for this misalignment primarily in two ways (only one of which is observed in the written representation above). The first piece of evidence is seen in the allophony of /d/, which is pronounced as a tap [ɾ]—represented here with “r”—when intervocalic, at least within a “word”. The /d/-initial pronominal proclitics show just such allophony when they follow a vowel, as seen in all three of the above sentences. However, a verb stem-initial /d/ does not undergo such tapping, even when intervocalic in a rapid utterance, as seen in the verb want in (14)c. The other primary evidence, which is not seen in the written form above, is the potential for pausing. In both (14)a and (14)b, the speaker paused following the pronominal proclitic without feeling the need to reissue the pronominal proclitic when they resumed. I have heard such pauses on numerous occasions.

The degree to which this “tug-of-war” of word criteria—shall we say “tug-of-word”?—applies synchronically within each of the languages has still to be explored further. When this word misalignment is not under discussion, language examples will be structured to show the grammatical word. It will be seen in chapter 10 and 0, though, that recognition of this misalignment is important to understanding certain sound correspondences that seem to be exceptions to the regular patterns identified to date\(^\_1\).\(^\_7\)

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\(^\_1\) While not as pertinent to the comparative reconstruction addressed in this dissertation, it should also be noted that lexical compounds, including noun incorporation constructions, also may show misalignment between the grammatical and phonological word. Indeed some or all of the languages may have a formal contrast between compounds that constitute a single phonological word and those that are composed of multiple phonological words. The poverty of phonological alternations at morphological boundaries or at the level of the phonological word render many instances ambiguous, however, at least pending further investigation.
5.3 Morphosyntactic Structure

As with the phonology, there are general patterns of morphosyntax that are characteristic of all of the Kiowa-Tanoan languages. This section touches on a number of such basic constructions that are important to recognize and understand in any study of the family.

5.3.1 Morphological Type

As will already have been gleaned, the languages can be typologized by the classic, if imprecise, label “polysynthetic”, meaning they have the potential to create large polymorphemic (grammatical) words, incorporate nouns, and index multiple arguments, and they realize this potential quite frequently. However, this morphology is largely agglutinative, with little blurring of the boundaries between synchronic morphemes and many of these bound grammatical morphemes being better deemed clitics than affixes. In modern linguistic terminology, the languages are considered to be non-configurational head-marking languages (cf. Baker 1996, Hale 1983, 1992, J. Nichols 1986, 1992), meaning that they permit discontinuous constituents, otherwise do not depend on word order for specifying argument roles, and tend to mark argument roles on the head rather than on the dependents.

Their status as non-configurational and head-marking is not absolute though. They do make use of constituency and have some dependent-marking constructions. All of the Southwest Tanoan languages make use of an agentive case marker, Tewa and Kiowa both use a dependent-marking possessive marker, and all of the languages use postpositions for oblique arguments. Constituent order, while flexible and
grammaticalized towards the expression of pragmatic status, tends to be verb-final.

Typical orders with respect to the A, O, S, and V\(^{18}\) constituents are AV, OV, AOV, SV, and VS, but other permutations are possible. Examples of these clause features appear below.

(15) Kiowa (Harbour et al 2012: 99, 100)

a. \(k^\bullet te \) háyciki \(t^\bullet k^\circ\)út \(k^\gamma\)k\(\hat{\circ}\)t\(\circ\) \(\hat{\mathring{e}}d\)\(\hat{\circ}\) \(h\hat{\mathring{e}}\)l
b. \(p\hat{\mathring{a}}=al\) ótk\(\hat{\alpha}\) p\'é \(d\hat{\mathring{e}}h\)el m\(\hat{\alpha}\)y\(\hat{\gamma}\)

The Wichitas gave a pumpkin to Grandfather Haitsiki.

(16) Rio Grande Tewa (Harrington 1947: 112)

a. \(wí y\hat{\alpha} r\hat{\alpha} b\hat{\alpha} d\)ik\(\hat{\alpha}\) \(\hat{\mathring{i}}h\hat{\mathring{e}}ri\) w\(\hat{\alpha}\)ye k\(\hat{\alpha}^p\)i \(\hat{\gamma}^\gamma\) \(\hat{\alpha}\)
\(wí y\hat{\alpha} d\)i \(b\hat{\alpha} d\)i\(\hat{\alpha}^\nu\) \(\hat{\mathring{i}}h\hat{\mathring{e}} di\) w\(\hat{\alpha}\)ye k\(\hat{\alpha}^p\)i \(\hat{\gamma}=\hat{\alpha}\)

On week when they were out, we found two Whitemen...

b. n\(\hat{\alpha}\)q\(\hat{\alpha}^\nu\) \(\hat{\gamma}\) \(p\hat{\alpha}q\)y\(\hat{\dot{a}}\) \(n\hat{\alpha}\)q\(\hat{\alpha}^\nu\) k\(\hat{\alpha}^p\)i

...we captured these Whitemen.

(17) Picuris Northern Tiwa (Nichols 1995b: 226, 235)

a. y\(\hat{\alpha}n^t\) iy \(t^\nu o\) l\(\hat{\alpha}e\) ne \(\hat{\gamma}p\^\nu\) \(\hat{\alpha}n\) \(\hat{\dot{a}}\) \(\hat{\alpha}m\)\(\hat{\gamma}\)h\(\hat{\dot{a}}\)c\(\hat{\gamma}\)
\(y\(\hat{\alpha}n^t\) iy \(t^\nu o\) l\(\hat{\alpha}e\) ne=p\(\hat{\alpha}\) \(\hat{\gamma}a=p\(\hat{\alpha}n\)\(\hat{\gamma}\) \(\hat{\alpha}m\)\(\hat{\dot{a}}\)h\(\dot{h}\)c\(\hat{\gamma}\)

The Sun is about to make war on you.

b. \(\hat{\alpha}\)\(\hat{\alpha}t\)op\(\hat{\alpha}^\nu\) \(n\hat{\dot{a}}\) \(t\)i\(\hat{\alpha}l\)h\(\hat{\dot{a}}\)hu hu\(\hat{\alpha}\)k\(\hat{\alpha}\) k\(\hat{\alpha}n\)\(\hat{\alpha}\)n\(\hat{\dot{a}}\)y
\(\hat{\alpha}\)\(\hat{\alpha}t\)op\(\hat{\alpha}^\nu\) \(n\hat{\dot{a}}\) \(t\)i\(\hat{\alpha}l\)h\(\hat{\dot{a}}\)hu hu\(\hat{\alpha}\)k\(\hat{\alpha}\) k\(\hat{\alpha}n\)\(\hat{\alpha}\)n\(\hat{\dot{a}}\)y

I am carrying my dead grandmother to Kan\(\hat{\gamma}\)in.

---

\(^{18}\) For those unfamiliar with this notation: A indicates the subject or “Agent” of a transitive clause; O indicates the Object of a transitive clause; S indicates the single argument or “Subject” of an intransitive clause; V indicates the clause Verb.
The (a) sentences above all show verb-final order, the most frequently occurring configuration. (15)a does illustrate pragmatic marking on the recipient, kʰọ ɬe háyckikí: *Grandfather Haitsiki*, by fronting the constituent before the expression of the agent, t’ó kút *Wichitas*. The sentence in (15)b demonstrates a non-configurational property of Kiowa in the discontinuous constituent páʔal...mą́yí *another woman*, the pieces of which occur at opposite ends of the sentence. Clause (16)b, which occurs in a text shortly after the utterance in (16)a, right-dislocates the patient, ną́įŋ k’ép’í *these Whitemen*, after the verb, thus appearing as an instance of AVO order. (17)b is similar in being verb-medial but the elements following the verb are oblique participants: a direction adverb, huk’e *southeast*, and a postpositional phrase, kąńįn’ay to *Kan’in*. Of course these examples only scratch the surface of the pragmatically determined syntactic ordering, which is underexplored in all of the languages.

5.3.2 Nominal Morphology

The morphological templates of nouns and verbs is the most strikingly parallel general feature of Kiowa-Tanoan, none of the languages having radically innovated away from the historical structure. Nouns tend to be morphologically simple, although not as much as in neighboring language families, which show less dependent marking. Aside from the rampant compounding upon which much of the lexicon is built, nouns may take a number-marking suffix, which is intimately tied into a noun class system. In all but Kiowa, an agent case marker may be attached, following the number marker, and all of the languages have postpositional enclitics. The details of course vary across the languages. In terms of number-marking, Kiowa, Tewa, and Towa generally contrast an
unmarked number, i.e. a nominal form without an overt number morpheme, with an overtly coded number, indicated by a suffix. Samples of this marking appear in (18). The Tiwa languages, on the other hand, mark all numbers with an overt morpheme on nouns, as seen in (19).

(18) Number-marking in Kiowa, Tewa, and Towa

<table>
<thead>
<tr>
<th>Kiowa</th>
<th>Rio Grande Tewa</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td>cê-horse</td>
<td>cê-gə-horses</td>
<td>kôô-aunt</td>
</tr>
<tr>
<td>gú-ribs</td>
<td>gú-də-rib</td>
<td>k'í-woman</td>
</tr>
<tr>
<td>t'æ-person</td>
<td>t'æ-ʃ-people</td>
<td>pó-drums</td>
</tr>
</tbody>
</table>

(19) Number-marking in Taos Northern Tiwa

liw-(e)nə-woman | liw-(e)nemę-women
p'ian-(e)nemę-mountain | p'ian-(e)nę-mountains

Case markers and postpositions always follow the overt number marker (20)a except sometimes in Kiowa (20)b and Taos Northern Tiwa (20)c, where they tend to attach directly to the noun stem in place of the number marker (depending on the construction).

(20) Nominal number marking and postpositions

a. Towa (Yumitani 1998: 71)
   ní-t'aetæ by them
   ní-t'æ-ʃ-tæ that-I-AGT

b. Kiowa (Watkins 1984: 93)
   tá-de eye tá-gə-eyes tá-gya in the eye(s)

c. Taos Northern Tiwa (Trager 1935-1972)
   ƚtu-na wagon ƚtu-ŋę wagons ƚtu-ɓo with a wagon/with wagons

While not as well described for any of the languages, all or most of them appear to have grammaticalized information structure-marking morphemes which encliticize to the element receiving pragmatic marking, very often a noun. These elements appear to be more loosely bound than the number and case markers and tend to follow them.
The glosses in (21) suggest that the information markers of Kiowa are semantically still relatively rich and not as grammaticalized as those in Tanoan. Gardiner (1977a, b) provides the only mention of such markers in Tiwa, two of which are seen in (22). The glosses of “topic” and “focus” markers in (23) are based on my own analysis of the language to date. While the morphemes are mentioned in Speirs (1966) as markers of “emphasis”, their respective distribution has not previously been thoroughly studied.
5.3.3 Verbal Morphological Template

Verbal morphology tends to be more elaborate than the nominal morphology, as suggested by the “polysynthetic” classification often given the languages. All of the Kiowa-Tanoan languages share the morphological verb template of (24).

(24) PRON. PROCL. - ADV. - INC. NOUN - INC. VERB - MAIN VERB - VAL/TAM - SUB. ENCL.

Minimally, a verb construction must be composed of a main verb, a pronominal proclitic (PRON. PROCL.), and a tense-aspect-mood (TAM) suffix, although these latter two may have null morpheme members\(^\text{19}\). Valence suffixes (VAL) serve to indicate either a reduction or increase in the number of core arguments the verb takes. Subordinate enclitics (SUB. ENCL.) mark the syntactic status of a clausal verb with respect to other clauses within the utterance, serving to mark the verb as “deranked” (Cristofaro 2003, Stassen 1985). Other constructions in the language may result in an incorporated noun (INC. NOUN), an incorporated verb (INC. VERB), or the affixation of one of a closed set of miscellaneous “adverbial” elements (ADV.) that may be morphologically bound within the verbal complex. These various components will be described in more detail in the following sections.

5.3.4 Pronominal Indexation

The pronominal proclitics serve to index the core arguments of the predicate headed by the verb. They may encode from one to three arguments, namely the S, A, O,

\(^{19}\) In particular, third person singular S pronominal proclitics and third person singular A acting on third person singular P pronominal proclitics (3S>3S) are realized by null marking in all but Tewa. Imperative constructions take null TAM marking in the Tiwa languages. The situation with TAM marking is a little more complicated in Kiowa, Tewa, and Towa due to a high degree of fusion with the verb stem.
and “dative\textsuperscript{20}” or some combination thereof, overtly indicating the person (first, second, or third) and number (singular, dual, plural, inverse, or some subset thereof) of the argument(s). This encoding is packaged in mono- to disyllabic forms which are synchronically best considered portmanteau morphemes, although they are recognizably compositional in historical perspective. The combinatory possibilities of person, number, and argument role suggest that there should be some hundreds of these pronominal proclitics, but various conflations, rankings, and simplifications result in between about forty and ninety proclitics per language (exact numbers depending on analysis).

Based on the number of arguments a given proclitic encodes and the specific semantico-syntactic role the respective arguments play, these proclitics are divided minimally into four identifiable major sets: an intransitive set (indexing only S), a transitive set (indexing A and O), an intransitive-dative set (indexing S and D(ative)), and a transitive-dative, i.e. ditransitive (indexing A, O, and D). A fifth set, which may be called “reflexive”, is also identifiable within all of the languages. Although it is recognizably derived from the transitive set, it has become a formally divergent paradigm in Tewa and Tiwa, where at least some proclitic forms are found only in the reflexive. While Kiowa and Towa do not show the same formal divergence, they do show functional characteristics of the reflexive proclitics that suggest they can be considered to belong to a distinct paradigm. An example of part of one of these extensive inventories of proclitics appears in Table 5-5 below.

\[\text{20 Use of this term will be described more fully in Part III.}\]
Table 5-5: Taos Northern Tiwa intransitive, transitive, and reflexive proclitics

<table>
<thead>
<tr>
<th>O→S/A</th>
<th>Ø</th>
<th>1S</th>
<th>1NS</th>
<th>2S</th>
<th>2D</th>
<th>2P</th>
<th>3S (A)</th>
<th>3I (B)</th>
<th>3P (C)</th>
<th>RFL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>ø</td>
<td>ø</td>
<td>ø</td>
<td>ø</td>
<td>ø</td>
<td>ø</td>
<td>tì</td>
<td>tì</td>
<td>tì</td>
<td>tì</td>
</tr>
<tr>
<td>1D</td>
<td>ø n</td>
<td>ø n</td>
<td>ø n</td>
<td>ø n</td>
<td>ø n</td>
<td>ø n</td>
<td>ò n</td>
<td>ò n</td>
<td>ò n</td>
<td>ò n</td>
</tr>
<tr>
<td>1P</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>2S</td>
<td>ø</td>
<td>ø</td>
<td>ø</td>
<td>ø</td>
<td>ø</td>
<td>ø</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>2D</td>
<td>mɔn</td>
<td>mɔn</td>
<td>mɔn</td>
<td>mɔn</td>
<td>mɔn</td>
<td>mɔn</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>2P</td>
<td>mɔ</td>
<td>mɔ</td>
<td>mɔ</td>
<td>mɔ</td>
<td>mɔ</td>
<td>mɔ</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>3S (A)</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
<tr>
<td>3D</td>
<td>ø n</td>
<td>ø n</td>
<td>ø n</td>
<td>ø n</td>
<td>ø n</td>
<td>ø n</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>3I (B)</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>3P (C)</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>XXXXXXXXXX</td>
<td>XXXXXXXXXX</td>
<td>XXXXXXXXXX</td>
<td>X</td>
</tr>
</tbody>
</table>

The above proclitics distinguish person and number for all core arguments, although there are some homophonous forms. The columns indicate the person and number of the O argument, if any, while the rows indicate this information for the A or S argument. Such proclitics will be discussed thoroughly in Part III.

A prominent feature involving these pronominal proclitics is a restriction on certain person-argument role combinations (indicated by X’s in Table 5-5) which lead to voice alternation constructions in Tiwa and Towa and patterns of contrast reduction in Kiowa and Tewa. The person-argument role restrictions are based on the typologically common person-animacy-topicality hierarchy (Silverstein 1976, Klaiman 1991, Zúñiga 2006) which ranks speech act participants (first and second person) above third person, animate entities above inanimate entities, and more topical referents over less topical referents. The way this hierarchy plays out in Tiwa and Towa is that they lack pronominal proclitics that index a third person A argument acting on a first or second person O or D argument. In order to express such argument combinations, these
languages make use of a passive or inverse voice\textsuperscript{21} construction which reduces the
valence of the verb, indexing the speech act participant O or D argument by the
intransitive and intransitive-dative pronominal series respectively. The third person A
argument, if expressed by an overt referential element, receives no indexation on the verb
and is marked by an agentive case enclitic (which is identical to the instrumental case
marker).

\begin{enumerate}
\item \textbf{Southern Tiwa obligatory passive (Rosen 1990: 683, 697)}
\begin{enumerate}
\item \textit{sianiôde} \textit{timuβßan}  
\hspace{1cm} \textit{sian-ide} \textit{ti=mu-ban}  
\textit{man-S} 1S>3S-see-PST
\item \textit{sianiòeßba} \textit{temučeßan}  
\hspace{1cm} \textit{sian-ide=ba \ te=mu-ce-ban}  
\textit{man-S=AGT} 1S.ITR=see-PASS-PST
\end{enumerate}
\begin{enumerate}
\item \textit{sianiôde} \textit{timuβßan}  
\hspace{1cm} \textit{sian-ide} \textit{ti=mu-ban}  
\textit{man-S} 1S>3S-see-PST
\item \textit{sianiòeßba} \textit{temučeßan}  
\hspace{1cm} \textit{sian-ide=ba \ te=mu-ce-ban}  
\textit{man-S=AGT} 1S.ITR=see-PASS-PST
\end{enumerate}
\begin{enumerate}
\item I saw the man.
\item The man saw me.
\end{enumerate}

\item \textbf{Towa obligatory passive (Yumitani 1998: 189)}
\begin{enumerate}
\item \textit{nì} \textit{John} \textit{tami}  
\hspace{1cm} \textit{1S John} 1S>3S=see.PF
\item \textit{John=òe ni} \textit{i=mìwê}  
\hspace{1cm} \textit{John=AGT 1S} 1S.ITR=see.PASS.PF
\end{enumerate}
\begin{enumerate}
\item I saw John.
\item John saw me.
\end{enumerate}
\end{enumerate}

The active transitive construction appears in the (a) sentences, where case marking is
absent and the pronominal proclitic on the verb indexes both arguments. The (b)
sentences show the obligatory passive/inverse construction, where the third person agent
is marked by a postpositional element, the pronominal proclitic only indexes the first or
second person patient, and the verb is overtly marked for its reduction in valence.

If both the A and the O or D arguments are third person, the speaker has an option
between an active or passive/inverse expression of the clause, the choice depending on
the pragmatic status of the respective arguments. If the A argument is more pragmatically
marked, the active construction is used. If the O or D argument is the more marked, the

\textsuperscript{21} Chapter 0 will address the conceptual and terminological issues surrounding the label of this
construction.
passive/inverse is used. Such optional passives have the same formal properties as the
obligatory passives above, as illustrated in (27) and (28) below.

(27) Southern Tiwa optional passive (Rosen 1990: 699)

a. sianíðe liawramaðan
   sian-ide O-liawra-mu-ban
   man-S 3S>3s-woman-see-PST
   *The man saw the woman.*

b. liawraðe mučeban sianíðeβa
   liawra-de O=mu-če-ban sian-ide=ba
   woman-S 3S.ITR=see-PASS-PST man-S=AGT
   *The woman was seen by the man.*

(28) Towa optional passive (Yumitani 1989: 190)

a. John Mary mì
   John Mary O=mì
   John Mary 3S>3S=see.PF
   *John saw Mary*

b. John=tæ Mary mîwê
   John=AGT Mary O=mîwê
   John=AGT Mary 3S.ITR=see.PASS.PF
   *Mary was seen by John.*

Kiowa and Tewa do not have such a voice alternation. While Kiowa does have a
detransitivizing construction cognate with the passive/inverse voice of Tiwa and Towa, it
is not used in the same way (see chapters 0 and 0). Both Kiowa and Tewa possess
pronominal proclitics that index a third person A acting on a first or second person O or
D. Significantly, however, the analogous proclitics do not appear to be cognate between
the two languages and moreover show a vast reduction in the person and number
contrasts as compared to other areas of the paradigm.

(29) Kiowa (a: Harbour 2008: 83, b-c created by analogy)

a. čbó·
   č=bó·
   3>1S=see.PF
   *S/he/it/they saw me.*

b. dòbó·
   dò=bó·
   3>1NS=see.PF
   *S/he/it/they saw us.*

c. gòbó·
   gò=bó·
   3>2S=see.PF
   *S/he/it/they saw you.*
A glance at the paradigms shows that there is a lack of specification in the A argument for number, as in (29) and (30)b, or in both person and number, as in (30)a.

While Tewa does not retain a cognate detransitivizing or voice construction, it does have two sets of transitive pronominal proclitics that index a third person A argument acting on a third person P argument. The use of these proclitics is analogous to the pragmatically sensitive voice alternation involving third person seen in Tiwa and Towa.

Comparing the active voice construction in (31)a with the passive/inverse voice construction in (31)b, note that the latter shows case marking and a change in the indexation proclitic, just as in (25)-(28). However, there is no change in the verb stem, unlike in Tewa and Towa. Also, the proclitic is not reduced in valence, although the argument for which number is specified does change, as indicated in the gloss. See chapter 0 for a full discussion of the elaborate pronominal proclitic system and related pragmatic-valence constructions. Chapter 0 will also address certain formal aspects of valence-changing constructions.
5.3.5 Noun Class and Number Marking

Another area of Kiowa-Tanoan morphosyntax relevant to the pronominal proclitics as well as to the number marking on nouns is the unique noun class system which has reflexes in all seven languages. All nouns (or nominal referents) fall into one of at least four different classes\(^{22}\), which are realized solely by patterns of number marking. In essence, crosscutting the three-way grammatical number contrast among singular, dual, and plural there is a two-way distinction between an unmarked “basic” number and a marked “inverse” number. Nouns are identified as belonging to a given noun class based on how these two latter number categories map onto the three former grammatical numbers. In one class, which is traditionally called Class I, the “basic” number will indicate singular while the “inverse” indicates plural. In another class, Class II, the “basic” number will indicate plural while the “inverse” indicates singular. In the third class, Class III, singular and plural are marked in the same way—either basic or inverse, depending on the language. The marking pattern of the dual differs per language: it is always categorized as “basic” in Kiowa but as “inverse” in Tewa, Tiwa, and Towa. The fourth class, Class IV is never marked as inverse. Examples of the correlation between grammatical number and noun class are illustrated below by the number marking on nouns in Kiowa (32) and Towa (33).

\(^{22}\) In some of these languages, particularly Kiowa and Towa, some of these classes may have further subclasses. Of course, whether one calls a categorization a “class” or a “subclass” depends upon the analyst’s criteria for defining a given level of categorization. Thus, Watkins (1984) presents Kiowa as having four classes, two of which have two or three subclasses while Harbour (2008) presents Kiowa as having nine classes. Their analyses address essentially the same linguistic facts and are for most purposes simply notational variants.
Kiowa noun class marking (Watkins 1984: 80, 81, 88, 90)

Basic | Inverse
--- | ---
I | tógúl young man (S/D) | tógúdó young men (P)
II | ᵋonsó feet (D/P) | ᵋonsóy foot (S)
III | ᵋálo apples (D) | ᵋálohó apple/s (S/P)
IV | hólda dress/es (S/D/P)

Towa noun class marking (Yumitani 1998: 18, 98, 112, 115, 116)

Basic | Inverse
--- | ---
I | hi person (S) | hímiš people (D/P)
II | pó drums (P) | póš drum/s (D)
III | kʷóm tooth (S) / teeth (P) | kʷómś teeth (D)
IV | pʰâe water

This nominal marking is not the only or the most exact means for determining noun class in these languages, but it is among the most easily noticeable.

The Tiwa languages have developed a system distinct from their sister languages, but a close look will reveal that the pattern is clearly related. Namely, there is a number marker that may denote singular or plural depending on the noun class of the noun to which it is attached.

Taos Northern Tiwa noun class marking (Trager 1946: 205, 216)

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>lu'ína</td>
</tr>
<tr>
<td></td>
<td>tuculóna</td>
</tr>
<tr>
<td>II</td>
<td>p'ianenemá</td>
</tr>
<tr>
<td></td>
<td>h̓u'łun</td>
</tr>
<tr>
<td>III</td>
<td>k̵wɔna</td>
</tr>
<tr>
<td>IV</td>
<td>pʰa'ane</td>
</tr>
</tbody>
</table>

The reader can observe in (34) that the same suffix -na is used for the singular of classes I and III and the same suffix -në for the plural of classes II and III as well as for the non-
count nouns of class IV. Similar to the inverse marking of Kiowa and Towa seen above, the plural of class I and the singular of class II are both marked by the same number marker, which appears in the two allomorphs -nɛmɔ̆ and -nɔ̆. Different from the inverse system of the other Kiowa-Tanoan branches, dual number is not reflected in the distribution of the number suffixes.

In all but the Tewa languages, noun classes are also revealed by the number marking in the pronominal proclitics. Indeed, number marking in the proclitics is more fine-grained than the number marking on nouns, so classification may also be more finely distinguished from the verbal morphology. Kiowa and Towa both have a four-way morphological contrast among singular, dual, plural, and inverse. If a noun would take the inverse number in the singular or plural based on its noun class, then the verb will index it with the inverse number proclitic. Otherwise, it will take the indexation appropriate to its grammatical number. Tiwa is again different, essentially indexing the referent along the same pattern seen in the number suffixes on nouns in Taos Northern Tiwa as seen above. In the tradition of Tiwa studies, the consistently singular marking is termed “A”, the inverse marking is termed “B”, and the consistently plural marking is “C”. For comparative purposes, however, I will refer to these in examples as “singular”, “inverse”, and “plural” respectively.

(35) Southern Tiwa Class I (Allen et al 1984: 295)

a. ɬiawraðe  sianmuβan
    ɬiawra-de  Q=sian-mu-ban
    woman-S  3S.3S-man-see-PST
    The woman saw the man.

---

23 This is where the question of subclassification comes in.
24 Actually, there is a little more complexity than that. Note though that in the pronominal proclitic indexation, dual is always marked distinct from the inverse, even in Towa where a dual referent would take the inverse suffix on the noun.
(36) Southern Tiwa Class II (Allen et al 1990: 327)

a. sianjôe ˈiːkahunmuβan
   sian-ide ˈi=kahun-mu-ban
   man-s 3s>3i-box-see-PST
   The man saw the box.

b. sianjôe ˈukahunmuβan
   sian-ide ˈu=kahun-mu-ban
   man-s 3s.3p-box-see-PST
   The man saw the boxes.

(37) Southern Tiwa Class III (Allen et al 1990: 327)

a. sianjôe natufumuβan
   sian-ide Ø=natufu-mu-ban
   man-s 3s>3s-letter-see-PST
   The man saw the letter.

b. sianjôe ūnatufumuβan
   sian-ide ū=natufu-mu-ban
   man-s 3s>3p-letter-see-PST
   The man saw the letters.

Such indexation is used for third person arguments throughout the various paradigms of
pronominal proclitics. This indexation also permits noun class to be determined even
when other morphological indicators, such as the noun class nominal suffixes, do not
occur in the construction, as in (35)-(37) above.

Note too that adnominal modifiers, including adjectives, determiners, and relative
clauses, also mark number by the basic-inverse system and thus also reflect noun class.
This is especially important in Tewa where there is not enough number marking on nouns
or in the pronominal proclitics to distinguish noun classes.
(38) Rio Grande Tewa Class I (Speirs 1972: 482)

a. ñoˀi wî cē heˀŋ nqkètˈá
   ñoˀi wî cē heˀ-ŋ nq=keˀtˈá
   that-BAS one.BAS dog big.S-BAS 3S.ITR=fall.S/D.PF
   This one big dog fell.

b. ñoˀiŋ wîye cē heˀŋnîŋ dake挺好
   ñoˀiŋ wîye cē heˀŋ-ŋnîŋ da=ke挺好tˈá
   that-I two dog big.D/P-I 3D.ITR=fall.S/D.PF
   These two big dogs fell.

c. ñoˀiŋ po ye cē heˀŋnîŋ diyemų
   ñoˀiŋ po ye cē heˀŋ-ŋnîŋ di=ymu
   that-I three dog big.DU/PL-INV 3P.ITR=fall.P.PF
   These three dogs fell.

(39) Rio Grande Tewa Class II (Speirs 1972: 482)

a. ñoˀiŋ wéhpî teˀ heˀŋ nqkètˈá
   ñoˀiŋ wéhpî teˀ heˀŋ nq=ke挺好tˈá
   that-I one.I tree big.S-I 3S.ITR=fall.S/D.PF
   This one big tree fell.

b. ñoˀiŋ wîye teˀ heˀŋnîŋ dake挺好tˈá
   ñoˀiŋ wîye teˀ heˀŋ-ŋnîŋ da=ke挺好tˈá
   that-I two tree big.D/P-I 3D.ITR=fall.S/D.PF
   These two big trees fell.

c. ñoˀiŋ po ye teˀ heˀŋndi nayemų
   ñoˀiŋ po ye teˀ heˀŋ-ŋndi na=ymu
   that-BAS three tree big.D/P-BAS 3S.ITR=fall.P.PF
   These three big trees fell.

(40) Rio Grande Tewa Class III (Speirs 1972: 482)

a. ñoˀi wî kʻu heˀŋ nqkètˈá
   ñoˀi wî kʻu heˀ-ŋ na=ke挺好tˈá
   that-BAS one.BAS rock big.S-BAS 3S.ITR=fall.S/D.PF
   This one big rock fell.

b. ñoˀiŋ wîye kʻu heˀŋnîŋ dake挺好tˈá
   ñoˀiŋ wîye kʻu heˀŋ-ŋnîŋ da=ke挺好tˈá
   that-I two rock big.D/P-I 3D.ITR=fall.S/D.PF
   These two big rocks fell.

c. ñoˀiŋ po ye kʻu heˀŋndi nayemų
   ñoˀiŋ po ye kʻu heˀŋ-ŋndi na=ymu
   that-BAS three rock big.D/P-BAS 3S.ITR=fall.P.PF
   These three big rocks fell.
Most Tewa nouns are not themselves marked for number and verbal indexation patterns distinguish animate from inanimate arguments, but not noun class more finely (contrast (38) with (39) and (40)). Number suppletive stems occur with the appropriate grammatical number of referents outside of the noun class system, as seen in the stems for big and fall in the examples above. Thus, it falls to marking on modifiers such as adjectives, like he'/he'ęŋ- big, the numeral wî/wéhpî- one, determiners (like that), and especially determiners like 'o- to mark number and reflect noun class. Notice that the formal marking is almost always based on the determiner 'į for basic number and 'įŋ for inverse.

Only two features of noun classification across the languages are apparent at first blush and have been well-reported within the literature. The first is that there is a fundamental distinction between animate referents and inanimate referents. All animate referents, including human beings and categories of human beings (including dead human beings), anthropomorphized entities such as spirits and deities, and all animals (including reptiles and amphibians, fish, and insects) fall into a single class. This class is deemed Class I in all languages25. Effectively all inanimate referents fall into the other three classes, very few being grouped with animates in Class I.

25 Through much of the dissertation, I make use of the traditional Roman numeral labeling for the classes as established by Wonderly et al. (1954) for Kiowa and followed in much of the Kiowa-Tanoan literature. This is for convenience, familiarity, and brevity. In a deeper analysis of the noun classes, it would be more accurate to appeal to Harbour’s (2008) notation, which labels classes (and “subclasses”) by their number indexation patterns.
The brief lists in (41) demonstrate that this class includes humans, animals of all sizes, and entities related to animacy, like eggs. Kiowa’s Class I also consists of some body parts and manmade objects, more inanimates than are found in the other three branches.

The other immediately apparent feature is that mass and other non-count referents are never marked by inverse number and do not typically show any grammatical number distinctions\(^{26}\). These all fall into Class IV and could be considered in some ways to be outside the noun class system based around inverse number marking patterns. There does not seem to be as much isomorphism between Class IV and non-count nouns as there is between Class I and animate nouns, however.

\(^{26}\) The languages differ in how they permit for partitive interpretations of granular and liquid masses. In any case, under a mass reading or when counting parts of the mass, inverse number is never used.
What is being called Class IV here does actually involve a number of different classes in each language, but they all have in common an absence of number marking.

The basis for the classification of the majority of nominal referents, i.e. for the majority of the inanimate entities, is not readily apparent and the prototypical basis for the distinction between Classes II and III (and part of class IV in Kiowa) constitutes the most obscure feature of the noun class system. A short list of examples from any one of the languages reveals little of significance, as seen in the summary lists in (43)\(^{27}\).

(43) Kiowa Tanoan Classes II and III

<table>
<thead>
<tr>
<th></th>
<th>Kiowa</th>
<th>Rio Grande Tewa</th>
<th>Taos Northern Tiwa</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>ˀáˑ</td>
<td>tree, stick</td>
<td>tǫpʰé</td>
<td>pencil</td>
</tr>
<tr>
<td></td>
<td>gʊˑ</td>
<td>rib</td>
<td>səˈsɛwɛ</td>
<td>dish</td>
</tr>
<tr>
<td></td>
<td>móćˈáy</td>
<td>paper</td>
<td>teˑ</td>
<td>tree</td>
</tr>
<tr>
<td></td>
<td>kˈóp</td>
<td>mountain</td>
<td>póvi</td>
<td>flower</td>
</tr>
<tr>
<td>III</td>
<td>ˀáɭəˑ</td>
<td>apple</td>
<td>ɔʊntəˑ</td>
<td>clock</td>
</tr>
<tr>
<td></td>
<td>kˈɔn</td>
<td>tomato</td>
<td>beˑ</td>
<td>apple</td>
</tr>
<tr>
<td></td>
<td>ˀɔɭ</td>
<td>hair</td>
<td>te</td>
<td>wagon</td>
</tr>
<tr>
<td></td>
<td>tʰɔtˈɔɭəˑ</td>
<td>orange</td>
<td>poˑ</td>
<td>pumpkin</td>
</tr>
</tbody>
</table>

Kiowa-Tanoan noun classes are thus much like noun class and gender systems in many other languages of the world, being effectively arbitrary in synchronic perspective.

5.3.6 Noun Incorporation

Another major feature of Kiowa-Tanoan languages relevant to both argument structure and the verbal morphological template given above is noun incorporation. This

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\(^{27}\) This briefest of summary is not to suggest that the respective classes called “II” and “III” are comparable between the languages.
construction (or family of constructions), found to varying extents in languages all over the world (Mithun 1984, 2000, Mithun and Corbett 1999, Sasse 1984, Woodbury 1975 *inter alia*), perhaps sees its greatest productivity in Kiowa-Tanoan. It is highly frequent in Tewa and Tiwa especially and perhaps only a little less so—if at all less—in Towa, but is much less productive in Kiowa. Noun incorporation involves morphologically compounding to the verb a noun stem which denotes either a core argument of the verb or certain types of oblique arguments. As a core argument, only the S of an intransitive verb or the O of a transitive or ditransitive verb may be incorporated, never the A of a transitive or a dative argument. When it is incorporated, the noun is stripped of any inflectional morphology, i.e. number and case marking ((44) and (45)). Only in Tewa, where number marking is fairly lexicalized with relatively few nouns, is the number marking retained when the noun is incorporated (46).

(44) Southern Tiwa (Allen and Gardiner 1977: 47)

a. *sianide* timuñan  
   *sian-ide* ti=mu-ban  
   man-S 1S>3S=see-PST  
   *I saw the man.*

b. *tisianmuñan*  
   *ti=sian-mu-ban*  
   1S>3S=man-see-PST  
   *I saw the man.*

(45) Towa (Yumitani 1998: 163)

a. *wôho(§) howa e*  
   *wôho-§ howa e=pi*  
   star-I very 3I.ITR=be.bright.ST  
   *Stars are very bright.*

b. *howa ewôhôpi*  
   *hôwa e=wôhô-pi*  
   very 3I.ITR=star.bright.ST  
   *Stars are very bright.*

(46) Rio Grande Tewa (b: Speirs 1966: 101, (a) is created by me)

a. *owe sennag* dik*x*ô  
   *owe sennag*  
   there man.P 3A.ITR=be.sitting.P.ST  
   *Men are sitting there.*

b. *disenag* k*x*ô  
   *di=sennag*-k*x*ô  
   3A.ITR=man.P-be.sitting.P.ST  
   *There are men.*
Unlike many other languages with productive noun incorporation, the valence of the verb is not reduced in any formal way when an argument noun is incorporated. The pronominal proclitic will still index the noun appropriate to its number and noun class. Indeed, since the number morphology has been stripped from the incorporated noun itself, it is primarily through the pronominal proclitic that one can still recover the grammatical number of the referent, as illustrated in (47).

(47)  Southern Tiwa (Allen and Gardiner 1977: 47, 48)

   a.  tisianmuβan
       ti=sian-mq-ban
       1s>3s=man-see-PST
       I saw the man.

   b.  bisianmuβan
       bi=sian-mq-ban
       1s>3i=man-see-PST
       I saw the men.

Note too that modifiers of the incorporated noun may still appear within the clause, even though they themselves may not be incorporated. A noun coreferential with the incorporated noun, however, may never appear within the sentence. That is, Kiowa-Tanoan does not show “classificatory incorporation” and would be considered a “type III” language by Mithun’s (1984) typology of noun incorporation constructions.28

(48)  Southern Tiwa (Allen and Gardiner 1977: 48)

   yeðe  ˀadiruk’arhi
   yede  a=diru-k’ar-hi
   that.S  2s>3s=chicken-eat-FUT
   You will eat that chicken.

---

28 Mithun (1984) proposes four types of languages with respect to the noun incorporation constructions they permit. Type I languages permit lexicalized noun-verb compounds as predicates, but the construction does not have any significant morphosyntactic repercussions. In type II languages, an incorporated noun reduces the valence of the incorporating predicate, but the incorporated noun is entirely non-referential and cannot be modified or tracked in the discourse. Type III languages permit incorporated nouns to be modified by unincorporated elements within the sentence, e.g. adjectives, determiners, relative clauses. E.g. One coulds say I tree-saw red to denote “I saw a red tree”. Type IV language permit “classificatory incorporation”, where an unincorporated noun within the sentence may refer to the same entity as denoted by a noun incorporated into the predicate within the same sentence. The noun that is incorporated tends to be semantically more broad than the unincorporated noun giving the appearance of a classifier construction. E.g. one might say I tree-saw the oak, where the unincorporated noun oak denotes a member of the more general category denoted by the incorporated noun tree.
Examples (48) and (49) illustrate incorporated nouns with a demonstrative determiner and numeral respectively. These modifiers are free to remain in the sentence despite the removal of the modified nominal into the verb word.

In the latter part of the 20th century especially, the literature on noun incorporation included a debate as to whether an incorporated noun could itself be referential or if it simply narrowed the semantic scope of the predicate (cf. Baker 1995, 1996, Mithun 1984, 1986, 2000, Sadock 1986, Sapir 1911, Sasse 1984, 1987). Authors noted that incorporated nouns tended to be restricted in what they could refer to, e.g. usually inanimates but not inanimates, and what kind of discourse information status they could have, e.g. usually non-specific and indefinite. However, unincorporated modifiers of those incorporated nouns, or the unincorporated nouns in classificatory incorporation constructions, could have more informationally prominent references.

Without getting into this debate too far, it should be noted that the incorporated noun in the Tanoan languages may be coreferential with a specific, definite, and identifiable referent just as well as with a generic or non-specific and indefinite referent. It may also have either an animate or inanimate referent, including a human referent. A referent that is under some kind of pragmatic markedness such as focus or topicalization is never incorporated, but a new referent, i.e. not given, may be incorporated as long as it
is not being construed as a core participant in the discourse\textsuperscript{29}. In the narrative excerpts in (50) and (51), we can see noun incorporation involving different types of information structure.

(50) Southern Tiwa (Gatschet 1891: 209)

\begin{verbatim}
więń t̪i-we'i šimba tiyiče ʔufier, liaw-fier, sian-fier
wien Ō=t̪i-we-ʔi šimba tiy-ide ʔu-fier, liaw-fier, sian-fier
four 3S=day-be-REL all village-S child-with woman-with man-with

'išiwmibjan išit'at'ąban
'i=šiw-mj-ban ibi-t’a-tą-ban
3I=hunt-go-PST 3P>3I=antelope-find-PST
\end{verbatim}

*Four days after, the whole Pueblo, men, women and children, went out on a hunt and found the antelopes.*

(51) Rio Grande Tewa (Oke Oweenge 1982: 8-9)

\begin{verbatim}
nə-ci wí pívi w̱ŋhó-we-ní ʔo· ʔothóną dê=wú·sihýi’diwedi
nə-di wí pívi w̱ŋ-hó-we-ní ʔo· ʔothóną dê=wú·si-hýi?=iwedí
1S-AGT INDF meat 1>X>2S=retrieve.POT REM across.river 3P>3=cow-kill.IPF=where
\end{verbatim}

*I’ll go get you some meat over across the river where they’re slaughtering a cow.*

The Southern Tiwa sentence in (50) demonstrates an instance of a specific, definite, and identifiable referent, *t’a antelope*, being incorporated. This sentence is from a story about an orphaned boy raised by antelopes. At this point in the story, it has been established that there is a particular group of antelope with whom the boy resides that the people have found. The Rio Grande Tewa sentence in (51), on the other hand, shows an incorporated animate referent, *wú sì cow*, which has not previously been mentioned in the text and which plays no significant role in the discourse. Indeed, outside of the chosen translation, it is not clear if it is a specific indefinite cow that is being slaughtered or if there is just an act of cow slaughtering happening. In either case the cow in and of itself

\textsuperscript{29} Under the stage metaphor of Grimes (1975) and DuBois (1980), such participants would be considered “props” or “setting” rather than “actors”.

321
is inconsequential to the narrative and need not be given formal prominence in the morphosyntactic structure.

Whether one wishes to analyze the incorporated noun itself as referential or relegate all referentiality functions to the pronominal proclitic—which still indexes the incorporated argument—is a matter outside the scope of this dissertation. While noun incorporation will not feature as a central topic in the chapters that follow, its presence and productiveness should be noted, especially given the prominence of compounding constructions in general. It is safe to assume, though, that at least some noun incorporation constructions can be reconstructed to Proto-Kiowa-Tanoan.

5.3.7 Adverbial Verbal Prefixes

Formally related to noun incorporation, if quite different functionally, are the adverbial prefixes mentioned above as occurring right after the pronominal proclitics in the verbal template. Each language possesses a small, closed set of grammaticalized morphemes of various meanings that may occur in this position with only a few apparent cognates between the languages. Largely these elements serve to mark specify some kind of pragmatic focus either on one of the core arguments of the verb to which it is attached or on the event denoted by the clause. Some also serve to add aspectual or modal modification to the verbal event. The following sentences exemplify such elements.

30 Jelinek (1984) in particular promotes the referential status of verbal indexation in head marking languages over other (morpho)syntactic elements. This line of thought has been influential through the late 20th and early 21st centuries.
These understudied affixes appear to vary in their relative degree of grammaticalization. The range of functions includes temporal adverbials (52), intensifiers (53), and clausal connectors (54), in addition to others. The set of permissible adverbials is small in all of the languages. While most of these adverbial elements only occur as bound morphemes within the verbal complex, some may also occur as independent words outside of the verb. Also for some there is an independent element that is seemingly synonymous, or nearly so, and is phonologically similar enough to suspect a relationship.

(55)  
Kiowa (Watkins 1984: 70, 210)

\[
\begin{align*}
\text{é·hodo-kį} & \quad \text{gyako dó-sal} \quad \text{(cf. kót hard, strong, expensive)} \\
\text{é·hodo-kį} & \quad \text{gya=ko dó-sal} \\
\text{this-day} & \quad 3P=very-hot \\
\end{align*}
\]

It is/was very hot today.

(56)  
Towa (Yumitani 1998: 166)

\[
\begin{align*}
a. \text{ibép’ẽwì} & \quad \text{b. bép’ę hê qwì} \\
i=\text{bép’ę=wì} & \quad \text{bép’ę hê q=wì} \\
1S.ITR=well=run.away.PF & \quad \text{well Q 2S.ITR=run.away.PF} \\
I succeeded in running away. & \quad \text{Did you succeed in running away?}
\end{align*}
\]
The Kiowa adverbial prefix in (55) is evidently related to the free lexical morpheme kót. Such a relationship is even clearer in (56)a-b, where the adverbial prefix may occur outside the verb word. Both types of cases suggest that these bound adverbials originate as independent words and grammaticalized to their current position via a construction like noun incorporation. That they are not mutually exclusive with incorporated nouns suggest either that adverbial incorporation is a historically distinct process or that the elements grammaticalized far enough in the past that any origin in an incorporation process has been lost in reanalysis. Still, it is feasible that at least some of these adverbial elements originated as incorporated nouns or even as incorporated verbs. Some of these morphemes will be mentioned in the course of phonological reconstruction in Part II, but as a class they await further study.

5.3.8 Verb Compounding

The other kind of incorporation mentioned in the verbal template above will end up having bearing on topics in the following chapters to some extent due to its formal properties. Verb incorporation, or verbal compounding, is not uncommon among languages of the polysynthetic type and is a frequent construction in Kiowa-Tanoan languages. In this construction two verb stems are compounded within a single morphosyntactic word to form a complex predicate. While there is some small variety in the types of semantic relationships that hold between the two verbs, the form is fairly consistent. The “incorporated” verb is compounded to the left of the “main” verb and is put into the nominal-incorporative stem form. This nominal-incorporative form may be identical to the stem found in main verb constructions or it may undergo various, often
lexically specified, morphophonological changes. The most generalizable change that
applies across the languages, however, is the verb root-initial consonant ablaut described
in 5.2 above. The following sentences illustrate verb compounding, without ablaut (57)a
and with (57)b, (58)a-b.

(57) Rio Grande Tewa (Harrington 1947: 112)

a. ḳiweʔ dipówáʔihe ri, ḳověmp’o suwgyøŋ (cf. suwęŋ drink (PF))
   ḳiweʔ di=pówáʔihe di, ḳověŋ=p’o-suwęŋ-yøŋ
   there 3P.ITR=arrive.PF=when 3>3D=water-drink.INC-request.PF
   When they arrived there, they had them drink.

b. ḳiŋ k’ép’i damj naktuwaŋyi? (cf. nwęŋ look for (PF))
   ḳiŋ k’ép’i da=mí na-tuwęŋ-yi?
   DF.1 white.person 3D.ITR=mine-seek.INC-go.around.ST
   The (two) Whitemen were going around prospecting.

(58) Towa (Yumitani 1998: 253)

a. dô· het’ělehaʔě k’ěm’ak tǒmĩhîjî (cf. t’élê eat (PF))
   dô· sel=séle-háʔě k’a ě=m’ak tǒmil-hî
that 1P>3P=eat.INC-take.PF-COND TA 1P.ITR=school-go.PRG-FUT
   ...we would take them and eat them on our way to school.

b. φǐyá tahǐzǎy ø (cf. hí kill (PF))
   φǐyá ta=hí-zéy ø
   fly 1S>3SG=kill.INC-request.PF
   I told him to kill the fly.

Compare the form of the underlined incorporated verb with its non-incorporated form
given in parentheses (the perfective is used to illustrate the latter). Verb compounding
may occur with an incorporated noun, like p’o· water in (57)a, may be compounded with
an intransitive verb like yi go around as in (57)b, or with a transitive like yôŋ request in
(57)a, fǐ yá take in (58)a, or zé yö request in (58)b. Ablaut can be observed to apply in all
but (57)a in comparing the incorporated form with the perfective form (e.g. nwęŋ ~
tuwaŋ in (57)b), along with changes in tone (t’élê ~ séle) in (58)a and vowel length (fǐ ~
hǐ) in (58)b.
5.3.9 Verb Stem-Initial Consonant Ablaut

Ablaut occurs in three broad morphosyntactic contexts: in an incorporated verb, in a nominalized verb, and in a derived stative. The examples in the previous section illustrated the first of these. The other two constructions are exemplified in the following.

(59) Picuris Northern Tiwa (Nichols 1994a: 88)
   a. tipone (cf. mɔ(n) see)   b. kalene (cf. k’al eat)
      ti-po-ne
      write.INC-see.INC-S   eat.INC-e-S
      student   food

(60) Rio Grande Tewa (Speirs 1966: 131)
    ſûŋxa’ven (cf. háve break (PF))
    ſûŋ=xɑ’ven
    3>>3S=break.ST
    Something of his is broken.

The examples in (59) illustrate deverbal nouns used as referential terms and marked for number like other nouns in Picuris Tiwa. The form in (60) shows a stative verb derived from an active (transitive) verb, the stative in Tewa seeming to be based on the nominal-incorporative stem. The origin of this alternation is not explored in this dissertation—although the phonological reconstruction of Part II should provide further clues—but it is worth raising the question here of why ablaut applies to these three families of constructions. Or, in other words, what does verb incorporation have in common with nominalization and/or stativization?

The primary common feature I notice among these constructions is that they all involve a kind of reified construal of the verbal action (Croft 2001: chapter 2). This is most apparent in nominalization, where the explicit intent is to refer to the action—or some participant in the action—without any overt demarcation or consideration of the
dynamicity of the action. The action is effectively de-aspectualized, the speakers relying only on the verb’s lexicalized Aktionsart to conceptualize the referent as an action.

Similarly, when an active verb is stativized, the predicate serves only to denote a state of affairs that results from the action, usually with focus on a referent involved in the action. Again, the end result is mention of an action, but with no overt consideration of its dynamic nature.

The reification involved in verb incorporation is best understood in the relationship it has with the verb to which it is compounding. It seems that only a limited, but large, set of verbs in any of the languages may serve as the rightmost “main” verb in a verb incorporation construction. This set is composed primarily of modal-type events and other complement-taking predicates, i.e. verbs denoting cognition, epistemic stance, and acts of speech. In these constructions the incorporated verb denotes the action of the complement clause and thus primarily serves to refer to the (usually unrealized) event being invoked. The internal dynamics of the event, beyond whatever Aktionsart is conveyed simply by mention of the action, thus tends not to be pertinent.

(61) Rio Grande Tewa (Oke Oweenge 1982: 15)
\[
\begin{align*} 
1S & \quad \text{NEG-1S.ITR=sing-know.how.ST-NEG} \\
\text{I don’t know how to sing.} 
\end{align*}
\]

(62) Taos Northern Tiwa (Kontak and Kunkel 1987: 20)
\[
\begin{align*} 
1S & \quad \text{NEG-1S.ITR=eat.INC-want-IPF} \\
\text{I want to eat.} 
\end{align*}
\]
The aspect and mood marking in these examples reflects the properties of the rightmost “main” verbs which in turn dictates the interpretation of the incorporated verb. In (61) *singing* is “what” is known. In (62) *eating* is the “thing” that is wanted. In (63) *sewing* is the “object” skill that is being taught. The internal dynamics of these subordinated events are not expressed and are not overtly construed within the overall events.

The other frequent type of incorporating construction across the Kiowa-Tanoan languages involves a motion verb as the “main” verb. This construction expresses either a purposive event, that a participant is moving in order to perform a yet-to-be-realized action, or expresses the relative orientation and direction in which the event occurs with respect to the speaker or another reference point.

(64) Kiowa (Watkins 1984: 229)

<table>
<thead>
<tr>
<th>a. ahól dáky tō bā</th>
<th>b. gyákí kō tō tō tō</th>
</tr>
</thead>
<tbody>
<tr>
<td>a=hol-dā-kō-tō-bā</td>
<td>gya=kī-kō-tō-tō</td>
</tr>
<tr>
<td>1S.I TR=dress-buy-go.PF</td>
<td>1S&gt;3S=meat-buy-send.PF</td>
</tr>
</tbody>
</table>
*I went to buy a dress.*  
*I sent him to buy meat.*

(65) Taos Northern Tiwa (Kontak and Kunkel 1987: 20)

<table>
<thead>
<tr>
<th>ñpúmę</th>
<th>ç=pú-mę</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S.I TR=see.INC-go.PF</td>
<td></td>
</tr>
</tbody>
</table>
*I went to see.*


<table>
<thead>
<tr>
<th>a. nqkʷ*atégtho mpí</th>
<th>b.</th>
</tr>
</thead>
<tbody>
<tr>
<td>na=kʷ*atég-tho mpí</td>
<td></td>
</tr>
<tr>
<td>3S.I TR=jackrabbit-shoot.with.arrow.INC-go.out.PF</td>
<td></td>
</tr>
</tbody>
</table>
*He went out to shoot jackrabbits (with a bow and arrow).*
b. nq’okhúwápi-rɛ̆y
na=qoxwá-pi-ʁɛ̆y
3S.3ITR=cloud-go.out.INC-come.IPF
*The cloud is coming up/out.*

All of the languages make frequent use of such constructions, which include basic intransitive motion verbs, as in (64)a, (65), and (66), as well as caused motion, as in (64)b. The purposive interpretation is the more common, but the directional usage seen in (66)b is frequent with certain verbs. The conceptual reification involved with purposive events is similar to that seen with modal verbs. The motivation is less apparent in the directional-orientational use of motion verbs, suggesting it may be a grammaticalization stemming from the purposive construction at some remove from the original motivation for ablaut. However, one could also posit that the speaker’s stance reflected in the directional-orientational construction takes conceptual precedence over the internal dynamics of the event itself, language often tending towards the ego- and speech act-centric.

The reader will have noted that I make use of scare-quotes in mention of “main” verbs and “incorporated” verbs. I do this to highlight the potential dis-coordination between structural prominence and semantic prominence that may arise in well-grammaticalized constructions. In Kiowa-Tanoan verb incorporation constructions, the rightmost verb always dictates certain structural properties of the verbal complex. TAM marking, being suffixal, will follow the inflectional patterns of this rightmost verb and indeed it restricts the aspectual possibilities of the entire verb. Moreover, the rightmost verb determines the valence of the entire complex and specifies which series of pronominal proclitics indexes the arguments of the overall verb word.
The Tewa verb k'ô· eat (PF) is formally transitive, requiring transitive pronominal proclitics when used as a main verb. Despite this, when incorporated into a formally intransitive verb like da' want, the entire complex takes intransitive indexation. This is true even with an incorporated patient like qaq תשółק: atole scum, as in (67). At first blush, this may not seem significant given the conceptual subordination of the incorporated verb to the left as argued above. However, as these constructions become more and more grammaticalized, there is the potential that the incorporated verb—a large open lexical class—will take greater semantic prominence while the incorporating verb—which belongs to a small closed class—will begin to be construed as a temporal, aspectual, or modal modulation of that prominent, semantically robust verb. Indeed, just such a grammaticalization process seems to be the source for many of the TAM-marking morphemes discussed in the next section.

5.3.10 Tense, Aspect, and Mood

Tense, aspect, and mood, especially the latter two, are obligatorily marked categories that are indicated within the suffix complex of the verb. Indeed, in Kiowa, Tewa, and Towa, there is quite a bit of fusion with, and lexical conditioning by, the verb stem itself such that a synchronic description of the languages is hard pressed to address one without addressing the other. In these three languages, therefore, it is necessary to

---

31 Rio Grande Tewa has a lexically distinct verb for the intransitive usage of eat: hû yqq.
consider both separable agglutinated suffixes and paradigms of stem modifications and
the combinatorial possibilities between the two types of inflection. In the Tiwa languages,
on the other hand, TAM is realized almost entirely by sets of agglutinated suffixes, the
stem being immutable for these categories.

(68) Tiwa TAM marking (Taos: Kontak and Kunkel 1987; ST: Leap 1970b)

<table>
<thead>
<tr>
<th>Taos Northern Tiwa</th>
<th>Southern Tiwa</th>
</tr>
</thead>
<tbody>
<tr>
<td>mę</td>
<td>S/he went</td>
</tr>
<tr>
<td>mę-ɔnŋ</td>
<td>S/he went (and has returned)</td>
</tr>
<tr>
<td>mę-ŋəŋ</td>
<td>S/he was going</td>
</tr>
<tr>
<td>mę-hu</td>
<td>S/he is going</td>
</tr>
<tr>
<td>mę-ya</td>
<td>S/he will go</td>
</tr>
</tbody>
</table>

While there are reportedly changes in tone and some phonological and
morphophonological alternations in the stem in at least Taos Tiwa, most TAM
morphology is as segmentable as seen in (68). The stem modifications in Kiowa, Tewa,
and Towa are all based on mood and aspect. Tense is less prominent throughout the
family, but is most apparent in Tiwa. The former three languages all make minimally a
two-way aspectual distinction between perfective aspect, which denotes a completed
event, and imperfective, which denotes a progressive or habitual event, among others. A
subset of verbs in Tewa and Towa make a further formal distinction between progressive
and habitual via stem modification, as found in the verbs *come* and *go* in (69).

(69) Imperfectives in Kiowa, Tewa, and Towa

<table>
<thead>
<tr>
<th>Kiowa</th>
<th>Rio Grande Tewa</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td>bá</td>
<td>go (<em>PF</em>)</td>
<td>k’o</td>
</tr>
<tr>
<td>bánum</td>
<td>go (<em>IPF</em>)</td>
<td>k’o</td>
</tr>
</tbody>
</table>
These three languages also have stem forms tailored to non-real events, i.e. mood. One stem (or pair of stems in Kiowa) is used only in direct affirmative commands and can be deemed an imperative, which appears in (70).


<table>
<thead>
<tr>
<th>Kiowa</th>
<th>RG Tewa</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td>besôˀ</td>
<td>ʔósoge</td>
<td>kilê-ti</td>
</tr>
<tr>
<td>be=sôˀ</td>
<td>ʔō=soge</td>
<td>kil=ê-ti</td>
</tr>
<tr>
<td>2S.RFL=sit.IMP</td>
<td>2S.IMP=sit.IMP</td>
<td>2S.RFL=run.IMP</td>
</tr>
<tr>
<td>Sit down!</td>
<td>Sit down!</td>
<td>Run!</td>
</tr>
</tbody>
</table>

The other type of stem, which we might give the conventional label “potential”, may be used to give an indirect or polite command (71), is used in subordinate clauses to denote modal complements or hypothetical events, and in main clauses to denote a future event, the latter two functions being exemplified in (72). Kiowa appears to have more formal distinctions in this domain than do the other languages.


<table>
<thead>
<tr>
<th>Kiowa</th>
<th>RG Tewa</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td>hólda batʃɔˑmìˑ</td>
<td>wî-nû=k’õ-í-pî</td>
<td>hâ=da mâʾøge</td>
</tr>
<tr>
<td>dress 2S&gt;3P=make-IPF.IMP</td>
<td>NEG-2S&gt;3S=eat-POT-NEG</td>
<td>MOD OPT 3S.ITR=go.POT</td>
</tr>
<tr>
<td>Keep on making the dress!</td>
<td>Don’t eat it!</td>
<td>S/he can go! / Let</td>
</tr>
<tr>
<td>him/her go!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(72) Potential irrealis (Watkins 1984: 171; Yumitani 1998: 239; RGT constructed)

<table>
<thead>
<tr>
<th>Kiowa</th>
<th>RG Tewa</th>
</tr>
</thead>
<tbody>
<tr>
<td>mágyá abá tʃɔˑ</td>
<td>?odu²</td>
</tr>
<tr>
<td>mágyá a=bá-tʃɔˑ</td>
<td>?o=du²</td>
</tr>
<tr>
<td>MIGHT 1S.ITR=go-POT</td>
<td>dimâ-nîįŋ</td>
</tr>
<tr>
<td>(I thought) I might go (but didn’t)</td>
<td>I want you to give it to me.</td>
</tr>
</tbody>
</table>
I want you to go.

These languages also have nominal-incorporative stem forms, the most common uses of which were described above. Kiowa shows the greatest complexity in terms of number of stem forms. It also marks hearsay evidentiality and makes these modal and evidential distinctions for both perfective and imperfective aspect. It also has a stem form used specifically with the negative, which is aspectually neutral. Towa also shows more complexity than Tewa in that it not only makes the above distinctions in the active, but contrasts the perfective, imperfective, and potential in the passive as well, which is also well fused with the stem.

Further inflection for tense, aspect, and mood is accomplished via easily segmentable suffixes attached to these stem forms. There is no generalizable set of suffixal TAM markers common among the languages, although it can be noted that future tense/mood is most often specified in each of the languages by a suffix.

(73) Kiowa (Watkins 1984: 173, 174)

a. béthɔ· ɛmko·dó·ɔlt*ɔk*ɔp*ɔmdêhel
   béthɔ· ɛm=ko·dó-*ɔlt*ɔ-k*ɔp-*ɔmdê-hêl
   MIR 2S.ITR=very-head-hurt-become-PF.HSY
   I didn’t know you had gotten a bad headache.

b. pâ’tɔq tɔp tɔ’gyâyt’ɔ’ɛ·
   pâ’tɔq-tɔp ɔ=ɔt’ɔgyâ-y t’ɔ’ɛ·
   eleven-beyond 3S.ITR=pass-POT-when.DS 1S.ITR=arrive-IPF.IMP-POT
   I’ll be coming (regularly) after eleven.
Kiowa’s agglutinative inflections include a hearsay evidential (73)a and future/potential suffix (73)b that are directly attached to the stem while Towa’s inflections include a past habitual (74)a and a future (74)b, among a handful of others. Similar categories are found in Tewa.

The Tiwa languages largely express TAM categories by agglutinated suffixes attached to the stem, although Taos Tiwa does show some amount of stem fusion and morphophonology with some suffixes. One complicating factor with the Tiwa languages is that they show two sets of TAM suffixes: one that occurs in affirmative main clauses and another set that occurs in negative main clauses and in deranked (subordinate) clauses. This contrast can be seen in the following pairs of sentences.

(75)  Southern Tiwa (Leap 1970: 108, 109)

a. ˀiwnapapseβan
   ˀiw=na-pab-se-ban
   3P>3P=NA-flower-set-PST
   They set flowers down.

b. ˀiwenapapseβa
   ˀiw-e=na-pab-se-ba
   3P>3P-NEG=NA-flower-set-PST.SB
   They didn’t set flowers down.

c. ˀiwnapapsewe
   ˀiw=na-pab-se-wε
   3P>3P=NA-flower-set-PRS.PRG
   They are setting flowers down.

d. ˀiwenapapsemi
   ˀiw-e=na-pab-se-mι
   3P>3P-NEG=NA-flower-set-PRG.SB
   They are not setting flowers down.

The negative/subordinate suffix in (75)b that corresponds to the affirmative past in (75)a may be morphologically related historically, but most of the negative-affirmative
correspondents appear unrelated, as in (75)c-d. The TAM categories expressed in these Tiwa suffixes are primarily aspectual and modal, but do also seem to show more grammaticalization of tense than is found in the other three language groups. A comparative-historical analysis of these TAM suffixes and stem forms must await future study, although see chapter 10 for sound changes in stem-final consonants that play into the development of these suffixes.

5.3.11 Valence

Addressing the TAM suffixation and stem modification complex also ultimately requires dealing with valence modification. While the morphosyntactic and semantic effects of valence are realized in the pronominal proclitics, incorporated nouns, and greater syntactic argument structure, the valence markers themselves are suffixes to the verb preceding the TAM suffixes, at least when a sequential order can be determined. All of the languages have causative valence increasing constructions, which serve to add an agent over the event. The most noticeable morphological\(^{32}\) means of forming a causative in the modern languages is by compounding one of the verbs meaning *do* or *make*. Like any verb compounding construction, the rightmost verb, here the causativizer, takes the TAM inflection. In some languages, e.g. Tewa (76) and Towa (77)a, sometimes Tiwa, the causativized verb is in the nominal-incorporative form as predicted in a verbal compound. In Kiowa (79) and sometimes Tiwa (78), the construction appears to be more grammaticalized and it is added to the unmarked stem or nominal-incorporative stem.

\(^{32}\) There are also syntactic means, usually with a complement taking predicate that specifies the mode of causation, e.g. ask to do, command to do. The languages vary in how productive the morphological causative constructions are.
Rio Grande Tewa (Oke Oweenge 1982: 24)

hewæmbo  háʔto  dí=p’â-kâﬁamí
hewægbò  háʔto  di=p’â-kaŋ-amí

but  not  X>1=laugh.INC-do.POT
...but don’t you make me laugh again!

Towa (Yumitani 1998: 155)

a.  nî  tašipe  cf.  b.  ijiło̊’ø
nî  ta=šil-pë:  il-šilo̊
1s  1s>3s=cry.INC-make.PF  3s.RFL-cry.PF
I made her cry.  She cried

Southern Tiwa (Allen and Gardiner 1977: 54)

ʔ’uʔukur’ɔmban
ʔ’uʔ-u-kur-ʔ’ɔm-ban
1s>2s=baby-hold-do-PST
I made you hold the baby.

Kiowa (Watkins 1984: 153)

a.  bètʰəpɔ̂m  b.  hölda  gyatkyóyɔ’ɔmɔ
be=tʰəp-ɔm  hölda  gyat=kyóy-ɔ’mɔ
2s.RFL=dry-make.IMP  dress  1s>3p-long-make.IPF
Dry it!  I’m going to lengthen the dress.

This compound construction appears to be the most recently productive within the
family. The languages do also show traces of an old causative suffix. While recognizable,
it is fully lexicalized with the stems to which it is attached and entirely unproductive,
leaving such stem pairs as the following.

Old causative

a.  Rio Grande Tewa

wîŋ  be standing  wînû  stand (TR)
hûŋ  be used up  hûnû  spend

b.  Taos Northern Tiwa

k’wîn-ɔ  be standing  wîŋ  stand (TR)
c’iɔd-ɔ  enter (PF)  c’iɔtì  bring in

336
c. Kiowa  (Watkins 1984: 149)

\[
\begin{align*}
\text{pʰá} & \quad \text{be tied} \\
\text{só} & \quad \text{be set (S/D)} \\
\text{pʰáy} & \quad \text{tie (TR)} \\
\text{sóy} & \quad \text{seat (TR)}
\end{align*}
\]

The vocalic and glide element at the end of the words on the right in (80) does appear to be an old valence increaser (although the Kiowa glide may only indirectly reflect this suffix, cf. the discussion of stem-final consonants chapter 10). It occurs only on a handful of stems. Less apparent is what appears to be another valence increaser, perhaps even the same as the above, which occurs on a handful of transitive stems in each of the languages. For most of these, the languages do not show a suffixless lexical counterpart from which they are obviously derived. There is just enough evidence, though, to suggest the original general form and function of this suffix.

(81) Old valence marker

a. Southern Tiwa

\[
\begin{align*}
\text{łaki} & \quad \text{seat (TR), set down} \quad (\text{cf. ląy sit down (RFL)}) \\
\text{miki} & \quad \text{feed} \\
\text{č’iaki} & \quad \text{tie (TR)} \quad (\text{cf. nominal-incorporative form: šiay})
\end{align*}
\]

b. Rio Grande Tewa

\[
\begin{align*}
\text{sóge} & \quad \text{set down (S/D) (PF)} \quad (\text{cf. sa: serve, set down (P)})^{33} \\
\text{mági} & \quad \text{give (PF)} \quad (\text{cf. imperfective máq}) \\
\text{xʷi gi} & \quad \text{comb (PF)} \quad (\text{cf. potential xʷi ní})
\end{align*}
\]

Despite the various realizations of the vowel in Tewa, seen in (81)b, the suffix appears to be of the same, or nearly the same, form as the previous causativizer. It stands out in these cases due to the preceding velar, which could be part of an old suffix. However, it will be argued in chapter 10 that this velar may actually be historically part of the verb root.

\[^{33}\text{This stem is not actually used as the plural counterpart to sóge, however, despite the similar form and meaning.}\]
The valence changing construction that will receive primary focus in Part III is the passive-detransitivizer. This suffix shows a productive cognate reflex in all but Tewa. In Tiwa and Towa it is especially productive, appearing in the passive/inverse construction obligatorily whenever a speech act participant is being affected in an event by a third person A argument (compare (82)a and (82)b below). In Kiowa it appears in other detransitivizing constructions, most notably deriving a split intransitive contrast that expresses degrees of control and affectedness of arguments in a transitive event, as seen in (83)a-b.

(82) Towa (Yumitani 1998: 192)

a. dô · bélá tôhá
   dô · bélá tô-há
   that bread 1S>BAS>3S=bake.PF
   I baked bread for her.

b. dô · tæ bélá jhá pâ
   dô · tæ bélá j=hâ pâ
   that-AGT bread 3BAS>>1SG=bake.PF
   She baked bread for me.

(83) Kiowa (Watkins 1984: 142)

a. k’ɔ’áttɔ ɛ’óť
   k’ɔ’ál-dɔ ɛ=óť
   dish-I 3S>3I-drop.PF
   He dropped the dish (in a fit of anger)

b. k’ɔ’áttɔ ɔ’t̷̂̄k̷̄yá
   k’ɔ’ál-dɔ ɔ̃=ol-kyá
   dish-I 3S=drop-DTR.PF
   He dropped the dish accidentally.

This valence-reducing morpheme, while obviously a suffix, shows some interesting morphophonological interaction with the stem, even in normally agglutinative Tiwa. In Tiwa and Towa particularly, the suffix often causes a historical stem coda or some old morphology to appear that otherwise does not occur in other constructions. It thus proves to be an invaluable construction for reconstructing verb stems in Kiowa-Tanoan.

(84) Passive and stem-final consonants

a. Southern Tiwa (Allen and Gardiner 1981: 300)

<table>
<thead>
<tr>
<th>Tiwa</th>
<th>Tiwa- (PASS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>hu</td>
<td>hûte</td>
</tr>
<tr>
<td>ʔa</td>
<td>ʔare</td>
</tr>
<tr>
<td>čači</td>
<td>čaybe</td>
</tr>
</tbody>
</table>
b. Towa (Yumitani 1998)

\[
\begin{align*}
\text{富豪} \quad \text{kill (PF)} & \quad \rightarrow \quad \text{富豪} \quad \text{kill (PASS.PF)} \\
\text{富豪} \quad \text{wash (PF)} & \quad \rightarrow \quad \text{富豪} \quad \text{wash (PASS.PF)} \\
\text{富豪} \quad \text{do, make (PF)} & \quad \rightarrow \quad \text{富豪} \quad \text{do, make (PASS.PF)}
\end{align*}
\]

The passive suffix, -é (Southern Tiwa) and -ē (Towa) respectively, always follows some consonant. The consonants that appears in forms such as those in (84) are lexically determined and thus undoubtedly a reflex of some historical feature of the stem rather than of the suffix per se. Because of its position with respect to the stem and other morphology, there is the potential for complex morphophonological interaction, especially with the TAM suffixes.

### 5.3.12 Complex Sentence Constructions

The final set of bound morphemes that occurs in the verbal template of all the Kiowa-Tanoan languages consists of a relatively small set of enclitics which indicate clausal deranking and something of the semantico-syntactic role of an embedded clause. The most frequently occurring and widespread across constructions is the relativizer, which agrees with the number and noun class of a relative clause head according to the basic-inverse number contrast.

(85) Taos Northern Tiwa (Kontak and Kunkel 1987: 37, 38)

\[
\begin{align*}
\text{富豪} \quad \text{nādīsuapuŋi} & \quad \text{yön} \quad \text{nāpšālipəhu} \quad \text{kə̞wə̞g} \quad \text{yəŋu} \\
\text{富豪} \quad \text{nā-tə̞is-pə̞pə̞} & \quad \text{yön} \quad \text{nā-pšāli-pə̞hu} \quad \text{kə̞wə̞g} \quad \text{yəŋu}
\end{align*}
\]

Those buildings that were in town have changed a lot now.

b. ʰi̞tə̞xʰitukul̞ ʰi̞hə̞nxawə̞mə̞nə̞

\[
\begin{align*}
\text{ṣ} = \text{tə̞xʰitupə̞kul̞-γ} & \quad \text{i-ʰi̞nxawə̞mə̞nə̞}
\end{align*}
\]

You picked up the pencil that is big.
Towa (Yumitani 1998: 133, 237)

a. näˑvê·la tupaˑc·
dá·baˑš egˑileˑe

that man 1S=3S=know.ST door-I 3S=3I=close.PF-REL

I know the man who closed the door.

b. wî wôho ipiˑešˑ
tiˑmi

two star 3D.ITR=bright-REL-I 1S=3D=see.PF

I saw two bright stars.

Such a basic-inverse system is even used in the Tiwa languages, which otherwise mark number and noun class by slightly different means, as described above. The parallels between Tiwa and Towa can be partly observed in (85) and (86).

The languages appear to be a little more diversified when it comes to other types of deranking constructions, including complementation, adverbial clauses, and purpose clauses. Kiowa seems to make less use of overt coding of syntactic roles than do the Tanoan languages (and has even developed a switch-reference marking system on some of the overt clause coding it does have, which none of its sisters have). Some of the overt enclitics are identical to, or apparently come from, postpositions that also occur with nominals in the languages.

Kiowa (Watkins 1984: 235, 237)

a. aˑɔ́n máˑgyá · emˑkóydétˑɔ·
aˑɔ́n máˑgyá · emˑ=kóydéˑtˑɔ·
1S.ITR=think.ST maybe 2S.ITR=turn.back-POT

I thought that you might turn back.

b. nˑyˑ mánpˑĩˑɔˑmtˑôˑ

1S X>D>2D=food-make-POT and.DS MUST 2D>3P=eat.IMP

If I cook for you, you must eat.
Example (87)a illustrates the lack of marking for complementation in Kiowa while (87)b shows a connective with switch-reference. The conjunction ɲ onæ is used because of the differing subjects in the two clauses: I in the first clause and you in the second. If the subjects had had the same referent, the same-subject form go would have appeared instead. The sentence in (88) demonstrates the Rio Grande Tewa subordinator for adverbial clauses, -dência. These enclitics will not receive much attention in this dissertation, although a more thorough study of complex clauses across all seven languages—especially the Tanoan languages—is definitely needed.

5.3.13 Negation

One other construction that will come up in the following chapters is clausal negation. This was not presented with other topics above due to the innovation that has occurred in each branch of the family which makes it difficult to provide a general picture of Kiowa-Tanoan negation constructions. Kiowa (89) and Towa (90) make use of obligatory preverbal particles as markers of negation while the other languages make almost sole use of verb morphology for this function.

---

34 As will be described later, this subordinator shares formal properties with the instrumental/agentive marker, ablative/locative-source marker, and comitative as well as with the independent Tewa conjunction heri and.
(89) Kiowa (Watkins 1984: 215)

\[
\begin{align*}
\text{hón} & \quad \text{án} \quad \text{cóy} \quad \text{gya=tʰó•-m̪ʰ} \\
\text{hón} & \quad \text{án} \quad \text{cóy} \quad \text{gya=te̱•-m̪ʰ} \\
\text{NEG} & \quad \text{HAB} \quad \text{coffee} \quad 1\text{S}>3\text{S}=\text{drink-NEG} \\
\end{align*}
\]

*I never drink coffee.*

(90) Towa (Yumitani 1998: 188)

\[
\begin{align*}
\text{h̥i} & \quad \text{da} \quad \text{q̥witʰ̥-q̥ó} \\
\text{h̥i} & \quad \text{da} \quad \text{q̥-w̥=l-s̥-q̥ó} \\
\text{NEG} & \quad \text{3S-NEG=RFL-wake.up.PF} \\
\end{align*}
\]

*S/he did not wake up*

There may be some relationship between these negative particles and indefinite pronouns.

Kiowa and Taos Northern Tiwa have negative stem forms of the verb, derived by a suffix fused with the stem, which accompanies other negation markers. This negative form seems to neutralize TAM distinctions. The other languages appear to be able to mark negation across a greater range of morphological verb forms.

(91) Kiowa (Watkins 1984: 187, 214)

\[
\begin{align*}
a. \text{hón} & \quad \text{mátʰən} \quad \text{cá'ñ} \quad \text{k̥í d̥el-g̥} \\
hón & \quad mátʰən \quad Ø=cá'ñ-\hat{o} \quad k̥í d̥el-g̥ \\
\text{NEG} & \quad \text{girl} \quad \text{3S.ITR=arrive-NEG} \quad \text{yesterday-since} \\
The \text{girl hasn’t come since yesterday.} \\
b. \text{ʔó-d̥é} \quad \text{Colorado-yə} \quad \text{cán} \\
\text{ʔó-d̥é} \quad \text{Colorado-yə} \quad \text{Ø=cán} \\
\text{there-toward} \quad \text{Colorado-at} \quad \text{3S.ITR=arrive.PF} \\
\text{She arrived from (way off in) Colorado.} \\
\end{align*}
\]

(92) Taos Northern Tiwa (Trager 1935-1972)

\[
\begin{align*}
a. \text{ti=mú} & \quad \text{tiwɔ̃múmi} \\
\text{ti=mú} & \quad \text{ti=wo-μúmi} \\
\text{1S>33=see.PF} & \quad \text{1S>3S=NEG-see.NEG} \\
i \text{saw it} & \quad I \text{didn’t see it/don’t see it.} \\
\end{align*}
\]

The negative stem form can be seen in comparison of the (a) and (b) sentences above.

This morphology is required in addition to the other negation marking in the languages.
The Tiwa languages and Arizona Tewa mark negation constructions with the same morphology that occurs in (affirmative or negative) subordinate clauses.

(93)  

Southern Tiwa (Kroskrity 2010: 95 (citing a paper by Leap))

a. ɬiawran ɬiwnāpapseya altar’ag  
    ɬiawra-n ɬiw=na-pab-se-ya altar’ag  
    woman-P 3P>3P=NA-flower-put-PRS altar-on

   The women put flowers on the altar.

b. ɬiawran ɬiwnāpapsemi altar’ag  
    ɬiawra-n ɬiw-e=na-pab-se-mi altar’ag  
    woman-P 3P>3P-NEG=NA-flower-put-PRS SB altar-on

   The women are not putting flowers on the altar.

c. thumdayoya ɬiawran nāmįsatu’ay ɬiwehi  
    thumdayoya ɬiawra-n ną-misatu-’ay ɬi-we-hi  
    yesterday woman-P NA-church-at 3I-be-FUT

   ɬiwnąpapsemi’i altar’ag  
   ɬiw=na-pab-se-mi=ɬi altar’ag  
   3P>3P =NA-flower-put-PRS.SB=REL altar-on

   The women who put flowers on the altar will be at church tomorrow.

(94)  

Arizona Tewa (Kroskrity 1977: 121; 2010: 92)

a. seŋ kʰiyó m̱nm̱m̱nuŋ  
    seŋ kʰiyó m̱n=m̱ṉnuŋ  
    man woman 3S>3=see.PF

   The man saw the woman.

b. seŋ kʰiyó wemąmm̱m̱ndi  
    seŋ kʰiyó we-m̱ṉ=m̱ṉ-di  
    man woman NEG-3S>3=see.PF-SB

   The man did not see the woman.

c. he’i seŋ nqm̱ndi ɬ’oyohk’o  
    he’i seŋ nq=m̱ndi ɬ’o=yohk’o  
    that man 3S.ITR=go.IPF-SB 1S.ITR=be.asleep.ST

   When that man went, I was asleep.

The Southern Tiwa affirmative main clause marker for the present in (93)a is quite distinct from the present marker used in the negative in (93)b. This latter marker in turn is identical to the form used in an affirmative (or negative) subordinate clause, such as the relative clause in (93)c. Similarly, the unmarked Arizona Tewa affirmative main clause
form in (94)a can be contrasted with the negative and subordinate forms in (94)b-c, both of which take the same marker, -di. No such syncretism appears in Kiowa, Rio Grande Tewa, or Towa. Rio Grande Tewa negation does always involve a negative enclitic, but there is no synchronic identity or correlation between this morpheme and any subordination marker or construction.

Finally, the Tanoan languages all take a negative prefix or proclitic in the area of the pronominal proclitic. This negative element occurs after the proclitic in Arizona Tewa, Northern Tiwa, and Towa—and seems to be optional in the latter—while Rio Grande Tewa and Southern Tiwa each appear to have alternative constructions with an element preceding or following the pronominal proclitic. It is not clear in either language whether there is a (synchronic or diachronic) difference in meaning or if the constructions are merely dialect or speaker-level variants. Most Rio Grande Tewa dialects seem to prefer the pre-proclitic construction (96)a while most Southern Tiwa seem to prefer the post-proclitic construction (95)a.

(95) Southern Tiwa (Leap 1970: 125)

a. ۾ینفمی ۾ین-ے-فمی

3S>>1S-NEG-fire.to.burn-PRS.SB  NEG-3S>>1S-fire.to.burn-PRS.SB

It is not my fire that is burning.  My fire does not burn.

(96) Rio Grande Tewa (Speirs 1966: 141; 96b adapted from field notes)

a. ۾ینکمئپی ۾ین-ے=مئ-پی

NEG-3S.ITR=go.IPF-NEG  3S.ITR.NEG=go.IPF-NEG

S/he is not going.

In both cases, it is probably the post-proclitic form ((95)a and (96)b) which is the older in each language. Discussion of relevant aspects of the negation constructions will be spread across Part III.
5.4 Grammatical Sketch Summary

There are of course other aspects to Kiowa-Tanoan languages more generally and to the individual languages—or subsets of the languages—that are important to mention. For instance, all of the languages also make frequent use of (first and second person) independent pronouns in addition to the verbal pronominal proclitics. Demonstrative determiners are also used for third person reference and anaphora in addition to their usage as modifiers. It is not within the scope of this study to survey their grammaticalized usage, however, and these will be discussed as relevant in Part II alongside lexical morphemes. They will also be mentioned in Part III reconstructing the pronominal indexation and voice system where they are relevant to the formal realization of constructions.

The reader may have noted that I describe nouns and verbs above, but do not discuss adjectives. Some researchers of Kiowa-Tanoan have analyzed the given languages as not having a distinct category of adjectives. These analyses follow a structuralist tradition wherein the absence of distinctive adjectival morphological constructions and overlap with nominal and verbal constructions trump any distributional or usage tendencies of lexemes denoting property concepts. My own analysis of these languages follows the more functional-constructional criteria posited by researchers such as Croft (1991, 2001) and, to a lesser degree, Dixon (2004, 2010), which propose to take into account semantics and syntactic distributional facts in addition to morphological constructions. By these criteria, there is indeed a set of lexical categories that could include the label “adjective” in Kiowa-Tanoan languages, showing the kind of morphosyntactic behavioral cline associated with semantic subclasses of property.
concepts as described by Wetzer (1992). Thus, some adjectives may form a predicate adjective construction similar to a predicate nominal construction (97)a-b while other adjectives form a predicate adjective construction similar to a stative verbal predicate construction (97)c-d.

(97) Rio Grande Tewa (Robbins et al 196: 35; Speirs 1966: 106, 153)

<table>
<thead>
<tr>
<th>a.</th>
<th>he'endiʔ</th>
<th>nq=tuk'</th>
<th>b.</th>
<th>po'ye k'u'</th>
<th>he'endiʔ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>he'en-ʔ</td>
<td>nq=mü'</td>
<td></td>
<td>po'ye k'u'</td>
<td>he'en-ʔ</td>
</tr>
<tr>
<td>big. D/P-BAS</td>
<td>3S.ITR=be.ST</td>
<td>three rock</td>
<td>big. D/P-BAS</td>
<td>three big rocks</td>
<td></td>
</tr>
<tr>
<td>The things are big.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

c. nq=xúa |
d. ka' xúa 'iŋ 

| nq=xúa |
| 3S.ITR=war. ST |
| It is warm |
| leaf | warm-1 |
| warm leaf. |

Even though both types above take the basic and inverse enclitics when used attributively in (97)b, d, their realization in predication constructions differ. That these are both deemed adjective classes (rather than being lumped with nouns and verbs respectively) is determined by the fact that the given lexical items do not show a comparable distribution with either prototypical nouns or verbs when analyzed across constructions. However, adjectives as a class will not feature prominently in the present study.

35 Under Croft's (1991, 2001, 2003) Radical Construction Grammar framework, the two types of adjectives mentioned would indeed belong to two different lexical classes. The 'classic' core lexical categories of "noun", "verb", and "adjective" are defined as universal functional prototypes formed around respective tendencies of usage of different semantic types. Lexemes denoting concrete object concepts are strongly correlated with a referential usage, from which is borne the prototype cluster of morphosyntactic behaviors deemed the "noun" in traditional analysis. Similarly, from the correlation between action concepts and predication comes the "verb" and from that between property concepts and modification comes the "adjective". Like any prototype-based radial category, some members are better fits than others and one can expect quite a range of behaviors within the (super)category, which are realized as distinct lexical categories within a given language. Moreover, given that semantic classes like "object", "property", and "action" and propositional acts like "reference", "modification", and "predication" are themselves highly complex categories (composed of identifiable categories) and exist alongside other functionally defined linguistic categories, one can expect to be able to identify some scores of lexical categories within a given language far beyond those posited in the Western grammatical tradition. Since most of these categories will show overlapping morphosyntactic behavior, the conservative analyst should be careful when defining a
Along similar lines, all of the Kiowa-Tanoan languages are rife with free particles—which probably tend towards cliticization—that are grammaticalized to express various concepts of evidentiality, epistemicity, mirativity, temporo-aspectuality, and discourse connectivity, among others.


a. hétó món ʔé hɔ́ ʔɔ́ yhɔ́ ɛmt’ɔ́
   hétó món ʔé hɔ́ ʔɔ́ yhɔ́ ɛm=t’ɔ́
   still probably now there 2S.ITR=stay.ST
   You are probably still there now.

b. béthɔ́ an ʔbó hɔ̀ nc’ɔ y’ét’ɔ́ de
   béthɔ́ an ʔbó -hɔ̀ nc’ɔ -y’ét’ɔ́ -dɛ̀
   MIR HAB 3↓>3S=always-come.late-IPF.IMP-POT-IPF.HSY
   I didn’t realize he was going to keep on coming late.

(99) Arizona Tewa (Yegerlehner 1957: 91)

a. gu hú biʔaŋ
gu hú bi=ʔaŋ
   DUB what.SB 2S.RFL=do.PF
   I don’t know what you did.

b. gú wódóha’mípídá
gú wó-dó=ha’mí-pí-dá
   INFR NEG-1S>3S=eat-POT-NEG-SB.OPT
   I should not have eaten it.

The Kiowa sentences in (98) illustrate a number of types of particles, include temporal, aspectual, modal, locative, and evidential/epistemic notions. While not as robustly illustrated, (99) shows Tewa to also possess similar particles, such as the epistemic markers shown. While such particles would easily find their place in a study of grammaticalization and historical reconstruction, limitations prevent me from attempting to tackle them here. For one, their respective ranges of functions have not been well described for any of the languages to date, while for some of the languages there may not
even be documentation of all the forms. The functional ranges would be especially needed for a historical study given that the particles of one language are not necessarily cognate with the particles of another language. These instances should lead an investigator to search for cognates among potential lexical sources, but it can be difficult to know where to look (beyond formal sound correspondences) if one has no idea of any part of the grammaticalization pathway as revealed by possible distribution across constructions. Even though Kiowa-Tanoan languages have received more attention to date due to their morphological richness, these particles perhaps will provide a far richer narrative in terms of both synchronic expressiveness and diachronic paths of grammaticalization and lexicalization.

This section has been intended to provide the reader with enough of the general structural characteristics of the seven Kiowa-Tanoan languages to be able to follow the arguments of the following chapters. Of course the nature of such an overview emphasizes the similarities among the languages and unfortunately gives short shrift to their diversity. The ensuing discussion in the rest of the dissertation should fill in the story of much of this diversity, some in grueling detail. For those wishing for a more streamlined narrative of the grammar of the individual Kiowa-Tanoan languages, the reader is recommended to the sources reviewed in chapter 3 above. This author has also been working on grammatical sketches of each of the languages in accompaniment with this diachronic study that will be available soon to share with serious Kiowa-Tanoanists. These sketches will hopefully not only provide such a language-by-language description taking into account the findings of this diachronic research, but

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36 Because of cultural sensitivity to the desires of many in the Pueblos, these sketches will of necessity be of limited distribution and circulation for now.
should also provide updates to and summations of the existing grammatical descriptions.

For the present work, however, this sketch should have presented the reader with adequate grounding in the language family for the analysis to come.
Part II: Historical Phonology of Kiowa-Tanoan
Part II will get us underway with the reconstruction of Proto-Kiowa-Tanoan by establishing the most basic formal correlations. This will namely entail identifying the regular—and some of the identifiable irregular—sound correspondences among the seven modern languages. Only in so doing can we be relatively confident that the appropriate morphemes from each language are being compared with each other and may form valid cognate sets. It is of course also a necessary step in reconstructing the Proto-Kiowa-Tanoan lexical forms with any hope of accuracy. Indeed the primary focus in the next few chapters will be on open-class lexical items, although we will see some correspondences that are to be more associated with grammatical morphemes, supporting those correspondences established among the pronominal proclitics in chapter 0. It will be seen that such a (rough) lexical-grammatical division is actually justified by the different types of correspondences that happen to exist among these two kinds of morphemes.

Before jumping into my own analysis of correspondences and reconstructions, I will first lead the reader through a summary of the phonology of each of the seven modern Kiowa-Tanoan languages in this chapter. These summaries will include the full sound inventories, the prevailing syllable structures and other phonotactic patterns, and the major phonological alternations that are to be observed in the languages. An understanding of such phonological information is necessary for following the ensuing discussion and comparative analysis. Also, even though the linguistic comparative

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1 This division undoubtedly follows consequentially from orthogonal factors such as utterance-level stress and prominence. That is, it is not the analysis of a given morpheme as “lexical” or “grammatical” in and of itself that determines the different correspondences; this is just a byproduct of formal processes that accompany grammaticalization and lexicalization.
method emphasizes one-to-one segmental correspondences, evidence for diachronic relationships between languages will frequently be observable from synchronic intersegmental patterns (i.e. phonotactics and allophony) within the individual languages.

Chapter 0 will then give an overview of the comparative-historical analyses that have appeared to date. While my study in this dissertation aims to be much more thorough and extensive than anything that has been published so far, it is not the first to touch on certain areas. Many of the most basic of consonant and vowel correspondences in lexical stems have been recognized since at least the 1960s. As the reader will see through the following chapters, while these earlier established correspondences and reconstructions are not wrong—at least, not most of them—they are far from being comprehensive. There are many developments within the four main branches of the family and the seven individual modern languages that have not been previously accounted for as well as some previously undescribed patterns that appear to go back to the proto-language.

The next three chapters will then present my own analysis of sound correspondences among the languages and reconstruction of Proto-Kiowa-Tanoan phonology and lexical forms. This presentation begins with the vowels in chapter 0. Reconstructing the vowel system turns out to be critical to unraveling the developments of consonants. As many similarities as we can see in the vowel inventories of the modern languages, the Proto-Kiowa-Tanoan inventory is reconstructed to be rather different.

The vowels have had a particularly striking influence on the stem-initial consonants reconstructed in chapter 0. Cognates show a substantial number of correspondences involving different places and/or manners of articulation across the
seven modern languages, although laryngeal features such as aspiration and glottalization are typically retained. One shortcoming of the previous studies discussed in chapter 0 is that they did not recognize such alternations, missing out on large categories of cognates important for reconstructing the proto-language stem-initial consonant system.

Word-internal and stem-final consonants, analyzed and discussed in chapter 10, have never been adequately addressed in past research, when they’ve been mentioned at all. We will find in this chapter, however, that the reconstruction of these consonants, although difficult, is ultimately fruitful for an understanding of the evolution of the language family. Indeed, future studies of suffixal morphology in the Kiowa-Tanoan languages must recognize that stem-final consonants are the gateway to analyzing any highly grammaticalized suffixes that follow lexical stems.

The following subsections of this chapter will briefly survey what I deem to be the most important phonological information for each of the seven modern languages in order to follow the subsequent analysis. I will present the languages in the same alphabetical/geographic order as in the literature review of chapter 3: Kiowa (6.1), Rio Grande Tewa (6.2), Arizona Tewa (6.3), Taos Northern Tiwa (6.4), Picuris Northern Tiwa (6.5), Southern Tiwa (6.6), and Towa (6.7). While I do base these overviews on previous phonological descriptions of these languages where available, I do not follow them blindly. Thus, readers familiar with the literature on Kiowa-Tanoan languages may find the occasional innovative approach to certain areas of a phonological system, for better or for worse. In such instances I will aim to mention the original analysis in addition to my own.
As a comment on transcription, the reader will note that I make use of a (modified) Americanist transcription convention in my representation of Kiowa-Tanoan language forms. I do so because of its familiarity within the literature on Native American languages—making it all the more easier for comparison—and because of its single-symbol representation of certain complex sounds common in the family, like affricates. However, when discussing actual phonetic form—usually placed in square brackets []—I will make use of the alphabet of the International Phonetic Association in order to most clearly represent the articulation. I try to mark the different conventions when juxtaposed, so hopefully this leads to no confusion for the reader.

6.1 Kiowa

The phonology of Kiowa is fairly well described, although Sivertsen (1956) constitutes the only published study of the phonetics of the language. The following description is primarily based on the work of Watkins (1984) with some addenda from Harbour (2008), although I do provide some of my own observations on the distribution of tones in the language.

6.1.1 Kiowa Segmental Inventory

6.1.1.1 Kiowa Consonants

Table 6-1 presents the consonant inventory of Kiowa. Segments in parentheses are of restricted and/or specialized distribution, which will be mentioned below. It will be seen that Kiowa shows more oral stops than the other languages, not having undergone certain changes that affect the Southwestern languages.
Table 6-1: Kiowa Consonant Inventory

<table>
<thead>
<tr>
<th></th>
<th>Labial</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
<th>Labiovelar</th>
<th>Laryngeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiceless Stops</td>
<td>p</td>
<td>t</td>
<td>k</td>
<td></td>
<td>(?)</td>
<td></td>
</tr>
<tr>
<td>Voiced Stops</td>
<td>b</td>
<td>d</td>
<td>g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirated Stops</td>
<td>pʰ</td>
<td>tʰ</td>
<td>kʰ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ejective Stops</td>
<td>p’</td>
<td>t’</td>
<td>k’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiceless Affricates</td>
<td>c</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ejective Affricates</td>
<td>c’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiceless Fricatives</td>
<td>s</td>
<td>(š ~ ç)</td>
<td></td>
<td>h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiced Fricatives</td>
<td>z</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal Stops</td>
<td>m</td>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approximants</td>
<td>l</td>
<td>y</td>
<td></td>
<td></td>
<td>(w)</td>
<td></td>
</tr>
</tbody>
</table>

All of the above consonants have the specified articulation in most contexts when in syllable onset position, a position in which all of them may occur. The alveolar sonorants /n, l/ are palatalized when they precede a high front vowel [i] and before imperfective allomorph -(y)a (where the “(y)” represents the palatalization when following these sonorants). The velar stops are always pronounced with a strong palatal off-glide before the vowel /a/. This sequence is represented as “kya, gya, kʰya, k’ya” in the literature\(^2\), a practice which will be followed here, as shown in (1).

(1) Kiowa palatalized velars (Watkins 1984; Harbour 2008)

<table>
<thead>
<tr>
<th></th>
<th>remainder</th>
<th>gyasál it is hot</th>
<th>kʰyágyá stretch (DTR.PF)</th>
<th>k’yá’hî· man</th>
</tr>
</thead>
<tbody>
<tr>
<td>kyáýgu</td>
<td>Comanches</td>
<td>pó·gya beads</td>
<td>kʰyáhî·gô· tomorrow</td>
<td>k’yagóp brain</td>
</tr>
</tbody>
</table>

In coda position, the stops /p, t/ are often just realized as a glottal stop [ʔ] in rapid speech (2)a. The lateral approximant /l/ is pronounced as a lateral affricate [dl] when a coda and is devoiced to [d̥l] when word-final (2)b.

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\(^2\) This predictable off-glide is not written in the Parker McKenzie Kiowa orthography now in popular use in the Kiowa community, cf. Kiowa Online Dictionary (2014).
Kiowa coda allophones (Watkins 1984: 8, 15, 16)

a. Stop laryngealization
   \[t'átkyá \textit{sever (S/D) (DTR.PF)} \quad [t'á\text{̰}kjé]\]
   \[cóy a'óp \textit{Pour him some coffee!} \quad [cója'ó]\]

b. Lateral affrication
   \[gúldɔ \textit{be red (ST)} \quad [gúd\text{̱}dɔ]\]
   \[háyá\text{̰}al \textit{every which way} \quad [hájá\text{̱}d]\]

Other specifications on consonant distribution will be described with phonotactics below.

The segment [w] occurs only in some common interjections adopted from Comanche, probably within the historical period. It will thus play no role in the discussions of this chapter. The palatal fricative [ʃ ~ ç] is the realization of what Harrington (1928) and Watkins (1984) report as onset cluster /sy/. It seems to occur only in the related stems \[sy\text{̱n small, young (S)} \text{ and } sy\text{̱n small, young (D/P)}\]. Given the tautosyllabic and monomorphemic form of these morphemes, I’m not sure of the basis for analyzing this as a consonant cluster synchronically rather than as a unique phoneme of restricted distribution.3

Both Sivertsen (1956) and Watkins (1984) deem the glottal stop [ʔ] to be non-phonemic since it has a predictable distribution. In coda position they make a good case for phonetic glottal stop being derived from tonal phenomena (see below) and as an allophone of the coda stops described above. In onset position it occurs only in careful speech before an (otherwise) vowel-initial word and intervocalically. In faster speech, i.e. more often than not, this position may contain a hiatus, a slight glide, or nothing at all, as illustrated in (3).

3 From a diachronic perspective, the analysis as /sy/ appears to be essentially correct, but neither author presents any information that would indicate that the sequence is ever pronounced as [sj] in the modern language. Laurel Watkins (p.c.) indicates the analysis was made on analogy with other /Cy/ sequences.
Kiowa glottal stop (Watkins 1984: 15)

\[
\begin{align*}
s\hat{\vow} \vow & \quad \text{get angry} \quad [s\hat{\vow} \vow \sim s\hat{\vow} \vow \sim s\hat{\vow} \vow] \\
h\hat{\vow} \vow & \quad \text{road} \quad [h\hat{\vow} \vow \sim h\hat{\vow} \vow]
\end{align*}
\]

Note however that whether pronounced as a glottal stop, hiatus, or not at all, this contrasts with all of the other consonants above. However, there is no claim to a contrast between \([?]\) and its absence in the literature. Thus, aside from the specification of its actual phonetic realization (variable under certain conditions), it is something of an arbitrary choice whether to deem \(/?/\) a phoneme in onset position or not\(^4\). It does not appear that anything in the synchronic or diachronic phonology is contingent upon a choice one way or the other. I diverge from the practice of researchers like Laurel Watkins and Daniel Harbour in opting to write it, if only to help more clearly demarcate syllable and morpheme boundaries.

### 6.1.1.2 Kiowa Vowels

The vowels of Kiowa are to be seen in Table 6-2. There are six qualities with two-way contrasts in length—short on the left versus long on the right—and in nasality. It appears that all vowel qualities may occur in all combinations of length and nasality (but see below on the relative frequency of occurrence of the vowels).

---

\(^4\) Based on some of the examples in Watkins (1984) in her discussion of phonetics, however, I do wonder whether there might not be some vowel-initial morphemes that phonemically lack an onset glottal stop. Pronominal proclitics and some other grammatical particles seem to have distinctive behavior in the few examples of narrowly transcribed longer speech in her grammar, namely in having no inserted onset glottal stop. If this is indeed fairly systematic, it may provide evidence for treating onset glottal stop as a phonemic segment since it would provide evidence of contrast between morpheme-initial glottal stop and its absence.
Table 6-2: Kiowa Vowel Inventory

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th></th>
<th>Nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Front</td>
<td>Back</td>
<td>Front</td>
</tr>
<tr>
<td>High</td>
<td>i, i</td>
<td>(u, u’)</td>
<td>i, i</td>
</tr>
<tr>
<td>Mid</td>
<td>e, e’</td>
<td>o, o’</td>
<td>e, e’</td>
</tr>
<tr>
<td>Low</td>
<td>a, a</td>
<td>ɔ, ɔ’</td>
<td>ą, ą’</td>
</tr>
</tbody>
</table>

The contrast in length is neutralized in closed syllables, the vowel being pronounced as short in these instances. Similarly, the contrast in nasality is synchronically neutralized in the same syllable as a nasal consonant (whether onset or coda). All vowels in such an environment are nasalized. The high short vowels /i, u/ are lowered and centralized when they precede a coda nasal, being pronounced (with the tautosyllabic nasalization) as [ɨ̃, ź̃]. Conversely, nasal vowels never occur before a non-nasal coda consonant.

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The long mid vowels /e’, o’/ are pronounced as diphthongs [ei, oo], as are their nasal counterparts. The low back vowel /ɔ/ varies between low back rounded [ɔ] and unrounded [a]. In an unstressed open syllable, it is raised and centralized to [u]. The low front vowel /a/ is typically pronounced as low front [a], but raises to [æ] following a palatal glide or off-glide. It also tends towards this raised quality when lengthened and when nasalized. In a syllable closed by a nasal consonant, it may raise even higher, ranging from [❛] to [ɛ̃].

The vowel /u/, in all forms of length and nasality, occurs only after velar stops\(^5\), as a reflex of the Proto-Kiowa-Tanoan labiovelar consonants (Hale 1967, Watkins 1977). This will be discussed with consonant correspondences in chapter 0.

---

\(^5\) There is some dialectal exception to this. The distal deictic morpheme ʔoy- is pronounced as [ʔuy] by some speakers.
There are three tone qualities in Kiowa: low (unmarked), high (marked by an acute accent [´]), and falling (marked by a circumflex accent [ˆ]). In terms of basic correlation with segments, falling tone may only occur on a heavy syllable, i.e. a long vowel or a closed syllable with a coda sonorant. High and low tones show no such restrictions. Phonetically, high and low are both normally realized as level pitches although high tone on a long vowel may be pronounced with a gradual drop in pitch. High tones, but not low tones, do also show downstepping across an utterance. Falling tone is realized as an abrupt drop in pitch, often with heavy laryngealization. When word- or utterance-final (in a closed or open syllable), or when word-internal before a stop, this laryngealization is often realized as a full glottal closure.

This three-tone inventory hardly represents the complete story, however. In fact Watkins (1984) runs through a number of phonological and morphophonological tone rules that make a set of restrictions clear. First, there appear to be almost no words with only low tone. The only monosyllabic low tone morphemes that Watkins gives in her grammar are pronominal proclitics—bound morphemes in some capacity—and some highly grammaticalized particles which I suspect may tend to be phonologically bound clitics to some extent as well. She gives only three disyllabic words with a low-low tone pattern on the two syllables, all of which are temporal or spatial adverbs, and it appears that effectively no longer words of all low tone occur at all. In other words, all

---

6 I have seen two other disyllabic words transcribed with low-low tone in Kiowa examples in the literature: keqte grandfather and tfaqte (maternal) grandmother. These are both “naming” forms of the kinship terms (used in lieu of a personal name), which may be significant in explaining the tone under an analysis of the constructions in which they tend to occur. Laurel Watkins (p.c.) also notes that there are some personal names with all low tones.
monosyllabic words (4)a bear either high or falling tone and virtually all disyllabic (4)b or longer (4)c words must contain at least one syllable with a high or falling tone.

(4) Kiowa word-level tones (Watkins 1984)

a. Monosyllabic

<table>
<thead>
<tr>
<th>Unicode</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>kíˑ</td>
<td></td>
<td>meat</td>
</tr>
<tr>
<td>pêˑ</td>
<td></td>
<td>turkey</td>
</tr>
<tr>
<td>sép</td>
<td>sew (PF)</td>
<td></td>
</tr>
<tr>
<td>kʰûl</td>
<td>be lying (P) (ST)</td>
<td></td>
</tr>
<tr>
<td>sôn</td>
<td>grass</td>
<td></td>
</tr>
<tr>
<td>sän</td>
<td>child</td>
<td></td>
</tr>
<tr>
<td>gûy</td>
<td>outside</td>
<td></td>
</tr>
<tr>
<td>kûy</td>
<td>coyote</td>
<td></td>
</tr>
</tbody>
</table>

b. Disyllabic

<table>
<thead>
<tr>
<th>Unicode</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>k'ɔ́ˑ</td>
<td>bite (PF)</td>
<td></td>
</tr>
<tr>
<td>héˑba</td>
<td>enter (PF)</td>
<td></td>
</tr>
<tr>
<td>tʰalí</td>
<td>boy</td>
<td></td>
</tr>
<tr>
<td>pʰátkyá</td>
<td>quilt</td>
<td></td>
</tr>
<tr>
<td>hóˀɔ̨mn</td>
<td>road</td>
<td></td>
</tr>
<tr>
<td>mąyí</td>
<td>woman</td>
<td></td>
</tr>
<tr>
<td>pâyda</td>
<td>summer</td>
<td></td>
</tr>
<tr>
<td>pᵃˑlē</td>
<td>weak</td>
<td></td>
</tr>
<tr>
<td>kʰɔˀał</td>
<td>dishes</td>
<td></td>
</tr>
<tr>
<td>hêˑmą</td>
<td>die (IPF)</td>
<td></td>
</tr>
<tr>
<td>k'yá·hị'</td>
<td>man</td>
<td></td>
</tr>
<tr>
<td>pəbî</td>
<td>brother (VOC)</td>
<td></td>
</tr>
</tbody>
</table>

c. Trisyllabic or longer

<table>
<thead>
<tr>
<th>Unicode</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>tʰóˑ t'ɛˑnɛ́</td>
<td>killdeer</td>
<td></td>
</tr>
<tr>
<td>kʰyáˑpʰygyá</td>
<td>it's almost daylight</td>
<td></td>
</tr>
<tr>
<td>mɔ̨ˑsɔ́hį́</td>
<td>raven</td>
<td></td>
</tr>
<tr>
<td>átʰaydoˑto</td>
<td>they (PL) ought to hang on to it</td>
<td></td>
</tr>
<tr>
<td>kʰodêˑde</td>
<td>suddenly</td>
<td>gyakoˑdōt'oˑɔ̨mgya</td>
</tr>
</tbody>
</table>

On top of this restriction, the prevailing pattern is that a high or falling tone cannot occur in a word after a falling tone or after a high-low sequence⁷. That is, once there is a drop from the high to the low pitch spectrum, the tone cannot return to high within the word.

(5) Kiowa pitch drop accent (Watkins 1984)

a. atʰóˑhɛˑmą | I am thirsty |

b. áňhê tɛpɔˑgyaˑ | she could be heard telling stories |

c. áňh'y k'olpʰapɔˑʔał hɛl | just as (something) with jingling bells was heard coming |

There may or may not be a low tone preceding the falling tone, but all following syllables must be low, shown in (5)a and (5)b. The same is true once there is a high-low sequence across syllables, as in (5)c. There are also numerous morphemes in the language which

---

⁷ Pronominal proclitics may prove exceptions to this if they themselves bear high tone but are followed by a verb stem beginning with low tone (which must then be followed by a high or falling tone).
Watkins calls “tone-lowering” (TL), which bear a high tone themselves, but cause all subsequent tones in the word to be low in almost all constructions. This is illustrated in (6)a with the privative suffix hé: without, the tone of which becomes low following such tone-lowering morphemes (in the left-hand column) but not following other morphemes (in the right-hand column). The forms in (6)b show the effect of tone lowering in verb forms and compounds.

(6) Kiowa tone-lowering morphemes (Watkins 1984: 34-35)

a. p’ó’-hé’ moon  p’ó’-hé’ river
t’ó’-hé’ cold  t’ó’-hé’ face
sé-hé’ cactus  sé-hé’ odor

b. gúnhel < gún-hél discard-HSY  bó’hél < bó’-hél see-HSY
kúnco’dé’ < kún-có’dé’ discard-be.lying.S/D.IPF.HSY  pó’tá’gya < pó’tá’gya see-nice

There are some well-defined exceptions to this pattern: a deverbal noun construction that takes a word-final high tone no matter what the preceding tone pattern (7)a, many of the interrogative pronouns (7)b, which show a FH or FF pattern8, and some compounds9 (7)c.

(7) Exceptional tone patterns in Kiowa (Watkins 1984)

a. zon-t’á’pé squirrel (pine-pick up)
kb’oy-bá-tô’lé butterfly (cloth-against-quer)

---

8 These interrogative pronouns tend to be identical to the corresponding indefinite pronouns except that the latter have a high tone instead of the initial falling tone.

9 It could be argued that those compounds that do not follow the prevailing tone patterns may not actually form a single phonological word. That is, while the constituent stems of all compounds may form a single grammatical word, it may be that there are two different types of compounds that differ in whether or not they form a single phonological word. One piece of evidence for this is compounds that involve a disyllabic stem with a LH tone pattern. When the second member of a compound, the low tone of such stems raises to H after a H: sá-t’č’né winter-bird > sá-t’č’né snow hunting (Watkins 1984: 37). The exception is when the first stem is tone-lowering: in this case the LH tone pattern remains as is even though tone-lowering stems always cause all following tones to drop to L otherwise: pê-t’č’né sand-bird > pê-t’č’né seagull (Watkins 1984: 37), cf. pê-hé’ without sand. This suggests the two parts of the compound may not form a single unit at some level. Of course we have to avoid getting into a circular argument in this area, defining a phonological word by tone patterns and isolating tone patterns according to phonological words. Further analysis of Kiowa tone patterns is needed before a full statement can be made.

361
b.  hâ'têl  who
    hâ'bê  which

c.  cá-k'om-zâlê  ground squirrel (prairie dog?-?)
    kʰôlék'yâlê  frog (?-?caller)

Finally, there are a number of lexical stems that bear a high tone when they stand as independent words or take inflectional suffixes (8)a, but take low tone when they occur in compounds (8)b.

(8)  Kiowa lexical low tone (Watkins 1984)

a.  cên  mud       cêngyá  in the mud
    tó  house       tô'kya  at the house

b.  cên-hê  not muddy       cên-p'ô  Rainy Mtn. Creek (mud-river)
    tô'-hî  tepee (house-real)       tô'- tô'-pôôt  shade of house (house-cold-blow)

Watkins analyzes these as bearing a lexical low tone, an analysis I will follow. This low is raised to high in accordance with the requirement that a phonological word must bear at least one high or falling tone. The lexical low tone can then be realized only in compounds where the other stem may bear the requisite H or F.

There are a number of other morphophonological tone alternations in the language that I will not describe here. The above should suffice as overview of the regular accentuation pattern that occurs in Kiowa.

6.1.2  Kiowa Phonotactics

Segmental phonemes are also constrained in their combinatory possibilities, and a brief survey of these phonotactics will better facilitate cross-linguistic comparison than will just an inventory of individual sounds. As noted above, all of the given consonants may occur as syllable onset. However, /l/ may not occur word-initially, nor does it ever
occur morpheme-initially. It is the only consonant with such a restriction. Kiowa is also
the only Kiowa-Tanoan language that seems to allow an onset consonant cluster under
synchronic analysis. As already reported, a velar stop is always released into a palatal
 glide anytime it is followed by the low front vowel /a/. This is fully predictable. A palatal
glide may also occur after other consonants as well—/p’, pʰ, kʰ, k’, s, l, n/—preceding the
vowels /a, ɔ, o/, cf. the comments on the sound [ʃ – ç] above. Such instances are lexically
specified and, in synchronic perspective, seem to be best considered actual consonant
clusters, illustrated in (9).

(9) Kiowa Cy onsets (Watkins 1984; Harbour 2008)

| p’yóy     | sisters (I) (cf. < p’í sister) | k’yótkó | consume greedily (PF) |
| p’yáy     | quarrel (ROOT)                 | sy̞n    | be small (S)          |
| p’ýýsón   | kindling                      | ?ólyá   | drop, fall (IPF)      |
| k’ý̂do    | throb, pulse (PF)             | hínya   | get dug (IPF)         |

We will see in chapter 0—and as was already suggested in Watkins (1984)—that in
diachronic perspective, the /y/ in these instances are actually reflexes of the following
vowel and are not to be reconstructed as consonantal glides.

The permissible syllable codas are /p, t, m, n, l, y/, i.e. the non-velar voiceless
 Stops10 and any of the sonorants. There are no consonant clusters in coda position and all
of these codas may occur word-internally or word-finally. As noted above, vowel length
is neutralized in a closed syllable, so these codas are only preceded by short vowels.
Also, the nasal codas /m, n/ only follow nasal vowels and oral codas /p, t, l/ only follow
oral vowels. The palatal glide may follow vowels of any nasality, but is not found

10 Many of the coda stops /p, t/ derive from voiced stops /b, d/, which are devoiced in coda position.
However, the morphophonology of the language is such that the historically precedent voiced allophone
may not surface very often in some morphemes.
following the mid or high front vowels /i, į, e, ė/. Syllables closed by the sonorants /m, n, l, y/ may take a falling tone, but those closed by the stops /p, t/ may not, as shown in (10).

(10) Kiowa closed syllables (Watkins 1984)

<table>
<thead>
<tr>
<th>Syllable</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>kɔ̀l</td>
<td>cross, turn</td>
</tr>
<tr>
<td>ŝet</td>
<td>bear (BUT, *ŝet not a possible word)</td>
</tr>
<tr>
<td>pʰɑ̯y</td>
<td>tie</td>
</tr>
<tr>
<td>ŝep</td>
<td>rain (BUT, *ŝep not a possible word)</td>
</tr>
<tr>
<td>hɛm</td>
<td>die (PF)</td>
</tr>
<tr>
<td>sy̱n</td>
<td>small (D/P)</td>
</tr>
</tbody>
</table>

With respect to vowel length, other restrictions can be observed. A monosyllabic word with an open syllable must contain a long vowel, a handful of grammaticalized particles aside (11)a. Disyllabic words may have both syllables long or one long and one short. Only a scant few CVCV words with a short vowel in both syllables appear to exist (11)b. Similar restrictions apply to longer words. Watkins (1984: 20-25) also notes a prevalent pattern in compounds for the first syllable to be light and the second to be heavy, i.e. CVCVˑ or CVCVC, but many heavy-heavy compounds also exist, as do heavy-light (11)c.

(11) Kiowa vowel length (Watkins 1984)

<table>
<thead>
<tr>
<th>Syllable</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>kí</td>
<td>meat</td>
</tr>
<tr>
<td>né</td>
<td>but</td>
</tr>
<tr>
<td>tá̯</td>
<td>star</td>
</tr>
<tr>
<td>gɔ̠</td>
<td>and (SS)</td>
</tr>
<tr>
<td>gú̯</td>
<td>wise</td>
</tr>
<tr>
<td>tógù̯l</td>
<td>young man</td>
</tr>
<tr>
<td>tékʰi</td>
<td>every day</td>
</tr>
<tr>
<td>k’ókɔ́y</td>
<td>elk</td>
</tr>
<tr>
<td>hɛgɔ́</td>
<td>then</td>
</tr>
<tr>
<td>mɔ́hì̯</td>
<td>small owl</td>
</tr>
<tr>
<td>hɛtɔ́</td>
<td>still</td>
</tr>
<tr>
<td>ɔ́lhɛtɔ̀</td>
<td>bank</td>
</tr>
<tr>
<td>tɔptʰa’dɔ̯</td>
<td>cane</td>
</tr>
<tr>
<td>tɔ́hâ̯</td>
<td>get up to talk (PF)</td>
</tr>
<tr>
<td>k’óptʰá̯kɪ́</td>
<td>partridge</td>
</tr>
</tbody>
</table>
Such patterns will play an important role in future investigations of vowel length in Kiowa-Tanoan languages, the historical status of which is uncertain.

6.1.3 Kiowa Phonological Alternations

Finally in this section, it will be important to recognize the phonological and morphophonological alternations that are to be found in Kiowa. A reader of Watkins’ (1984) Kiowa grammar may come away with an impression of great morphophonological complexity in the language. However, many of the phonological rules she describes apply only, or primarily, within the domain of the synchronically portmanteau pronominal proclitics. Such alternations will be set aside until the reconstruction efforts in Part III. Most of the remaining generalizable alternations found in stems and bound morphology will be surveyed here.

6.1.3.1 Kiowa “Dental-Velar Switch”

Following from the above restrictions on consonant-vowel combinations, there are a few alternations of which to take note. The complementarity of alveolars and velars with respect to high and mid front vowels respectively leads to an alternation that Watkins names “dental-velar switch”. In this alternation an alveolar stop will change to the velar stop corresponding in laryngeal state when it comes to be followed by a high front vowel. In the same way, a velar stop will become the corresponding alveolar when it comes to be followed by a mid front vowel. This alternation is actively observable as such\(^\text{11}\) only in a couple of stem-initial consonants (12)a and in “thematic consonants”

\(^{11}\) An internal reconstruction of the pronominal indexation proclitics reveals many cases of dental-velar switch as well.
(12)b, which Watkins (1984: 154) takes to be historical suffixes that have been lexicalized following many verb roots\textsuperscript{12}.

(12) Kiowa "dental-velar switch" (Watkins 1984: 43-46)

\begin{itemize}
  \item[a.] tę̌m pull (PF) \quad kí pull (ROOT)
  \quad tʰę́p exit (PF) \quad kʰîya exit (IPF)
  \item[b.] hą́dɔ shout (PF) \quad hą́dé shout (IPF.HSY) \quad hą́gî shout (IPF.IMP)
  \quad mą́gɔ feed (PF) \quad mą́dè feed (IPF.HSY) \quad mą́gî shout (IPF.IMP)
\end{itemize}

Notice in (12)b that the different thematic consonants /d/ or /g/ (observable when followed by the perfective suffix -ɔ) converge to [d] before the imperfective hearsay suffix -ê and to [g] before the imperfective imperative suffix -î. This alternation will also show itself to be extremely important in identifying cognates amongst the Kiowa-Tanoan languages in the following chapters.

6.1.3.2 Kiowa Vowel Alternations

There is a sporadically observed vowel alternation that is stimulated by an adjacent consonant. The vowels /o, u, i, ũ, ĭ/ respectively change to /e, o, e, ǫ, ę/ when followed by a coda labial consonant /m, p/\textsuperscript{13}. Except in the /o ~ e/ alternation, this is an instance of vowel lowering. Note too that the quality of the labial consonant is itself correlated to a feature of the vowel: /p/ occurs after an oral vowel and /m/ after a nasal vowel, seen in (13).

\textsuperscript{12} The source of these thematic suffixes can be extrapolated from the analysis of stem-final consonants in chapter 10. Watkins (personal communication) has also revised her analysis of the thematic consonants since her 1984 publication, viewing the consonant as stem-final and the following vowel as a suffix, cf. Watkins (1996).

\textsuperscript{13} There is also at least one instance of /q ~ ǫ/: zǫ̋ tooth ~ zême tooth (COMP). Apparently no examples occur with verbs containing the vowel /q/, however: tʰq̩ drink (ROOT) > tʰóm drink (PF).
(13) Kiowa vowel shift (Watkins 1984: 163)

\[
\begin{align*}
\text{sô} & \quad \text{descend (ROOT)} & > & \text{ sé-p} & \quad \text{descend (PF)} \\
\text{k'ú} & \quad \text{lay (P) (ROOT)} & > & \text{k'ó-p} & \quad \text{lay (P) (PF)} \\
\text{k'î} & \quad \text{exit (ROOT)} & > & \text{ tê-p} & \quad \text{exit (PF)} \\
\text{-gû} & \quad \text{DISTRIBUTIVE (ROOT)} & > & \text{-gô-m} & \quad \text{DISTRIBUTIVE (PF)} \\
\text{hî} & \quad \text{die (ROOT)} & > & \text{ hê-m} & \quad \text{die (PF)} \\
\end{align*}
\]

The labial consonants may represent historical stem-final consonants, as discussed in chapter 10.

A last vowel alternation is not predictable, but does receive support through the documentation records. A small number of morphemes show an alternation in their vowel between /i/ and /ya/. A given word form will only show one or the other pronunciation, but a morpheme may show an alternation between two forms. The forms in (14) illustrate this alternation.


\[
\begin{align*}
\text{pʰî} & \quad \text{fire} & \quad \text{pʰyâysôn} & \quad \text{kindling} & \quad \text{pʰítóm} \sim \text{pʰyátóm} & \quad \text{firepit} \\
\text{k'î} & \quad \text{male} & \quad \text{k'yâ·hî} & \quad \man \\
\text{yî·ya} & \quad \text{disappear (IPF)} & \quad \text{yây} & \quad \text{disappear (PF)} \\
\end{align*}
\]

Significantly, older records from the 19th and early 20th centuries—including Harrington’s (1928) vocabulary—transcribe many words with /ya/ that today are pronounced with /i/, showing that such alternations may be the residue of a historical vowel change. This proves to be an important feature in the reconstruction of vowels in chapter 0.

6.1.3.3 Kiowa Consonant Devoicing

Another morphophonological alternation involving otherwise phonemic contrastive consonants is a change between a lateral /l/ and a stop, either /t/ or /d/. This
applies especially in three contexts. Some verbs or stative forms that end in /l/ in other constructions realize this final consonant as a /t/ when word-final in the perfective or basic stative form (15).

(15) Kiowa inflectional /l/ > /t/ (Watkins 1984: 50-52)

- él  be big (S) (ROOT)  >  ét  be big (S) (ST)
- gúl  write (ROOT)  >  gút  write (PF)
- tél  tell (ROOT)  >  tét  tell (PF)
- pʰíl  wipe (ROOT)  >  pʰít  wipe (PF)

A verb stem-final /l/ will also be realized as /t/ when followed by a consonant-initial inflectional suffix (but not when followed by a compounded stem). This primarily applies to the detransitivizing suffix shown in (16).


- gúl-gyá  write-DTR.PF  >  gútkyá  get written
- kʰúl-gyá  pull off-DTR.PF  >  kʰútkyá  get pulled off

Many noun stems that are /l/-final in the basic number change this to /t/ or /d/ in the inverse, illustrated in (17). The voicing of the stop is usually predictable from the tone, as described below.

(17) Kiowa /l/ > /d, t/ inverse (Watkins 1984: 41, 56-57)

- tógúl  young man  >  tógú·dó
- ˀɔ́l  head hair  >  ˀɔ́·dó
- pól  bug  >  pó·dó
- tál  skunk  >  tá·tɔ
- ˀɔ̨ntʰál  toe  >  ˀɔ̨ntʰá·tɔ
- sôl  onion  >  sô·tɔ

---

14 Watkins (1984: 56-57) actually describes the derivation of such forms as involving an inverse suffix -dó with subsequent deletion of the stem-final /l/ by consonant cluster reduction. The inverse suffix shows a great deal of allomorphy in its initial consonant, often with correlation in the place of articulation to the stem-final consonant. I therefore propose this /l/ to /d, t/ derivation by analogy with the other obstruent-lateral alternations seen above.
While Watkins (1984) describes the above as \textit{obstruenetization} processes—and this may indeed be the optimal analysis synchronically—the analysis of stem-final consonants in chapter 10 will suggest that historically these alternations are actually the result of a process of \textit{lateralization} (or \textit{lenition} more generally).

The /l/ alternation before consonant-initial suffixes also illustrates another regular alternation. An onset stop following a voiceless (or devoiced) coda /p, t/ must also be voiceless. This only appears to affect grammaticalized affixes and does not lead to alternations in compounds. This was seen in (16) above with the detransitivizing suffix \texttt{-gyá} \textasciitilde \texttt{kyá}, which occurs in its /k/-initial allomorph following the /t/ derived from stem-final /l/. Such onset devoicing also follows from tone and laryngeal effects. For example, voiced stops /b, d/ are devoiced following a falling tone (18)a, but there are morphophonological exceptions (18)b. This applies primarily to thematic suffixes on verbs and to inverse forms that show a lateral-stop alternation (as illustrated above).

(18) \small

\begin{itemize}
\item a. \texttt{há\textasciitilde-be} smoke (\texttt{PF.STEM}) \hspace{1cm} \texttt{hâ pe} pick up (\texttt{PF.STEM})
\item \texttt{\'i\textasciitilde-dé} miss intentionally (\texttt{PF.STEM}) \hspace{1cm} \texttt{\'i\textasciitilde-te} apportion (\texttt{PF.STEM})
\item \texttt{tó\textasciitilde-be} calm down (\texttt{PF.STEM}) \hspace{1cm} \texttt{tó\textasciitilde-te} gather (\texttt{PF.STEM})
\end{itemize}

\begin{itemize}
\item b. \texttt{k\textasciitilde-\acute{o\textasciitilde}-be} tip, fell (\texttt{PF.STEM}) \hspace{1cm} \texttt{k\textasciitilde-\acute{o\textasciitilde}-be} tip, fell (\texttt{IPF.STEM})
\item \texttt{yí\textasciitilde-dé} touch, feel (\texttt{PF.STEM}) \hspace{1cm} \texttt{yí\textasciitilde-de} touch, feel (\texttt{IPF.STEM})
\end{itemize}

The stems in (18)a show that this devoicing is stimulated by lexical falling tone, but is not similarly caused by the morphological falling tone seen in (18)b. Note too that there are many inverse forms of nouns where the inverse suffix begins with a voiceless stop when the stem bears a falling tone. The syllable preceding the suffix may be realized (in
relatively free variation) as a long vowel with falling tone or as a short high tone vowel closed by a glottal stop, as seen in (19).

(19) Kiowa inverse with voiceless stop (Watkins 1984: 57)

\[ \text{ˀé tʰál} \;	ext{corn} \;> \; \text{ˀé tʰá tɔ ~ ˀé tʰã tɔ} \]
\[ \text{c’ól} \;	ext{wing} \;> \; \text{c’ó tɔ ~ c’ó tɔ} \]
\[ \text{áʔál} \;	ext{lymph gland} \;> \; \text{áʔá tɔ ~ áʔã tɔ} \]

Watkins (1984) demonstrates that the stop devoicing and tone/laryngealization go hand-in-hand. Perhaps relatedly, a short vowel (or shortened vowel) is often closed by laryngeal constriction before a voiceless stop or affricate /p, t, k, c/, usually at a morpheme boundary (20).

(20) Kiowa pre-stop glottal (Watkins 1984: 59)

\[ \text{h̩l̩da-pa} \;	ext{dress-on} \;\rightarrow [h̩̭ld̩da'pa] \]
\[ \text{ˀó se-kya} \;	ext{throat-in} \;\rightarrow [ˀó se'kjæ] \]
\[ \text{t’ẽ nę-ceyo} \;	ext{bird-pet} \;\rightarrow [t’ẽ nę'tsejo'] \]

Laryngealization is thus a major feature of Kiowa and of Kiowa-Tanoan languages more generally.

6.1.3.4 Kiowa Suprasegmental Spreading and Contraction

The remaining few phonological processes are more subtle and play simpler roles in comparative analysis. Both palatal glides and nasalization on vowels will spread to an adjacent syllable across an intervening laryngeal consonant onset. A coda /y/ will cause a following onset /h/ or /ʔ/ to be pronounced as [hy] and [ˈy] respectively (21).

(21) Kiowa palatal glide spreading (Watkins 1984: 54)

\[ \text{ˀáy-hel} \;	ext{start off-hsy} \;\rightarrow [ˀájhedl̩] \]
\[ \text{tɔ tɔy ˀỳ mé} \;	ext{Father built it} \;\rightarrow [tɔ tɔjˈjỳ mé'] \]
A nasal vowel in one syllable will also cause the vowel in the preceding or following syllable to also become nasalized when only a glottal stop intervenes. This also applies across the glottal fricative /h/ sometimes as well. Such nasal spreading appears to be primarily anticipatory (22).

(22) Kiowa nasal spreading (Watkins 1984)

<table>
<thead>
<tr>
<th>Kiowa form</th>
<th>English</th>
<th>Phonemic form</th>
</tr>
</thead>
<tbody>
<tr>
<td>hó-ˀɔ̨n</td>
<td>road</td>
<td>[hɒ̞ˀɔ̨n]</td>
</tr>
<tr>
<td>kʰɔ́ˀɔ̨n</td>
<td>poor</td>
<td>[kʰɔ̞́ˀɔ̨n]</td>
</tr>
<tr>
<td>k’yá-ˀhê</td>
<td>man</td>
<td>[k’já̞ˀhê]</td>
</tr>
</tbody>
</table>

This spread of nasalization is not as pervasive as in the Tanoan languages. There are some suffixes, however, that show an oral-nasal alternation based on the nasality of the syllable to which they are added. The /p ~ m/ labial that causes the vowel lowering mentioned above is one instance, but nasalization also leads to alternations between voiced stops and nasals as well, seen in (23).

(23) Kiowa oral stop ~ nasal stop alternations (Watkins 1984: 50)

<table>
<thead>
<tr>
<th>Kiowa form</th>
<th>English</th>
<th>Phonemic form</th>
</tr>
</thead>
<tbody>
<tr>
<td>zél-bé</td>
<td>terrible</td>
<td>hén-mé</td>
</tr>
<tr>
<td>p’ɔ́y-bé</td>
<td>hard to solve</td>
<td>ɔ̞y-mé</td>
</tr>
</tbody>
</table>

Such alternations do not occur frequently enough to be considered fully productive within the language.

Finally, there are some instances of contraction when two short vowels are juxtaposed. This is mainly heard in rapid speech, but there are also some lexicalized contracted forms (24).
Such contraction will not be of particular importance in the comparative historical study of this chapter, but will have some small role in discussion of the pronominal proclitics of Part III.

6.1.3.5  Kiowa Verb Stem-Initial Consonant Ablaut

Chapter 5 mentioned the verb stem-initial consonant ablaut found throughout the family. The process occurs under morphosyntactic conditions and can hardly be said to have any synchronic phonological motivation, but its phonological effects must be recognized for the purpose of identifying cognates and correspondences. The process is at almost its least productive in Kiowa, but is certainly still present. The occurring alternations appear in (25).

(25)  Kiowa verb stem-initial consonant ablaut (Watkins 1984: 60-63)

<table>
<thead>
<tr>
<th>Basic form</th>
<th>~</th>
<th>Ablaut form</th>
</tr>
</thead>
<tbody>
<tr>
<td>b ~ p</td>
<td>h</td>
<td>tʰ</td>
</tr>
<tr>
<td>d ~ t</td>
<td>h</td>
<td>kʰ</td>
</tr>
<tr>
<td>z ~ c</td>
<td>k’</td>
<td>k</td>
</tr>
<tr>
<td>g ~ k</td>
<td>k’</td>
<td>c</td>
</tr>
</tbody>
</table>

Essentially, a voiced obstruent will become its voiceless counterpart while some stem-initial /h/’s will alternate with either /tʰ/ or /kʰ/, unpredictably from a synchronic standpoint. While none of these alternations can be said to be productive, they do occur in a number of stems. The exceptions are those two alternations involving the ejective...
/k'/ each of which is attested only in a single verb stem: k’ɔ́ˑ be lying (S/D) occurs as có- when in a bound form while k’úl be sitting/lying (P) occurs as kóp in certain inflected forms and as kúˑ- in certain bound forms. Examples of the other alternations appear in (26) below.


a. gyabóˑ
gya= bóˑ  
1S>3S=see.PF  
I saw him/her

b. ý póˑcán  
ý=póˑ-cán  
X>>1S=see.INC-come.PF  
S/he came to see me

c. égóp  
ý=gûˑ-p  
X>>1S=hit-PF  
you hit me

d. dómkúˑ  
dóm-kúˑ  
earth-hit.INC  
hoe

e. gyadè mγ’hólhel  
gya=dè -mγ hól=hel  
3P.ITR=sleep-get.ready.PF=HSY  
They got ready to sleep.

f. ýámóˑkʰól=tóˑ  
ý= móˑ kʰól-dóˑ=tóˑ  
3P>>1S=ready.INC-be.ST=FUT  
I’ll have them ready.

g. gyámγ hé mγ  
gyáˑ=mγ hé·m-γ  
3P>3S=teach-IPF  
They are teaching it

h. mêtémk’i  
mêté·m-k’i  
teach.INC-male  
teacher (male)

Examples (26)a-b and (26)c-d illustrate the voiced-voiceless alternation in verbal compounding and nominalization constructions respectively (contrasted with predicative use of the verb stems in the left-hand column). The alternation between /h/ and aspirated stops is found in (26)e-f and (26)g-h in the same types of construction. Given the lack of productivity of the process, the ablauted stem form does not occur as frequently across constructions as in the other Kiowa-Tanoan languages.
6.2 Rio Grande Tewa

Rio Grande Tewa is the most dialectally diverse of the Kiowa-Tanoan languages given that it is spoken at the largest number of distinct communities (six in New Mexico). The varieties are all mutually intelligible, but there are notable differences in pronunciation, lexical items, and morphosyntax. Unfortunately the various dialects have not all been studied sufficiently to catalogue all of the similarities and differences exhaustively even for just the phonology. As such, I will remark on only a few of the known variations as relevant and will otherwise present a rather generalized view of Rio Grande Tewa. Most of this description should hold for most or all of the dialects, but it is quite possible that some comments may prove erroneous for a given variety upon further study. Speirs (1966) provides the best available description of the phonology in publication, but many of the alternations below are based on my own study of the language.

6.2.1 Rio Grande Tewa Segmental Inventory

6.2.1.1 Rio Grande Tewa Consonants

The consonants of Rio Grande Tewa appear in Table 6-3. As with Kiowa, consonants of specialized distribution are marked by parentheses and I will comment on them below.

---

15 In the literature covered in chapter 3, the Tewa data documented are primarily (in order from greatest amount to least): Ohkay Ówingeh (San Juan) Tewa, Santa Clara Tewa, and San Ildefonso Tewa. Nambé and Tesuque (in that order) are far less well documented in the published literature. The original Pojoaque dialect is completely unattested and may have ceased to be spoken at the beginning of the 20th century. Fluent first language Tewa speakers currently residing at Pojoaque are from other Pueblos.
Table 6-3: Rio Grande Tewa Consonant Inventory

<table>
<thead>
<tr>
<th></th>
<th>Labial</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
<th>Labiovelar</th>
<th>Laryngeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiceless Stops</td>
<td>p</td>
<td>t</td>
<td>(tʰ)</td>
<td>k</td>
<td>kʷ</td>
<td>ʔ</td>
</tr>
<tr>
<td>Voiced Stops</td>
<td>b</td>
<td>d</td>
<td></td>
<td>g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirated Stops ~</td>
<td></td>
<td></td>
<td></td>
<td>kʰ</td>
<td>kʰʷ</td>
<td></td>
</tr>
<tr>
<td>Fricatives</td>
<td></td>
<td></td>
<td></td>
<td>kʰ</td>
<td>x  kʰʷ</td>
<td>xʷ</td>
</tr>
<tr>
<td>Ejective Stops</td>
<td>p’</td>
<td>t’</td>
<td></td>
<td>k’</td>
<td>kʷ’</td>
<td></td>
</tr>
<tr>
<td>Affricates</td>
<td>c</td>
<td>č , *j</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ejective Affricates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiceless Fricatives</td>
<td>s</td>
<td>š</td>
<td></td>
<td>h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiced Continuants</td>
<td>(v)</td>
<td>(r)</td>
<td>(ñ)</td>
<td>(η)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approximants</td>
<td>((l))</td>
<td>y</td>
<td></td>
<td>w</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As in Kiowa, there are a large number of obstruents, but the proportion of stops is shown to be fewer. Rio Grande Tewa has a larger number of affricates than any other Kiowa-Tanoan language. In contrast to Kiowa (and Tiwa), the glottal stop tends to be pronounced quite strongly as a stop. There is dialect and speaker variation in the articulation of the aspirated stop series. Tesuque and San Ildefonso Tewa tend to realize these as stops, Nambé and Santa Clara Tewa tend to produce them as fricatives, and there appears to be quite a bit of variation amongst San Juan Tewa speakers. These isoglosses are not absolute and I have heard Santa Clara and Nambé speakers produce aspirated stops on occasion. Amongst this series, the labiovelar is the most likely to be pronounced as a fricative and actually I am not entirely sure how often it receives a stop articulation even in San Ildefonso and Tesuque (although I have heard it in at least one lexical item with a stop pronunciation from a Tewa speaker before). In the dialects which tend to use fricatives, it is my impression that the alveolar is the most likely to be pronounced as a stop.
Many of the richest primary sources for Tewa, while acknowledging the variation, make use of transcription/orthographic conventions which fail to specify which pronunciation was heard or most used. I will therefore use the aspirated stop notation (pʰ, tʰ, kʰ, kʷʰ) or fricative notation (f, θ, x, xʷ) only when I am certain which articulation is intended in a given source. Otherwise, I will make use of a “neutral” notation which leaves the actual articulation unspecified: ph, th, kh, khw. These digraphs and trigraph can be read as either aspirated stops or fricatives, depending on dialect. It will be seen from the phonotactics below that there is no risk of confusion with consonant sequences in using this notation.

The voiced affricate phoneme /j/ (IPA [ʤ]) occurs only in the Santa Clara dialect where other dialects have /y/. This correspondence appears only to apply to instances of /y/ that are synchronically or historically morpheme-initial. The rare morpheme-internal /y/ of the other dialects also seems to occur as /y/ in Santa Clara. Dialect mixing and/or inherent change in Santa Clara Tewa has also introduced speaker variation in pronouncing a given item with /y/ or /j/ (Speirs 1966: 31).¹⁶

The voiced continuants [v] and [r] (IPA alveolar flap [ɾ]) are respectively allophones of the voiced stops /b/ and /d/, which regularly occur intervocally. I represent them in the table for a couple of reasons. First, it illustrates a change currently in progress that could result in new phonemes if these sounds become further disassociated with the stops from which they derive. Given the phonemic status of [v] in English—a language in which all Tewa speakers are fluent—and the fact that many

¹⁶ Native Tewa speakers are very well aware of this difference between Santa Clara and other dialects, but otherwise do not seem to treat Santa Clara as particularly separate from the other Tewa Pueblos. Linguists, on the other hand, have perhaps played up the difference a little too much. I would recommend a more thorough study of dialect variation before over- (or under-) representing this feature of Santa Clara Tewa.
instances of [v] appear in non-alternating environments (where no context will lead the sound to be pronounced as [b]), this disassociation may have already begun. It still has a predictable distribution, however. The flap [r] is also non-alternating in many words, but speakers seem still to associate it with /d/. However, there are also a handful of words with dialect variation that for some speakers are pronounced with an intervocalic [d] instead of the expected flap: [bundu ~ budu] donkey (< Sp. burro), [ondo ~ odo] crow, raven, [sendó ~ sedó] old man (< seŋ man + -yó AUGMENTATIVE). While the alternate pronunciation is always a [nd] sequence, this does create the potential for minimal pairs in varieties that show the intervocalic [d] pronunciation.

It should also be noted that the other voiced stop /g/ has a spirantized articulation as [ɣ] when intervocalic as well. In some dialects it even further lenites to [y] before a high front vowel, [w] following a rounded vowel, or to Ø. Speakers do not seem to be as aware of the velar fricative pronunciation—probably owing to its non-occurrence in English (or moreover in English orthography)—thus I have opted not to include it in the above table.

The other predictable allophonic sound in the above table is the velar nasal [ŋ]. This is a sound quite characteristic of Tewa in contrast to the other languages. It occurs only in coda position and is the only nasal that may occur in coda position. The other nasals [m, n, ñ] occur phonetically as codas only by assimilation in place of articulation to a following consonant. When word-final or before a following velar, labiovelar, or laryngeal, a coda nasal is always pronounced as [ŋ]. There is some evidence that the [ŋ] is most directly derived from an original neutralization of coda nasals to [n]. When certain /ɨ/ or vowel-initial suffixes and enclitics are attached to a form ending in [ŋ], an
epenthetic consonant is inserted (replacing the /ŋ/, if there is one). This inserted consonant is always /d/ and the nasal assimilates in place of articulation to it, as in (27)a. Also, some verbs whose stems end in /ŋ/ in certain inflected forms show a /n/ when this consonant ends up an intervocalic onset before the vowel-initial potential suffix -í, as seen in (27)b.

(27) Rio Grande Tewa coda nasal (Martinez 1982; personal field notes)

a. phén-iʔ black-REL > phéndiʔ
   hẫʔi=á that=REL.I=TOP > há̃ʔindá

b. sqŋ drive (PF) > sańí drive (POT)
   kįŋ yelp (PF) > kįńí yelp (POT)

The quality of the inserted epenthetic consonant suggests an alveolar origin for the coda nasal, assuming the consonant results from a coarticulatory transition from the nasal stop to the vowel. The older alveolar quality is thus preserved in this environment while being neutralized to a velar [ŋ] elsewhere17. Beyond this, there is not much evidence for synchronically analyzing [ŋ] as an allophone of /n/ (or of some other segment) and most instances of [ŋ] do not occur in an environment that demonstrates anything more than coarticulatory effects. Therefore, Tewa forms will be given in their phonemic representation with /ŋ/ since this illustrates the actual pronunciation of the coda nasal.

The other three sounds in parentheses are quite marginal. The palatal nasal [ñ] (IPA [ɲ]) is an allophone of /y/ for some speakers when the glide precedes a nasal vowel (28)a. It does not appear to be dialect specific, so far as I can tell, and does not otherwise seem to affect the phonology. The sound [tʰ], an alveolar to post-alveolar stop with a

17 We will see later in the reconstructions that this older alveolar [n] pronunciation that existed at some Proto-Tewa stage was itself a neutralization of multiple consonants that occurred at even earlier stages. One synchronic example showing this historical neutralization is the potential stem of qìŋ do (PF), qìmi do (POT), which retains the original stem-final /m/.
palatalized release, occurs in a couple of lexical items with a shared root. It appears to be a reflex of an earlier [tiʔu] sequence, as seen in (28)b.

(28) Rio Grande Tewa marginal consonants (Speirs 1966; Hoijer and Dozier 1949)

a. ʔq·ʔn̂æ· salt  ~ ʔq·yæ·
     ʔi·ʔn̂æ· smoke  ~ ʔi·yæ· ~ ʔi·yæ·

b. tʸũ·ũ younger sibling  (< tũũ·)
     tʸũ·pẽ· behind  (< tũũ·piye)

Finally, Harrington (1910d: 345) reports that San Ildefonso has the lateral sound [l] in the word for butterfly: polamimi. This is the only instance of a lateral in a native Rio Grande Tewa lexical item (but see the section 6.3 on Arizona Tewa). Some Spanish loanwords also contain a /l/, but such words tend to show other features that demonstrate that they are little assimilated to Tewa phonology and will not be considered here.

6.2.1.2 *Rio Grande Tewa Vowels*

The vowels of Rio Grande Tewa fall into a similar pattern as the vowels of Kiowa, but with even more combinations of nasality and length being marginal within the language. The vowels are shown in Table 6-4.

Table 6-4: Rio Grande Tewa Vowel Inventory

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Front</td>
<td>Back</td>
</tr>
<tr>
<td>High</td>
<td>i, i'</td>
<td>u, u'</td>
</tr>
<tr>
<td>Mid</td>
<td>e, e'</td>
<td>o, o'</td>
</tr>
<tr>
<td>Low</td>
<td>(æ, æ')</td>
<td>a, a'</td>
</tr>
</tbody>
</table>

The vowels as shown are fairly close to their IPA cardinal qualities, although the mid vowels tend to fall between the higher and lower cardinal vowels (i.e. between [e] and [ɛ] and [o] and [ɔ] respectively). The low front vowel ranges from [æ] to [ɛ] and the low
back vowel from [n] to [a] to [a]. Vowels in Tewa are always pronounced as monophthongs, unlike the long mid vowels of Kiowa and Towa, and there is no particular quality (height or backness) difference between long and short vowels or between oral and nasal vowels (although see following paragraph). There are a couple of vowel-initial enclitics and a suffix that do result in phonetic diphthongs when following a vowel, but there are otherwise no tautomorphemic diphthongs in the language. As in Kiowa, vowel nasalization is synchronically neutralized when in the same syllable as a nasal consonant, where all vowels are nasalized. Vowel length is neutralized in a closed syllable, where a vowel is realized as short.

The low front oral vowel /æ/ seems only to occur in a few words where an original /ə/ has been recently denasalized (29)a. Similarly, mid front nasal vowel /ɛ/ occurs rarely and appears to have recently derived by nasalization of an original oral /e/ (29)b. The nasal vowels /æ, æː/ are actually the regular historical nasal counterparts to the oral mid vowels /e, eː/ and high vowels /i, iː/. This is the one instance in the synchronic language where nasalization has caused a significant change in quality, the vowel height lowering to [ɛ] or [æ] (depending on speaker). The high front and mid back nasal vowels /i, iː, o/ are also quite rare and transparently derive from the spread of nasalization from an adjacent nasal consonant or vowel (29)c. In many instances the nasal consonant is lost due to morphophonological processes.

(29) Rio Grande Tewa marginal vowels (Martinez 1982)

a. ču ɣǽ  chickenhawk  ~ ču ɣɛ́
dấ  taste (TR) (PF)  (< dấ̂ ?)

18 Actually, the intervocalic lenition of /g/ to Ø has resulted in diphthongs in Tewa, thus this statement may come to be revised within this dialect of the language, at least.
b. \textit{wê'ge} \textit{together} \quad (<\textit{wêŋ-ge}?)

c. \textit{pîhkhû} \textit{chest} \quad (<\textit{pîŋ-khû}: \textit{heart-bone})
\textit{ʔî'ya'c̞} \textit{smoke} \quad (<\textit{ʔî'ya'c̞})
\textit{phô'do'ñ} \textit{snow (IPF)} \quad (<\textit{phôŋ'-o'ñ: snow-do.IPF})

These vowels are thus only marginally phonemic in the language.

6.2.1.3 \textit{Rio Grande Tewa Tones}

Rio Grande Tewa is akin to Kiowa and Towa (and apparently Taos Northern Tiwa, cf. section 6.4) in possessing an inventory of three contrastive tones: low (unmarked), high (marked with an acute accent [´]), and falling (marked with a circumflex accent [ˆ]). The low tone is realized as a low level or low and slightly falling pitch contour. The high is realized as a high level pitch. The falling tone begins at a high pitch and sharply drops. As in Kiowa, the falling tone appears to be restricted to heavy syllables: those containing a long vowel and those containing a coda consonant (/ŋ/ or /n/). High and low tones are not so constrained and appear on syllables of any type.

Combinatory potential of tones in Rio Grande Tewa is not as constrained as it is in Kiowa, as described in the preceding section. Monosyllabic lexical items may bear any of the three tones (30)a while multisyllabic forms may occur with any of the three tones following any of the other three tones (30)b, although FF sequences are rare and FH sequences mostly occur only in a small number of constructions (30)c. In this regard Rio Grande Tewa seems to be closer to a prototypical “tone language” than are other members of the family.

\footnote{The status of coda glottal stops in the modern language is debatable. They sometimes appear to reflect historical coda consonants. In other cases, this a historical coda is less certain. However, speakers do not appear to have a strong recognition of the sound as a consonant.}
(30) Rio Grande Tewa tones and tone sequences (Speirs 1966; Martinez 1982)

a. \textit{p’o}· \textit{water} \quad \textit{p’ó}· \textit{moon} \quad \textit{p’ô}· \textit{road}
\textit{te}· \textit{cottonwood} \quad \textit{tê}· \textit{need (ST)} \quad \textit{tê}· \textit{tea (< Sp. te)}
\textit{c’ê}· \textit{face; pine} \quad \textit{c’ê}· \textit{yellow (ROOT)}
\textit{ˀɑ}· \textit{clothing} \quad \textit{ˀɑ̂}· \textit{nits}

b. \textit{hada} \textit{liver} \quad \textit{ˀogá} \textit{shell} \quad \textit{sa’yâ}· \textit{grandmother}
\textit{k’úwâ} \textit{sheep, goat} \quad \textit{kʷ’áye} \textit{on top} \quad \textit{kó’ô}· \textit{aunt}
\textit{tú’pha} \textit{stove}

c. \textit{č’û njí} \textit{spill (POT)} \quad \textit{thè njí} \textit{pluck, pick (POT)}
\textit{khê mú}· \textit{FUTURE (< khê-mû· ready.INC-PRG)}
\textit{bîŋk’ô}· \textit{you (P) eat!} \quad (< \textit{bîŋ} = k’ô· 2p.DRFL=eat.IMP)

It is of course quite possible that patterns will emerge upon more in-depth analysis cross-cutting, e.g., grammatical words and phonological words, but for the moment tone appears to be lexically associated with the syllable. This is not to say that there are not tendencies in tone patterns, especially when considering morphological constituency. For example, a LH tone pattern on disyllabic words appears to be most strongly affiliated with (old) compounds. It is quite rare for a stem-suffix sequence to be LH.

6.2.2 Rio Grande Tewa Phonotactics

While tone patterns may not be transparent, segmental phonotactics are pretty straightforward. All of the consonants above may occur in syllable onset position except for the velar nasal [ŋ]. The allophonic voiced continuants [v] and [r]—and the one dialectal instance of /l/—never occur at the beginning of a phonological word, while the voiced stop /g/ is exceedingly rare in this position. Coda consonants are severely limited in Tewa, the only ones that occur are the velar nasal /ŋ/ and the two laryngeals /ˀ, h/. Of these /h/ does not occur word-finally and it is questionable whether either of the
laryngeals should truly be considered coda *consonants* in the modern language. Aside from the issues mentioned in footnote 19, the coda laryngeals occur word-internally as a regular phonological alternation described below (31)a. If these two sounds are discounted as codas, then Tewa can be said to have only a single possible phonemic coda: /ŋ/ (31)b.

(31) Rio Grande Tewa coda consonants (Martinez 1982)

| a. | hihićq̇ | feel happy (ST) | kʊ́ | buffalo |
|    | ?ahkoŋ | desert         | mʊ́ | bring (IPF) |
|    | cî'p'o'̄ | tears (< cî'-p'o'̄ eye-water) | p'î̄ | red (< p'i-ʔi red- REL) |

| b. | mʊŋ | hand         | nq'imbí | our (< nq'iŋ-bí we-POSS) |
|    | p'iŋ | mountain     | ʔqnto | shoe (< ʔq̄ŋ-to foot-wear) |

As noted, vowels are neutralized for nasality in a syllable closed by a coda nasal or with a nasal onset: the vowel will always be phonetically nasalized. Vowel length is neutralized whenever any of the three above codas (or coda-like elements) occur. Falling tone in a closed syllable appears to be restricted to occurring with /ŋ/ and /p/, never with /h/ (see phonological alternations below). Distribution of vowel length and falling tone is seen in (32).

(32) Rio Grande Tewa vowel length and closed syllables (Martinez 1982)

| sæ̂hsu̲ | hot chile smell | (< sæ̂-sụ capsaicin taste-smell) |
| pû'p'â-p'é | strawberry | (<pû'-p'â'-p'é root-cracked-berry) |
| šuŋ | fly (PF) | (> šuŋ ní fly (POT)) |
| ʔûŋ | blood |
| ʔûŋ | foot |
| mû̄́ | see (PF) |
| kê̄́ | get (S/D) (PF) |
| p'ôhkế | thick skull | (< p'ôŋ-kê head-hard) |
In terms of word-level syllable patterns, Rio Grande Tewa seems to be a little less constrained than Kiowa as described in the previous section. Lexical stems of a light CV syllable form (with a short vowel) are not many, but they do occur (33)a. Otherwise the majority of monosyllabic words are of the form CVˑ (33)b or constitute closed syllables of the forms CVŋ, or CV’ (33)c.

(33)  Rio Grande Tewa monosyllabic word forms (Speirs 1966; Martinez 1982)

- a. sú arrow pʰó hair
   ?á bow sí six

- b. teˑ tree, cottonwood tʰaˑ day
   puˑ cottontail rabbit piˑ exit (PF)

- c. kʷɑŋ rain piʔ exit (IPF)
   wîŋ be standing (ST) ?oʔ do (IPF)

There are also three bound morphemes that appear to be of the form V(ŋ), i.e. lacking an onset: =á topic, =ɑŋ focus20, and -í potential. When these follow a vowel, they are realized as onsetless syllables with only a hiatus at most21 delineating the syllable boundaries. Often, the vowel sequence is simply realized as a phonetic diphthong. The words in (34) illustrate such forms.

(34)  Rio Grande Tewa onsetless syllables (Martinez 1982; personal field notes)

- k'oˑí eat (POT) (< k'oˑ-i eat-POT) cf. k'oˑ-i eat.PF-REL
- paí make (POT) (< pa(%)-i make-POT)
- kʰiˑú woman (TOP) (< kʰiˑ-ú woman-TOP)
- céɑŋ dog (FOC) (< cé-ɑŋ dog-FOC)

When following a consonant, an epenthetic consonant is inserted as onset to these morphemes. This alternation will be illustrated with phonological alternations below.

---

20 This has a lexically specified allomorph—or there is a related morpheme—that attaches only to interrogative pronouns and has low tone: =ɑŋ.
21 Following high and mid vowels, a very slight glide may be heard before these vowel-initial morphemes.
In disyllabic words, CVCV is probably the most common form (35)a, but other patterns also do freely occur. The laryngealization alternation described below tends to shorten the first syllable in a compound, leading to CVhCV(·/ŋ/) and CṾCV(·/ŋ/) word forms (35)b, but there are many compounds to which this alternation does not apply (or applies only optionally), as in (35)c.

(35) Rio Grande Tewa disyllabic forms (Martinez 1982)
   a. xʷátíri hit (PF) nqwa field
   b. pʰohpʰe· squash bug kʷqʷnqʷ rain (PF)
      súhči· arrowhead pʰ'p'o· baptism
   c. p'o·kʷîŋ lake ki'tq̂ŋ sight

While phonemically there is no restriction on word-final long vowels, it does seem that vowel-length may be neutralized in utterance-final position\(^{22}\). That is, there are no strong phonetic cues to distinguish vowel-length in such a final position (e.g. in individual word elicitation) and it is only when phonetic material follows a CV(·) form within a prosodic unit that vowel length can be reliably determined, as shown in (36).

(36) RG Tewa vowel length neutralization (Speirs 1974: 45; personal field notes)
   a. tǎʔfeán nɑmu(·) b. tǎʔfeán nɑmu·wæŋ
      mark-stick=FOC 3S.ITR=be.ST mark-stick=FOC 3S.ITR=be.ST=AOR
      mark-stick=FOC 3S.ITR=be.ST mark-stick=FOC 3S.ITR=be.ST=AOR
      It is a pencil. It was a pencil

The final vowel of the sentence in (36)a may be pronounced variably fairly short or fairly long and would be ambiguous for vowel length. Only if phonological material follows the vowel can the length be reliably determined, as in (36)b.

\(^{22}\) This does require further study. Also, it may depend on other factors such as tone, stress, and lexical specificity.
6.2.3 Rio Grande Tewa Phonological Alternations

Compared to Kiowa and Towa, Rio Grande Tewa has relatively few regular phonological or morphophonological alternations. There are a handful worth noting here, however. The general allophony of individual segments has already been noted above: voiced stops lenite and spirantize intervocally and nasal stops assimilate in place of articulation to a following consonant. Other consonants are relatively invariant. There is also no regular phonological alternation involving vowels, aside from variation in length and nasality relative to syllable structure, as noted above.

6.2.3.1 Rio Grande Tewa Tone Alternations

Tone appears to be invariant at the phonological level, or at least involves far fewer alternations than are found in Kiowa and Towa. The one exception is an assimilatory process that applies only to a small set of suffixes. The locative suffix -ge (37)b and the various suffixes of the form -di ABLATIVE, INSTRUMENTAL, AGENTIVE, SUBORDINATOR (37)a are effectively unspecified for tone synchronically in the language. The tone they bear is dependent on the preceding syllable. If the syllable has high tone, the suffix will also bear high tone. If the syllable has low or falling tone, so too will the suffix have low tone.

(37) Rio Grande Tewa tone assimilation (Speirs 1966; personal field notes)

a. \( \text{di·ri} \quad \text{chick} \text{(AGT)} \quad (< \text{di·di} \text{chick-AGT})

\[\text{sendi} \quad \text{man} \text{(AGT)} \quad (< \text{seŋ·di} \text{man-AGT})

\[\text{ˀɑ̨̂ ndi} \quad \text{with the foot} \quad (< \text{ˀɑ̨̂ ŋ·di \text{foot-INSTR}})

\[\text{kw̃iyóði} \quad \text{old woman} \text{(AGT)} \quad (< \text{kw̃iyó·di \text{old.woman-AGT}})

\[\text{kw̃̄ndi} \quad \text{jackrabbit} \text{(AGT)} \quad (< \text{kw̃̄ń·di \text{jackrabbit-AGT}})\]
b. **naŋge**  floor  (< **naŋ-ge** earth-LOC)

**néŋgé**  around here  (< **né-ge** here-LOC)

**ʔówíŋge**  pueblo, village  (< **ʔówíŋ-ge** village-LOC)

There are some other predictable patterns in tone, but these are morphological in nature and will not be covered here.

6.2.3.2 **Rio Grande Tewa Epenthetic Consonants**

One phonological alternation alluded to above is the insertion of epenthetic consonants in certain morphophonological environments. There is a small number of morphemes that are glottal stop-initial or onsetless when word-initial or following a vowel, listed in (38).

(38) Rio Grande Tewa morphemes that take epenthetic /d/ (personal field notes)

<table>
<thead>
<tr>
<th>Morphemes</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ʔiŋ - ʔiŋ</td>
<td>RELATIVIZER =ʔiye LOCATIVE</td>
</tr>
<tr>
<td>=á</td>
<td>TOPIC =ʔiwe LOCATIVE</td>
</tr>
<tr>
<td>= sân ~ = ʔiŋ</td>
<td>FOCUS =ʔiheˑri when</td>
</tr>
<tr>
<td>ʔŋ</td>
<td>do (PF) (ʔo³ IPF, ʔqmi POT) =ʔiðeri about</td>
</tr>
</tbody>
</table>

When these elements are bound to a morpheme ending in a coda /ŋ/—or ending in /ʔ/ where there is historically a coda /ŋ/—then an epenthetic onset /d/ is inserted, replacing the initial glottal stop of the appended element (if there is one), as illustrated in (39).

(39) Rio Grande Tewa epenthetic /d/ (personal field notes)

<table>
<thead>
<tr>
<th>Morphemes</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>phéndiʔ</td>
<td>black (BAS) (&lt; phéŋ-ʔiʔ black-REL)</td>
</tr>
<tr>
<td>nq’indá</td>
<td>we (TOP) (&lt; nq’iŋ=á 1P=TOP)</td>
</tr>
<tr>
<td>nqndiweri</td>
<td>from the ground (&lt; nqŋ=iwe-di earth=LOC-ABL)</td>
</tr>
</tbody>
</table>

Another phonological alternation regularly follows from this epenthesis. When the enclitic or suffixal element taking the epenthetic /d/ contains a nasal vowel or consonant,
the epenthetic /d/ will also nasalize to [n], as in (40). (Remember that the /d/ is being inserted after a nasal sound as well.)

(40) Rio Grande Tewa epenthetic /d/ with nasal assimilation

<table>
<thead>
<tr>
<th>Word</th>
<th>Meaning</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>phénniŋ</td>
<td>black (i)</td>
<td>(&lt; phéŋ-ŋiŋ black-REL.1)</td>
</tr>
<tr>
<td>nq’innqŋ</td>
<td>we (FOC)</td>
<td>(&lt; nq’iŋ=ŋiŋ IP=FOC)</td>
</tr>
<tr>
<td>ḡnqŋŋŋ</td>
<td>wrap (PF)</td>
<td>(&lt;ḡŋ-ŋŋ covered-do.IPF )</td>
</tr>
<tr>
<td>cf. ḡndo’</td>
<td>wrap (IPF)</td>
<td>(&lt;ḡŋ̥-nŋ covered-do.IPF)</td>
</tr>
</tbody>
</table>

Such nasalization of /d/ also applies optionally to those pronominal proclitics that end in /ŋ/. Even though a proclitic-initial /d/ will regularly become a flap [r] when following a vowel, those proclitics that end in /ŋ/ and begin with /d/ may alternatively realize that /d/ as [n], as shown in (41).

(41) Tewa pronominal /d/ nasal assimilation (personal field notes)

<table>
<thead>
<tr>
<th>Word</th>
<th>Meaning</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>nɑ̨́ˑnîŋ</td>
<td>1S=TOP X&gt;&gt;1S=know.ST=NEG</td>
<td>I don't know.</td>
</tr>
</tbody>
</table>

I have yet to determine when the nasalized articulation occurs as opposed to the flap articulation. They may just be free variants in the modern language. This nasalization does not appear to apply to stem-initial instances of /d/.

Aside from the regularly inserted /d/ above, the student of Tewa must also deal with a handful of other inserted consonants that are morphologically more restricted. For instance the interrogative focus marker =qŋ, normally lacking an onset, takes a glottal stop onset when following the verbal negative enclitic =pí, the sequence realized as =píqŋ, shown in (42)a. When this enclitic, or at least the non-interrogative focus clitic =qŋ, follows the restrictive enclitic =dq’ only, however, an onset consonant /m/ is inserted, resulting in =dq’mqŋ and =dq’máŋ respectively, as in (42)b.
(42) Rio Grande Tewa other epenthetic consonants (Speirs 1966: 97, 142)

a. **tiwínəmámpqŋ?**
   
ti=wi=nq=maŋ=pí=qŋ
   
Q=NEG=3S.ITR=go.IPF=NEG=Q.FOC
   
Isn't s/he going?

b. **púwərəq'mañ**  i'óŋ
   
púwə=dq=áŋ i={oŋ
   
see.INC=only=FOC  3S.RFL=do.IPF
   
S/he's just looking indeed.

Similarly, the onsetless potential suffix -í has variable behavior. When attached to a verb stem that ends in /ŋ/, an epenthetic /d/ is never inserted. Instead, the nasal consonant is reanalyzed as a syllable onset to the potential vowel (and the nasal is regularly changed to /n/). Most vowel-final verb stems simply attach the -í directly to the vowel, the sequence pronounced either as a diphthong or with a light glide [j] before the potential suffix. Such potential forms are illustrated in (43).

(43) Rio Grande Tewa potential suffix (Martinez 1982)

<table>
<thead>
<tr>
<th>Original Form</th>
<th>Potential Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>sqŋ drive (PF)</td>
<td>sa'ñí drive (POT) (&lt; sqŋ-í)</td>
</tr>
<tr>
<td>ša' arise (PF)</td>
<td>sa'í arise (POT) (&lt; ša'-í)</td>
</tr>
</tbody>
</table>

However, a number of verbs which otherwise end in a vowel (or glottal /ʔ/) will insert a /n/ before the potential suffix, as given in (44).

(44) Rio Grande Tewa /n/ insertion in the potential (Martinez 1982)

<table>
<thead>
<tr>
<th>Original Form</th>
<th>Potential Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>č'ú' spil (PF)</td>
<td>č'ú'ni spil (POT)</td>
</tr>
<tr>
<td>p'égi throw away (S/D) (PF)</td>
<td>p'égi spil (POT)</td>
</tr>
<tr>
<td>mú' see (PF)</td>
<td>mú'ní see (POT)</td>
</tr>
</tbody>
</table>

These inserted nasal stops will be partly addressed in chapter 10. A number of similar insertions apply to derivations of lexical stems, as seen in (45) below.
Such instances are simply idiosyncratic in synchronic perspective in Rio Grande Tewa.

Comparative study, however, reveals that the inserted consonant is historically a stem-final consonant that has otherwise been lost due to the dissolution of most coda consonants in the language.

### 6.2.3.3 Rio Grande Tewa Contraction

Some of the set of elements that take the epenthetic /d/ above also participate in another alternation in different contexts. When two vowels are brought together in a word, there is sometimes a contraction. When the relativizer/attributivizer \(=^i\) is attached to a stem (or suffix) ending in short /i/, the two identical vowels tend to be pronounced as a single syllable \(i^i\). This is particularly notable when the stem vowel bears high tone since the resulting contraction is pronounced with a falling tone \(i^i\). This appears to apply primarily to forms with the possessive suffix -bí and to a small number of lexical items, as exemplified in (46).

(46) Rio Grande Tewa contraction of /i/’s (personal field notes)

\[
\begin{align*}
p^i\hat{\imath} & \quad \text{red (BAS)} < \quad p^i(\cdot)^i \quad \text{red-REL} \\
nqvi\hat{\imath} & \quad \text{mine} < \quad nqvi^{-i} \quad \text{my-REL}
\end{align*}
\]

Similarly, when the topic marker \(~\hat{\imath}\), focus marker \(=\hat{\imath}\), or potential -i are attached to a vowel of the same quality, the resulting sequence may be contracted together into an undifferentiated vowel. With the topic and focus markers, this contraction seems to be limited to the first person independent pronoun \(nq\), which becomes \(nq\) with the topic
marker and nû with the focus marker. The topic marker may not be distinguishable when attached to a word that ends in a high tone /âˑ/, although the combination may be realized as an extra-long vowel. When attached to a low tone /aˑ/ or falling tone /âˑ/, the topic marker can be distinguished by a final rising tone on the long syllable. There is one attested stem ending in /iˑ/ where the addition of the potential suffix -í causes the stem vowel to raise to high tone, but otherwise the potential following a vowel /iˑ/ can only be distinguished by the rise in tone (represented here with a hachek ['] over the vowel). This vowel fusion is seen in (47).

(47) Rio Grande Tewa contraction with onsetless suffixes

<table>
<thead>
<tr>
<th>Word</th>
<th>Description</th>
<th>Contraction</th>
<th>Final Vowel</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>phû`</td>
<td>fire (TOP)</td>
<td>phû-á</td>
<td></td>
<td>fire-TOP</td>
</tr>
<tr>
<td>k'emû`</td>
<td>friend (TOP)</td>
<td>k'emq=û</td>
<td></td>
<td>friend=TOP</td>
</tr>
<tr>
<td>pû`</td>
<td>exit (POT)</td>
<td>pû'-í</td>
<td></td>
<td>exit-POT</td>
</tr>
<tr>
<td>phû`</td>
<td>smoke (POT)</td>
<td>phû'-í</td>
<td></td>
<td>smoke-POT</td>
</tr>
</tbody>
</table>

Even more morphologically restricted than the above, there is a small set of grammaticalized suffixes and enclitics that show a vowel contraction with the onsetless topic and focus markers. These suffixes and enclitics are listed in (48)

(48) Rio Grande Tewa contracting morphemes (personal field notes)

- di  AGENT/INSTRUMENTAL/ABLATIVE  - ge  LOCATIVE
=árí  COMITATIVE  =îwe  LOCATIVE

When followed by =û TOPIC or =û FOCUS, the final vowel of the above elements is replaced by the vowel of the information marking enclitics, as listed in (49). The forms with the topic marker are listed on the left and those with the focus marker are listed on the right.
(49) Rio Grande Tewa contracted forms

-ďá -gá -ďâ -gâ

=árá =áiwá =áráŋ =áiwâŋ

herá herâŋ

These fused forms are regular occurring, but they are apparently not obligatory. I have heard the enclitic simply appended to the grammatical element’s vowel without any contraction applying, e.g. phéríá with the stick (TOP) rather than the expected phérá (phé-dí=á stick-INSTR=TOP). There does not appear to be any formal or functional motivation for the absence of contraction that I’ve found, so it may just be effectively free variation.

Speirs (1966) also describes another set of contractions applying between the prefixal portion wí- of the verbal negation circumfixal construction wí-...=pí and the following pronominal proclitics. The contractions as he describes them are shown in (50) below.

(50) San Juan Tewa negation contractions (Speirs 1966: 102)

wíó= > wó= 1S.ITR
wí¿= > wú= 2S.ITR
wí¿= > wú= X=>2S
wí¿= > wú= X=>3S
wí¿= > wú= 1D.RFL
wí¿= > wú= 1P.RFL

wíúví= > wúví= 2P.RFL
wíáŋ= > wáŋ= 1D>3
wíê= > wê= 1P>3
wíó= > wó= 3>3S
wíó= > wó= 3>3D / 2D>3
wíó= > wó= 3>3P / 2P>3

---

23 Note that some forms with -ďá are morphologically ambiguous, e.g. sendá man. The -ďá may simply represent the postconsonantal allomorph of the topic marker with the epenthesis of /d/, i.e. sen=á, or may represent the contracted form described here, i.e. sen-dí=á. One has to simply evaluate the overall morphosyntactic construction to disambiguate the form.
The /w/ of the negative prefix is retained as is some reflex of the prefix’s high tone. The vowel of the proclitic is retained over that of the negative prefix. Such contractions may be dialectally restricted, the ones Speirs describes applying in the San Juan dialect.

### 6.2.3.4 Rio Grande Tewa Laryngealization

The last major and productive (morpho)phonological alternation to cover—also mentioned above—is the laryngealization that occurs in compound constructions. When two lexical stems are compounded together, the left member often changes its form slightly and a coarticulatory laryngeal appears before the initial consonant of the second stem. If that initial consonant of the second stem is an ejective, then the inserted laryngeal is a stop [ʔ], effectively preglottalizing the consonant. If the consonant is a non-ejective voiceless obstruent (including aspirated and unaspirated stops, affricates, and fricatives) then the inserted laryngeal is [h], effectively preaspirating the consonant. These processes can be seen in the compound forms in (51).

(51) Rio Grande Tewa laryngealization (Martínez 1982; personal field notes)

<table>
<thead>
<tr>
<th>Stem</th>
<th>Meaning</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>metal</td>
<td>metal; Mexican</td>
<td>&lt; kʷ-ã-k’u &gt; oak/hard-rock</td>
</tr>
<tr>
<td>be asleep</td>
<td>(S/D) (ST)</td>
<td>&lt; yô-k’ó &gt; sleep-be.lying. S/D.ST</td>
</tr>
<tr>
<td>kick</td>
<td>(PF)</td>
<td>&lt; q’c’ú &gt; with.foot-strike</td>
</tr>
<tr>
<td>kick</td>
<td>(INC)</td>
<td>~ qhcarĩ</td>
</tr>
<tr>
<td>arrowhead</td>
<td></td>
<td>&lt; sú-ci &gt; arrow-obsidian</td>
</tr>
<tr>
<td>arm joint</td>
<td></td>
<td>&lt; khó-xwê &gt; arm-joint</td>
</tr>
<tr>
<td>hoe</td>
<td>(PF)</td>
<td>&lt; nhp &lt; earth-make.PF</td>
</tr>
</tbody>
</table>

Note the changes that affect the first stem when it ends in a heavy syllable: a long vowel shortens before the laryngealization while a final /ŋ/ is elided (or becomes the
laryngealization). A falling tone on this syllable will be realized as a high tone, but low and high tones remain the same.

The laryngealization above, although occurring frequently, is not completely predictable. There are many compounds where the first stem retains its long vowel or closed syllable and no laryngealization appears. Also, there are some compounds where a long vowel may shorten, but where again there is no laryngealization as expected, as in (52).

(52) Rio Grande Tewa no laryngealization (Martinez 1982; personal field notes)

\[
\begin{align*}
p'ohs\text{uwa}eg & \sim p'o\text{ suwa}eg & \text{Pojoaque} & \text{(< p'o-suwa-ge water-drink.INC-LOC)} \\
p'o\text{k\text{"i}ng} & \quad \text{lake} & \text{(< p'o-k\text{"i}ng water-??)} \\
p\text{ute} & \quad \text{saddle} & \text{(< p\text{"u}-te buttocks-structure)}
\end{align*}
\]

Such exceptions probably reflect a mix of lexicalization processes (which can include phonological reduction or non-application of otherwise productive processes) and of different types of compounds which show different degrees of phonological integration. It is an area of the phonology to be explored further, but should have little impact on the current study.

6.2.3.5 Rio Grande Tewa Sound Symbolism

One other phonological alternation, a non-productive one, should also be mentioned here. Harrington (1910e, 1916) noted that a relatively large minority of stems in Tewa demonstrate sound symbolic pairings. A form with the vowel /e, i/ denotes a smaller entity while a comparable form with the vowel /u, o/ denotes a larger instance of the same entity. Examples of this are given in (53).
This kind of sound symbolism is not found in any of the other Kiowa-Tanoan languages, nor has it been investigated in Tewa since Harrington’s studies. It is certainly not productive and I have not noted speakers expressing overt awareness of the relationship between such pairs, although that might be idiosyncratic to the particular speakers I’ve worked with or the context in which I’ve elicited data. One thing that has not been particularly noted about such sound symbolic pairs is the relationship between the vowels that alternate and the most regular Kiowa-Tanoan correspondence set involving the Tewa vowel /e/. This discussion will be taken up in chapter 0 below.

### 6.2.3.6 Rio Grande Tewa Verb Stem-Initial Consonant Ablaut

With respect to the verb stem-initial consonant ablaut, Rio Grande Tewa finds itself at the opposite end of the scale as Kiowa above, being at its highest productivity and frequency of occurrence. It also applies to a greater number of segments in Rio Grande Tewa than in any other Kiowa-Tanoan language. The alternations appear in (54).

(54) Rio Grande Tewa verb stem-initial consonant ablaut (Speirs 1966; Martinez 1982)

<table>
<thead>
<tr>
<th>Basic form</th>
<th>~</th>
<th>Ablaut form</th>
</tr>
</thead>
<tbody>
<tr>
<td>p'</td>
<td>~</td>
<td>p</td>
</tr>
<tr>
<td>t'</td>
<td>~</td>
<td>t</td>
</tr>
<tr>
<td>k'</td>
<td>~</td>
<td>k</td>
</tr>
<tr>
<td>kw'</td>
<td>~</td>
<td>kw</td>
</tr>
<tr>
<td>c'</td>
<td>~</td>
<td>c</td>
</tr>
<tr>
<td>č'</td>
<td>~</td>
<td>č</td>
</tr>
<tr>
<td>m</td>
<td>~</td>
<td>p</td>
</tr>
<tr>
<td>n</td>
<td>~</td>
<td>t</td>
</tr>
<tr>
<td>h</td>
<td>~</td>
<td>k</td>
</tr>
<tr>
<td>h</td>
<td>~</td>
<td>k (¬ x)</td>
</tr>
<tr>
<td>w</td>
<td>~</td>
<td>k^w</td>
</tr>
<tr>
<td>y/j</td>
<td>~</td>
<td>c</td>
</tr>
</tbody>
</table>
Ejective obstruents alternate with their plain voiceless counterparts, some nasal stops alternate with their plain voiceless counterparts, laryngeals alternate with velar stops, and each of the glides alternate with some voiceless obstruent. In all cases the ablauted consonant is voiceless, just as in Kiowa (and all of the languages). There also seems to be a marginal alternation between /y/ in the basic form and /š/ in the ablaut form in some dialects. Based on cognates, this does appear to descend from an ablaut alternation, although it is not productive across all Rio Grande Tewa dialects. For example, Tewa has dance (PF) and dance (N), but San Juan Tewa has šáre dance (PF) and šare dance (N), showing that it is not generalizable across Rio Grande Tewa.

Examples of the ablaut alternation appear in (55).


a. šá̱h-ży̱g̱ám̱q̱
i=ú̱ḵ-č̱=mq̱
3S>3=bow-trade-dispense.P.INC=bring.PF
He brought bows to sell.

d. ̀dæ̱ŋx̱ó̱̱q̱?
dæ̱ŋ= xo̱-y̱q̱’
3D.RFL=arm-grapple.PF
Marriage They (du.) got married.

e. nq̱å̀v̱e̱ṉ
3S.ITR=be.broken.ST
It is broken.

The sentences in (55)a-b show an alternation between an ejective and plain stop in a verb compounding construction. (55)c-d contrast the palatal glide /y/ with its affricate ablaut counterpart in a nominalization construction. The stativization use of ablaut is seen in
(55)e-f, illustrating the alternation between /h/ and the velar /kʰ ~ x/. Finally, (55)g-h shows verb compounding again, but with the /n ~ k/ ablaut alternation. While not every verb stem that begins with the relevant segments will undergo the process, ablaut is fairly well predictable in its occurrence across the appropriate morphosyntactic constructions in Rio Grande Tewa.

6.3 Arizona Tewa

Despite all of the publications on Arizona Tewa, it is an unfortunate shortcoming in the literature that the phonology is poorly—or, moreover, inconsistently—described and represented. Not yet having had the opportunity to work with Arizona Tewa speakers myself and the sources being what they are, this section must at present remain less detailed than the overviews of the other languages. That being said, it can be recognized that Arizona Tewa is quite similar in its phonology to Rio Grande Tewa, but does differ in several respects (and these differences will prove invaluable to reconstruction in later chapters). This description is primarily based on Yegerlehner (1957), Kroskrity (1977, 1993b), sporadic comments through the literature, and my own observations based on examples throughout this literature.

6.3.1 Arizona Tewa Segmental Inventory

6.3.1.1 Arizona Tewa Consonants

Of the consonant inventory in the language, we can be fairly certain. Here we already observe some key differences from Rio Grande Tewa above. The consonants are in Table 6-5.
### Table 6-5: Arizona Tewa Consonant Inventory

<table>
<thead>
<tr>
<th></th>
<th>Labial</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
<th>Labiovelar</th>
<th>Laryngeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiceless Stops</td>
<td>p</td>
<td>t</td>
<td>k⁺</td>
<td>k⁺</td>
<td>kʷ</td>
<td>?</td>
</tr>
<tr>
<td>Voiced Stops</td>
<td>b</td>
<td>d</td>
<td>g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirated Stops</td>
<td>pʰ</td>
<td>tʰ</td>
<td>kʰ⁺</td>
<td>kʰ</td>
<td>kʰʷ⁺</td>
<td></td>
</tr>
<tr>
<td>Ejective Stops</td>
<td>p’</td>
<td>t’</td>
<td>k⁺’</td>
<td>k’</td>
<td>kʷ’</td>
<td></td>
</tr>
<tr>
<td>Voiceless Affricates</td>
<td>c</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ejective Affricates</td>
<td>c’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiceless Fricatives</td>
<td>s</td>
<td></td>
<td></td>
<td></td>
<td>h</td>
<td></td>
</tr>
<tr>
<td>Nasal Stops</td>
<td>m</td>
<td>n</td>
<td>(ŋ)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiced Approximants</td>
<td>l</td>
<td>y</td>
<td>w</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiceless Approximants</td>
<td></td>
<td></td>
<td>h⁺</td>
<td>h⁺⁷</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The aspirated stops in Arizona Tewa are always pronounced as stops, never as fricatives. The same can be said of the voiced stops, which are not reported to receive a continuant pronunciation intervocally\(^2\). It can also be seen that the language has a series of palatalized velar stops absent in its New Mexican sister dialects. Correspondingly, Arizona Tewa lacks the palato-alveolar fricative and affricates found in Rio Grande Tewa. There are also two other consonants not found in the preceding section, labeled here as voiceless approximants. It is not clear from the literature what the actual realization of these consonants are, whether as actual voiceless glides or as laryngeal fricatives with off-glides. The segments do not appear to be all that frequent in the language, but they will play a role in the discussion of both vowels and stem-initial consonants in chapters 0 and 0 respectively.

Two other features of note are to be seen in the above table, one showing a similarity to Rio Grande Tewa, one showing an important difference. As in its sister language, the velar nasal /ŋ/ occurs only in coda position, neutralizing historically distinct

\(^2\) The few audio files of the language that I have heard do actually suggest that some lenition intervocally, even if not as robustly developed as in Rio Grande Tewa.
codas. Its distribution is basically the same as its cognate in Rio Grande Tewa. The difference to note is the status of the lateral approximant /l/, which is a full and frequently occurring phoneme of Arizona Tewa. It occurs only intervocally, but cannot be posited as an allophone of any other sound in the modern language.

6.3.1.2 Arizona Tewa Vowels

Table 6-6 presents the vowel inventory as presently known.

Table 6-6: Arizona Tewa Vowel Inventory

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Front</td>
<td>Back</td>
</tr>
<tr>
<td>High</td>
<td>i, iˑ</td>
<td>u, uˑ</td>
</tr>
<tr>
<td>Mid</td>
<td>e, eˑ</td>
<td>o, oˑ</td>
</tr>
<tr>
<td>Low</td>
<td>(ɛ, ɛˑ)</td>
<td>a, aˑ</td>
</tr>
</tbody>
</table>

The vowels are one of the major features of the language that are most poorly and inconsistently represented in the literature. Thus, while a basic inventory may be given—the general vowel qualities are known and the fact of vowel length and nasalization contrasts—the finer points are unclear. Arizona Tewa does seem to have the same gaps or marginal status of vowels as does Rio Grande Tewa, but I cannot be certain of the full occurrences (or lack thereof) of such marginal vowels. The lower front vowel is almost always represented in the literature with the epsilon symbol “ɛ” rather than the æsc “æ” used for Rio Grande Tewa, but it is not clear to me that they do actually represent different vowel qualities. So far as I can tell, the vowel in both languages is realized in the range of [ɛ] to [æ], but again the exact respective qualities require further study. Also, there are many instances of /ɛ/ found in examples in the literature, but these tend to be alternatively represented as /ɛ/ when the same example is given in another piece. I would
guess that effectively all instances of “ę” should be analyzed as /ɛ/, which is actually the nasal correlate to /e/, but that there is no contrast between /ɛ/ and /ɛ/. Another qualitative difference reported in Yegerlehner (1957) and audible in the available recordings is that the mid back rounded vowel /o/ is lower than its Rio Grande Tewa counterpart. Whereas Rio Grande /o/ phonetically tends to be in the upper [ɔ] to lower [o] range, Arizona Tewa /o/ tends to be in the lower [ɔ] to upper [ɒ] range. Indeed for the purposes of comparison in this diachronic study, it might be better to represent the vowel as /ɔ/. I will maintain the “o” notation, however, for lack of data.

6.3.1.3 Arizona Tewa Tones

The inventory and status of tone in Arizona Tewa is even more uncertain than that of vowels. Both Yegerlehner (1957, 1959a) and Kroskrity (1977, 1993b, 2005) report two tones in the language: high (marked here with an acute accent) and low (unmarked here). Kroskrity (1977: 31) suggests that falling tone is an allophone of high when it occurs before a coda sonorant. Again, however, the inconsistent transcription seen in publications does not instill complete confidence in these analyses. Certain correspondences between Arizona and Rio Grande Tewa do suggest the two-tone analysis is indeed accurate, but such instances do not entail that a falling tone does not actually occur phonemically at all in Arizona Tewa.

6.3.2 Arizona Tewa Phonotactics

The phonotactics of Arizona Tewa are intriguingly different from the phonotactics of Rio Grande Tewa without wandering too far afield, although with uncertainty on various points. As in the above described languages, vowel length is neutralized in closed
syllables and vowel nasalization is neutralized in the same syllable as a nasal consonant. All of the above consonants may occur in syllable onset position with the exception of /ŋ/, which is the only nasal consonant which may occur in coda position (although it does assimilate in place of articulation to a following consonant). The consonant /l/ does not occur word-initially or initially in any morpheme, appearing only intervocally.

Possible coda consonants are /ŋ, y, w, ?, h/, a greater number than occur in Rio Grande Tewa. The full distribution and status of the laryngeal consonants in coda position are uncertain. Consider especially that syllables of the form CVY? are attested, where Y represents the glides /y, w/, as in (56).

(56) Arizona Tewa coda consonants (Yegerlehner 1957; Kroskrity 1993)

\[
\begin{align*}
\text{kʰaw} & \quad \text{song} & \quad \text{tay} & \quad \text{know} \\
\text{tʰaw} & \quad \text{day} & \quad \text{ciká} & \quad \text{ask} \\
\text{tuwy} & \quad \text{lift up} & \quad \text{ʔtuy} & \quad \text{walk}
\end{align*}
\]

Some words and morphemes are represented in the literature with a final /h/, but the status of this as a word-final consonant I view with some reservation for the present. Word- and morpheme-final /ʔ/ appears to be less common than it is in Rio Grande Tewa, but does occur. Syllable structure is otherwise much like that in Rio Grande Tewa, with CV, CV’, and CVŋ being the most common syllable forms.

Monomorphemic word-forms also show some important differences from Rio Grande Tewa on top of the basic phonotactics mentioned above. For one, there does appear to be a greater number of CV words containing a short vowel, at least according to representation in the literature. This is another area where I do not feel fully confident in the available transcriptions and analyses, but there is also no reason not to grant the possibility that these representations are indeed accurate. More confidently, however, we
can observe that there is a greater proportion of monomorphemic disyllabic forms in the
language. Importantly, these are almost all of the shape CVlV, accounting for many of
the instances of /l/ in the language. Usually, but not always, the two vowels in such words
are of the same quality, as illustrated in (57).

(57) Arizona Tewa intervocalic /l/
    c'úla  cut      ṭelú  run
    wo lo  medicine  kʷó·li  fly
    yú·la  fight
    hí·li  language

These intervocalic /l/’s will be important for keeping the Tewa branch in the discussion
of stem-final consonants in chapter 10 and are critical to reconstructing the ancestral
forms.

6.3.3 Arizona Tewa Phonological Alternations

With respect to phonological and morphophonological alternations, I have little
data available. The tone assimilation of suffixes such as -di ABLATIVE, INSTRUMENTAL,
AGENTIVE, SUBORDINATOR and -ge LOCATIVE and the contraction between such suffixes and
the topic and focus markers, =á and =qí respectively, appear to apply much as they do in
Rio Grande Tewa described above. These information marking enclitics otherwise tend to
take a glide onset [y] or [w] when following a high vowel, but I am not sure how strongly
these are pronounced.

Interestingly, the /d/ epenthesis described for Rio Grande Tewa appears not to
apply in Arizona Tewa. The relativizers ʔíp and ʔíŋ, forms of the auxiliary verb ʔíŋ do,
and the cognates of the postpositions mentioned above appear always to be pronounced

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with an initial glottal stop, even when following a coda consonant of any quality, as in (58).

(58) Arizona Tewa lack of epenthetic /d/

\[
\begin{align*}
\text{pʰéŋ’i} & \quad \text{black} \quad (< \text{pʰéŋ-’i black-REL}) \\
\text{c’éy’i} & \quad \text{yellow} \quad (< \text{c’éy-’i yellow-REL}) \\
\text{caŋ’i} & \quad \text{new} \quad (< \text{caŋ-’i new-REL})
\end{align*}
\]

I have yet to find any instances of the information markers following a coda consonant to determine their behavior. The similarly pervasive laryngealization process of Rio Grande Tewa also appears not to apply in Arizona Tewa, although it is possible that it does but has simply not been transcribed due to its relative regularity. If the limited sound symbolic alternations found in Rio Grande Tewa also occur in Arizona Tewa, they are not attested in the literature. I have only seen those reflexes with the /e/ vowel. Also, it is not clear from the available data how productive consonant ablaut is in the language. No author includes any details in their grammatical description. My guess is that there are still residual traces at the very least, but for the time being I lack the evidence. Obviously, much more research into the phonology of Arizona Tewa is needed.

6.4 Taos Northern Tiwa

The three Tiwa languages have certain features of phonology that set them apart from Kiowa, Tewa, and Towa, but otherwise do share many of the overall patterns in their sound inventories. The description here is extrapolated from those in Trager (1936, 1946), Hull (1973), and Kontak and Kunkel (1987).

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25 But, see Part III where a handful of pronominal proclitics are given with a final /h/ where the cognate Rio Grande Tewa forms have a final /ŋ/.
6.4.1 Taos Northern Tiwa Segmental Inventory

6.4.1.1 Taos Northern Tiwa Consonants

The consonants of Taos Northern Tiwa appear in Table 6-7.

Table 6-7: Taos Northern Tiwa Consonant Inventory

<table>
<thead>
<tr>
<th></th>
<th>Labial</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
<th>Labiovelar</th>
<th>Laryngeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiceless Stops</td>
<td>p</td>
<td>t</td>
<td></td>
<td>k</td>
<td>kʷ</td>
<td>ʔ</td>
</tr>
<tr>
<td>Voiced Stops</td>
<td>b</td>
<td>d</td>
<td></td>
<td>g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirated Stops</td>
<td>pʰ</td>
<td>tʰ</td>
<td></td>
<td>g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ejective Stops</td>
<td>pʰ</td>
<td>tʰ</td>
<td></td>
<td>kʰ</td>
<td>kʷ</td>
<td></td>
</tr>
<tr>
<td>Voiceless Affricates</td>
<td>c [c ~ č]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ejective Affricates</td>
<td>cʰ [čʰ]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiceless Fricatives</td>
<td>(f)</td>
<td>s</td>
<td>x</td>
<td>xʷ</td>
<td>h</td>
<td></td>
</tr>
<tr>
<td>Voiceless Lateral Fricative</td>
<td></td>
<td>l</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal Stops</td>
<td>m</td>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approximants</td>
<td>l, (r)</td>
<td>y</td>
<td>w</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Taos is thus like Kiowa and Arizona Tewa in possessing a large number of stops and two affricates. The glottal stop tends to be phonetically quite weak and is often realized as a mere hiatus when intervocalic. The voiced stops are not very frequent and do not occur word-initially except in borrowings from Spanish and English. They do occur commonly in syllable coda position, but tend to be devoiced when word-final. There are only two aspirated stops, but the language does have a velar and labiovelar fricative, not coincidentally at the same places of articulation for which aspirated stops are absent (cf. the dialect variation in Rio Grande Tewa). The bilabial aspirated stop I have heard articulated alternatively as a bilabial fricative, but such spirantization is not a regular occurrence. The two affricates vary from an alveolar to a palato-alveolar articulation, the latter being especially prevalent before high front vowels. The plain affricate is reported to have an alveolar articulation more commonly before /e/ and /ɔ/, but otherwise it
appears that it takes the palato-alveolar articulation nowadays more often than not. Conversely, the ejective affricate seems to be more frequently realized as an alveolar.

Taos Tiwa otherwise has a small array of fricatives and sonorants as is found in the other languages. The one exceptional segment particular to the Tiwa languages is the voiceless lateral fricative /ɬ/, a very frequently occurring consonant in the language\(^{26}\). I include the two marked segments, labiodental fricative /f/ and the flap /r/, which only occur in loanwords from Spanish and are not well integrated into the phonology of the language. These will not feature in the remaining discussion.

6.4.1.2 Taos Northern Tiwa Vowels

It is in the vowel system that the Tiwa languages especially differ from the other three branches of the family. While there is contrastiveness in vowel nasalization, there appears to be no contrast in vowel length. Also, the Tiwa languages have phonemic diphthongs of a kind not found in Kiowa, Tewa, and Towa\(^{27}\). Also, Tiwa languages have a phonemic unrounded central vowel which is unique to that branch of the family (contrasting with the high back rounded vowel, cf. section 6.7 on Towa). The vowels of Taos Tiwa are given in Table 6-8.

\(^{26}\) Towa does also possess a lateral fricative, but it is restricted to very specific morphophonological environments and does not have the full phonemic distribution of the Tiwa /ɬ/. Towa /ɬ/ is also not at all cognate with Tiwa /ɬ/, as will be seen in section 6.7 and chapter 0.

\(^{27}\) Diphthongs in these other branches must be analyzed as either vowel-glide consonant sequences (Kiowa and Arizona Tewa, as well as other phonetic falling diphthongs of the Tiwa languages), monophthongs with a diphthongal quality (the mid vowels of Kiowa and Towa), or as recently developed due to intervocalic consonant elision (Rio Grande Tewa).
Table 6-8: Taos Northern Tiwa Vowel Inventory

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Front</td>
<td>Central</td>
</tr>
<tr>
<td>High</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>Mid</td>
<td>(e)</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>a</td>
<td>ř</td>
</tr>
<tr>
<td>Diphthongs</td>
<td>ia</td>
<td>iœ</td>
</tr>
</tbody>
</table>

Vowel qualities require some explanation given the distribution in the table. The mid vowel /e/ is relatively low and front within the vowel space, closer to IPA [ɛ] or even [æ]. The low front vowel /a/ ranges from front [a] or [æ] to a low mid vowel [ä]. The contrasting low back vowel /ɔ/ tends to be rounded and is closest to IPA [ɒ], but may also be realized as unrounded [a]. In a syllable closed by a sonorant, it may also raise and centralize to roughly [ʊ]. I diverge from Trager’s practice of representing this vowel as “o” in order to emphasize the distinctness from the [o] seen in other Kiowa-Tanoan language. I use “ɔ” instead of the phonetically more accurate “ɒ” just to clearly distinguish the vowel from /a/.28 The high back rounded vowel does tend to be in the higher portion of the indicated range, between IPA [u] and [ʊ], but may dip into the [o] range. Finally, the central vowel tends to be high, but ranges from central [i] to back [u]. Hull (1973) also reports that it is sometimes rounded, i.e. IPA [u]. It may also sometimes drop into the mid range towards IPA [a].

The phonetic realization of the diphthongs could benefit from further synchronic study. The vowel /ia/ ranges from [iæ] or [iɛ] to [iä]. The nasal diphthong is close to this in quality, tending towards [iẽ]. Central /iɔ/ seems to tend towards [ia] or [ɔã] to [uɑ], but

---

28 This also draws out the phonetic similarity between Kiowa /ɔ/ and Tiwa /ɔ/.
the realization of the second half of the diphthong is not clear from the literature. Finally, the back oral diphthong /uɔ/ is realized roughly as [ʊɔ] or [ʊɑ].

Frequency of occurrence notwithstanding, there is a nasal correspondent to every oral monophthong except for the central vowel /ɨ/ (but compare Picuris Tiwa and Southern Tiwa on this point). Note also that the low vowel contrast is lost in the nasal series. There is a much clearer lack of correspondence in the diphthongs, there being only one nasal diphthong compared to three frequently occurring oral diphthongs. Those vowels in parentheses are of infrequent occurrence. The oral vowel /e/ appears to occur primarily as an epenthetic vowel in the nominal noun class and number marking construction. Otherwise it is found rarely and appears to be derived by recent denasalization of /e/. The nasal vowel /i/ is highly infrequent and the diphthong /iɛ/ actually appears to fill the high front nasal position within the phonological system. Lastly, the diphthong /ue/ is found only in borrowings from Spanish and does not form part of the indigenous vowel system.

With no (known) contrastive vowel length in the language, a restriction on vowel length and closed syllables is irrelevant. All vowels may appear in any syllable type, including diphthongs, although there restrictions on the combination of certain vowels with certain coda and onset consonants. The status of vowel nasalization in syllables with nasal consonants is questionable. It appears that there is historically the same kind of nasality neutralization as is found in the Kiowa, Tewa, and Towa branches to some extent. Thus, syllables with a coda nasal consonant have no contrast in vowel nasality

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29 Trager maintained a distinction between /ą/ and /ɔ̨/, but noted that there is effectively no phonetic distinction between the two (Trager 1946: 194). Hull (1973) found there to be no phonemic distinction between the two either and my own analysis of the distribution of vowels follows the latter in this. See comment below on vowels in syllables with nasal consonants, however.
synchronously. However, a recent development within the Northern Tiwa languages, namely the nasalization of all onset voiced consonants in indigenous lexical stems, seems to have led to some degree of contrastiveness. This is especially noticeable in the noun class and number suffix -na *SINGULAR (A)* which contrasts with the suffix -nɔ̨ *INVERSE (B)*, whereas the regular neutralization would predict them both to be pronounced as [nɔ̨]. Such oral vowels that are “accidentally” adjacent to nasal consonants do still receive some phonetic nasalization, but this does not lead to a synchronic merger with phonemic nasal vowels.

6.4.1.3 *Taos Northern Tiwa Tone*

As in the other branches of the family, the Tiwa languages do seem to have phonemic tone. Unfortunately, it is poorly described. George Trager analyzed Taos Tiwa has having three tone levels—high, mid, and low—and three stress levels—strong, medium, and weak. He finds mid tone to be by far the most frequently occurring and weak stressed syllables limited to taking mid tone. Such a system does not occur in any other language to my knowledge and seems odd in the light of the other Kiowa-Tanoan languages. But, Trager’s analysis has filtered down to research on Picuris Tiwa and Southern Tiwa, so that literature on Tiwa that even bothers marking tone has largely inherited Trager’s questionable system. However, Hull (1973) analyzes the language as having three tones just like Kiowa, Tewa, and Towa: high, falling, and low. Kontak and Kunkel (1987) follow suit in their work. A cursory examination of certain morphophonological features and of the Tiwa translation of the Book of Luke (which has tone marking) suggests that almost all words end up with a high or falling tone, indicating
some kind of pitch accent system. Further analysis on tone is desperately needed throughout the Tiwa branch of the family meaning a full reconstruction of tone must be put on hiatus for now.

6.4.2 Taos Northern Tiwa Phonotactics

In its syllable structure, Taos Northern Tiwa is similar to Kiowa. The primary syllable structures are CV and CVC. All of the above consonants may occur in syllable onset position, but the voiced stops are quite rare in indigenous lexical items except in grammaticalized morphemes and are particularly rare in word-initial position. The lateral approximant /l/ is also quite rare word-initially, but does so occur in at least a couple of indigenous lexical stem: līlu chicken and līl belt. Possible coda consonants are /b, d, g, m, n, l, y, w/, in other words the voiced stops and sonorants. The stops tend to devoice in coda position. The velar stop /g/ only occurs as a coda as a result of vowel elision (see below) and does not terminate any morphemes. These codas are shown in (59).

(59) Taos Tiwa coda consonants (Trager 1946; Kontak and Kunkel 1987)

<table>
<thead>
<tr>
<th>Consonants</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>/pôb [pôp]</td>
<td>flower</td>
</tr>
<tr>
<td>/ɔd [ɔnt]</td>
<td>chin</td>
</tr>
<tr>
<td>ḡwâypiawawóning</td>
<td>even though I'm not understanding</td>
</tr>
<tr>
<td>c'ulwi</td>
<td>yellow</td>
</tr>
<tr>
<td>pûy</td>
<td>friend</td>
</tr>
<tr>
<td>kôw</td>
<td>horse</td>
</tr>
</tbody>
</table>

Relatedly, CVCC consonants occur in word-final position due to such vowel elision. Thus, possible coda consonant clusters are /ng, lg, yg/ (which derive from /ngə, lgə, ygə/) and there is always a morpheme boundary between the two consonants, as seen in (60).
Onset consonant clusters are found only in loanwords from Spanish and include /pl, pr, tr, kl, kr, fr/.

(60) Taos Tiwa coda consonant clusters (Kontak and Kunkel 1987; Messengers 1992)

\[
\begin{array}{ll}
\text{hiŋ} & \text{why} \\
\text{imtɔy} & \text{those wearing them} \\
\text{sialg} & \text{when he fell}
\end{array}
\]

\[
\begin{array}{l}
\text{(< hiŋ-ŋ how-RESULT)}
\\
\text{(< im-tɔy-g 3I>>3P=be.in-when)}
\\
\text{(< Θ-sial-g 3S.ITR=fall.S/D-when)}
\end{array}
\]

6.4.3 Taos Northern Tiwa Phonological Alternations

The morphology of the Tiwa languages is even more agglutinative than that found in the other branches of the family. As such, there do not appear to be as many regular phonological or morphophonological alternations beyond basic ones such as coda devoicing of voiced stops. Among the Tiwa languages, the greatest complexity is probably found in Taos Northern Tiwa. Much of the complexity is morphologically specified and will not be covered in this chapter. There are some morphophonological processes that should be mentioned here though.

6.4.3.1 Taos Tiwa Vowel Elision

A general process that is productive in Taos Tiwa is word-final vowel elision, which applies in particular following the consonants /g, l, m, n/ and seems solely, or most frequently, to affect the vowel /ɔ/. Morphological forms lead most Taos Tiwa words to end in a vowel, unlike the case in Kiowa and Tewa, but this elision process increases the frequency of final consonants. Examples of this elision appear below following a nasal (61)a and a stop (61)b respectively.
Taos Tiwa vowel elision (Trager 1960: 27; Kontak and Kunkel 1987: 35)

a. uwic'úbwam(ɔ̨)
b. kʷê=5g(ɔ̨)

3P=EV=first-be-ST Taos=LOC

They (inan.) are the first.

This elision is quite pervasive in its distribution, applying utterance-internally before vowels or consonants and even utterance-finally. Further study into the phenomenon would not be amiss.

6.4.3.2 Taos Tiwa Number-Marking Suffix Allomorphy

Conversely to the above, there is a vowel epenthesis process in another area of the grammar. When one of the noun class/number suffixes -na SINGULAR (A), -nɔ̨ ~ nęmɔ INVERSE (B), -nɛ PLURAL (C), is attached to a stem ending in a consonant, one of two things may happen. First, if the stem ends in a glide /y, w/ and the final syllable bears high tone (see below), the suffixes will be directly attached. The same is true if the stem ends in a high tone vowel (Kontak and Kunkel 1987). Examples are shown in (62).

(62) Taos Tiwa no epenthetic vowel (Kontak and Kunkel 1987)

ká-na mother
híw-na rock
t'ỳy-na person

If, on the other hand, the stem ends in any of the other possible morpheme-final codas /b, d, m, n, l/ or if it ends in a glide /y, w/ preceded by a low tone, an epenthetic vowel /e/30 is inserted before the suffix. The tone on this epenthetic vowel depends on the exact suffix and the tone of the preceding stem. When the epenthetic vowel is preceded by a

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30 Trager writes this as an oral vowel while Hull and Kontak and Kunkel consider it a nasal vowel. The latter does make sense given the virtual non-occurrence of oral /e/ otherwise. The pre-nasal position may have led Trager to believe any nasalization he heard was simply by coarticulation.
low tone, it will always bear high tone, as in (63)a. When preceded by a falling tone or when preceded by a high tone syllable with a coda obstruent, the epenthetic vowel will take a low tone before the singular (A) suffix -na but a high tone before the other suffixes (63)b. When preceded by a high tone syllable that ends in a sonorant, the epenthetic vowel takes a high tone before the singular suffix -na and a low tone before the other suffixes (63)c.

(63) Taos Tiwa high tone epenthetic vowel (Kontak and Kunkel 1987)

a. tiw-é-némə women, liw-é-na woman
pol-é-nę food, ḥen-é-némə foot

b. sión-é-na man, pòb-é-némə flower
sión-é-nęmə men, pòb-é-ńę flowers

c. kól-é-na wolf, xíen-é-na hat
kól-é-nęmə wolves, xíen-e-ńę hats

Note in all of the above that the suffixes themselves bear low tone. No form with -ńę is given because this suffix never occurs with an epenthetic /e/ (see below).

When a vowel-final stem bears a low tone on that final syllable, a process similar to the above /e/ epenthesis occurs. Before the suffix, a syllable -V- is inserted, where the unspecified vowel is a copy of the preceding stem-final vowel. If the stem-final vowel is nasal, the copy will be the oral correlate. If the vowel is a diphthong, the copy will consist only of the second vowel element of the diphthong, as shown in (64).
As with the basic epenthesis above, since the copy follows a stem-final low tone, the inserted element bears high tone.

There are two other morphophonological factors related to this noun class/number suffix construction. First, it must be noted that the inverse (B) suffix has two allomorphs: -nə and -nəmə. The former allomorph appears to be attached to a stem of two or more syllables that ends in a vowel while the latter is attached elsewhere (i.e. to a monosyllabic stem, including monosyllabic roots that occur at the end of longer compounds, or to a polysyllabic stem that ends in a consonant)\(^\text{31}\). These suffixes are illustrated in (65).

(65) Taos Tiwa inverse suffix allomorphs (Trager 1946; Kontak and Kunkel 1987)

\[
\begin{align*}
\text{ciliyə-ŋə} & \quad \text{bats} \\
\text{cəłu-ŋə} & \quad \text{turtles} \\
\text{siiyi-ŋə} & \quad \text{daughter-in-law} \\
\text{ɬoxu-ŋə} & \quad \text{chair} \\
\end{align*}
\]

\[
\begin{align*}
\text{ʔu-ʔu-nəmə} & \quad \text{children} \\
\text{piw-ɛ-nəmə} & \quad \text{rabbits} \\
\text{t'ʃy-ɛ-nəmə} & \quad \text{people} \\
\text{ʔup'il-ɛ-nəmə} & \quad \text{babies} \\
\end{align*}
\]

Note that only -nəmə occurs following an epenthetic vowel.

The other factor to note is the variation of the tone on the stem itself, depending on its morphosyntactial environment. Kontak and Kunkel (1987) outline some

\[\text{\textsuperscript{31} There do appear to be exceptions to this generalization: luli old man > luli'ɛnəmə old men, instead of the expected luliŋə. Also there are cases such as šμu mouth > šμuŋə mouth, which appears to be a compound šmu-ŋə mouth-bag, and we would expect *šmuŋəmə since the suffix is attaching to a monosyllabic root. These instances suggest either historical reanalysis within the language or that there is some other determining factor for the distribution of these allomorphs.}\]
predictability based on the stem’s tone when it occurs in a noun incorporation
construction, i.e. the attested construction that comes closest to expressing an isolated
stem without suffixes. If the stem ends in a vowel or glide and bears a high tone on the
final syllable when incorporated, it will maintain a high tone when the singular (A) suffix
-na is attached, will take a falling tone when the inverse (B) suffix -nęmę or plural (C)
suffix -nę is attached, and will take a low tone when the inverse (B) suffix -nę is
attached. If the stem ends in an obstruent, it will take a falling tone with the suffixes.

These alternations are shown in (66).

(66) Taos Tiwa stem tone changes (Kontak and Kunkel 1987)

<table>
<thead>
<tr>
<th>Stem</th>
<th>Singular</th>
<th>Noun</th>
<th>Inverse Suffix</th>
<th>Plural Suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>ti=híw- mù</td>
<td>I saw a rock</td>
<td>híw-na</td>
<td>rock</td>
<td>híw-nę</td>
</tr>
<tr>
<td>ti=ká- mú</td>
<td>I saw a mother</td>
<td>ká-na</td>
<td>mother</td>
<td>ká-nęmę</td>
</tr>
<tr>
<td>ti=cûd- mú</td>
<td>I saw a dress</td>
<td>cûd-e-na</td>
<td>dress</td>
<td>cûd-é-nę</td>
</tr>
</tbody>
</table>

Those stems that end in a vowel may not bear a falling tone in the incorporated stem,
suggesting some degree of restriction on tone distribution. Such CV suffixes may still
bear falling tone as predicted by the above patterns, though. Incorporated stems (ending
in a consonant) that do bear falling tone have falling tone invariably no matter the suffix.

Stems that must take the epenthetic vowel before the suffixes do not alter their stem tone,
unless they end in an obstruent /b, d/. This includes all stems which have a low tone when
incorporated since these always take the epenthetic or reduplicated vowel (see above).

Such stems with immutable tone are seen in (67).

(67) Taos Tiwa immutable stem tones (Kontak and Kunkel 1987)

<table>
<thead>
<tr>
<th>Stem</th>
<th>Singular</th>
<th>Noun</th>
<th>Inverse Suffix</th>
<th>Plural Suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>ti=sìon- mú</td>
<td>I saw a man</td>
<td>sìon-e-na</td>
<td>man</td>
<td>sìon-é-nęmę</td>
</tr>
<tr>
<td>ti=piw- mú</td>
<td>I saw a rabbit</td>
<td>piw-é-na</td>
<td>rabbit</td>
<td>piw-é-nęmę</td>
</tr>
</tbody>
</table>
Despite the poor reporting of tone in the language, the above alternations do make it possible to establish the tones on nouns (or rather on forms that can appear in the noun class/number marking construction) even when tonal transcription is absent or is inaccurate. This is assuming that Kontak and Kunkel’s (1987) analysis (on which the above account is based) is indeed accurate. As noted, further study of the tones of the language is needed.

6.4.3.3 Taos Tiwa Verb Suffix Allomorphy

The last alternation to mention here is a process of phonological assimilation that affects two verbal suffixes. Most verbal morphology is either tightly bound with the stem or is affixed with no alternation. The two suffixes in question, the future/potential -yá and the passive -ya, both change in the same ways based on the preceding sounds. Following the voiced stops /b, d/, the suffixes lose the glide and appear only as a vowel suffix (68)a. Following the sonorants /l, m, n/, the glide fully assimilates to the consonant, resulting in a geminate (68)b. Finally, after the vowel /a/, the glide becomes a glottal stop \(\text{ʔ}/ (68)c. Otherwise, the suffixes appear in their citation form (68)d.

(68) Taos Tiwa future allomorphs (Trager 1935-1972; 1946: 211,)

a. c'iődá enter (POT) c'iôd (ROOT)
   hiôbá like (POT) hiôb (ROOT)
b. k'ollá eat (POT) k'öl (ROOT)
   ŋmmá do (POT) ŋm (ROOT)
   wɔnná arrive (POT) wɔn (ROOT)
c. wa'á be (POT) wa (ROOT)
   pa'á make (POT) pa (ROOT)
In addition to this predictable allomorphy, in many verb stems the passive suffix will follow a lexically specified consonant that does not appear in the basic active stem. Such consonants will play a role in the reconstruction of stem-final consonants in chapter 10.

6.4.3.4 Taos Tiwa Verb Stem-Initial Consonant Ablaut

Although not showing as many alternations as Rio Grande Tewa, the Tiwa languages do have verb stem-initial consonant ablaut to nearly the same level of productivity. The specific alternations seen in Taos Northern Tiwa are nearly identical to those found in Tewa, as seen in (69).

(69) Taos Tiwa verb stem-initial consonant ablaut (Trager 1946: 198)

<table>
<thead>
<tr>
<th>Basic form</th>
<th>~</th>
<th>Ablaut form</th>
</tr>
</thead>
<tbody>
<tr>
<td>p' ~ p</td>
<td>ʾ ~ k</td>
<td></td>
</tr>
<tr>
<td>t' ~ t</td>
<td>h ~ x</td>
<td></td>
</tr>
<tr>
<td>k' ~ k</td>
<td>w ~ kʷ</td>
<td></td>
</tr>
<tr>
<td>c' ~ c</td>
<td>w ~ xʷ</td>
<td></td>
</tr>
<tr>
<td>m ~ p</td>
<td>y ~ c</td>
<td></td>
</tr>
</tbody>
</table>

As in Tewa, ejective obstruents and nasal stops alternate with their plain voiceless obstruent counterparts, although no instance of the alveolar nasal stop undergoing ablaut is attested in Taos Tiwa. Laryngeals alternate with a velar obstruent and glides alternate with the nearest voiceless stop, affricate, or fricative. The labiovelar glide shows an interesting split between instances that alternate with a stop and those that alternate with a fricative. This is synchronically unpredictable, but see chapter 0 for a diachronic explanation. Examples of consonant ablaut applying in stems are seen in (70) below.
(70) Taos Tiwa ablaut constructions (Kontak and Kunkel 1987: 4, 7, 11, 19)

a. kóṉmupú'čhé
   kóṉm=pu'-č-hé
   3S>>1D=see.INC-come-FUT
   S/he is coming to see us (du.).

b. tičiwmń
   ti=čw-mń
   1S>3S=eagle-see.PF
   I saw an eagle.

c. kólë̱né
   kól-é-nę
   eat.INC-e-P
   food

d. ọ=t'i̱m-k'ol-hu
   ọ=t'i̱m-k'ol-hu
   1S>3P=morning-eat-IPF
   I eat breakfast (everyday).

e. k'ĩ̱nmę
   0=k'ĩ̱m-mę
   3S.ITR=stand.INC-ST
   S/he's standing.

f. m̃wî̱nę
   m̃=wînę
   3S.RFL=stand.up.PF
   S/he stood up.

The sentences in (70)a-b illustrates the nasal ~ stop alternation with verb compounding.

The forms in (70)c-d give the ejective ~ plain stop ablaut with a nominalization construction. The verb forms in (70)e-f show the glide ~ stop alternation with a derived stative. Such ablaut still appears to be highly common in modern Taos Tiwa grammar.

6.5 Picuris Northern Tiwa

Picuris Northern Tiwa phonology is unsurprisingly similar to that of Taos Northern Tiwa, but there are quite a number of differences that warrant an independent treatment. These differences are minimally apparent in the consonant inventory, but even more apparent in the vowel system and general phonological patterns of the language.

Most of the following account is based on Harben Trager (1968) and moreover Zaharlick (1977), but with some analogies drawn with the description of Taos Tiwa above.

6.5.1 Picuris Northern Tiwa Segmental Inventory

6.5.1.1 Picuris Northern Tiwa Consonants

The consonant inventory is given in Table 6-9.
Table 6-9: Picuris Northern Tiwa Consonant Inventory

<table>
<thead>
<tr>
<th></th>
<th>Labial</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
<th>Labiovelar</th>
<th>Laryngeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiceless Stops</td>
<td>p</td>
<td>t</td>
<td>k</td>
<td>k^w</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>Aspirated Stops</td>
<td>pʰ</td>
<td>tʰ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ejective Stops</td>
<td>p'</td>
<td>t'</td>
<td>k'</td>
<td>k'^w</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiceless Affricates</td>
<td>c [č ~ č̆]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ejective Affricates</td>
<td>c' [č' ~ č'̆]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiceless Fricatives</td>
<td>s</td>
<td>x</td>
<td>x^w</td>
<td>h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal Stops</td>
<td>m</td>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approximants</td>
<td>l</td>
<td>y</td>
<td></td>
<td>w</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The most striking feature of this inventory in comparison to Taos Tiwa—or indeed in comparison to any other Kiowa-Tanoan language—is the complete absence of a series of voiced stops. These have merged with the nasal stops in coda position and word-initially and with the voiceless unaspirated stops in the onsets of grammatical morphemes. Otherwise the table looks virtually identical to Table 6-7 for Taos above, although this is not to say that the correspondences are identical between the languages, as we’ll see later.

In terms of the phonetic realization of consonants, the comments for Taos Tiwa above largely apply to Picuris. There may be a stronger tendency to pronounce the affricates as palato-alveolar than as alveolar, especially before high front vowels, but this has not been well-described.

6.5.1.2 Picuris Northern Tiwa Vowels

The most immediate impression of the vowel inventory of Picuris Tiwa is that it is smaller than that of any of the other Kiowa-Tanoan languages. Not only is there no (known) vowel length distinction, there are also far fewer diphthongs than are to be found in the other Tiwa languages. This can be observed in Table 6-10.
Table 6-10: Picuris Northern Tiwa Vowel Inventory

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th></th>
<th>Nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Front</td>
<td>Central</td>
<td>Back</td>
</tr>
<tr>
<td>High</td>
<td>i</td>
<td>i</td>
<td>u</td>
</tr>
<tr>
<td>Mid</td>
<td>e</td>
<td>a</td>
<td>o</td>
</tr>
<tr>
<td>Low</td>
<td>a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diphthongs</td>
<td>ia</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The monophthongal system is similar enough to Southern Tiwa (see next section), but the occurrence of only a single diphthong is striking. The high and mid front oral vowels are close to, if slightly lower than, their cardinal IPA values when stressed, but are lowered and slightly centralized when unstressed. The high central and high back oral vowels are both similar to their Taos counterparts, although the high back rounded vowel may tend to remain higher than the Taos /u/. Picuris Tiwa differs from Southern Tiwa and Taos Tiwa in distinguishing two higher back rounded monophthongs, Picuris /o/ being similar in quality to Tewa and Kiowa /o/. Finally, Picuris Tiwa possesses only a single low vowel, which tends to be realized as fairly low and only a little back from central [ä]. The single diphthong /ia/ is fairly front in its realization, around [ia] or [iæ]. Picuris Tiwa has a nasal vowel to correspond to every monophthong, including the central vowel /ɨ/, which is absent in Taos, although this segment is quite rare in Picuris Tiwa. The nasal low vowel /a/ tends to be raised higher than its oral counterpart, being realized as [è] or perhaps even [ã]. The high back nasal vowel /u/ is very marginal in the language, occurring only in a couple of highly grammaticalized morphemes.

The same observations that hold for Taos Tiwa appear to hold for Picuris with respect to vowel nasalization and adjacent tautosyllabic nasal consonants. While there is trace evidence that the vowel nasalization contrast was formerly neutralized in the
context of a nasal consonant, the pervasive nasalization of the voiced stop series may have led to some degree of nasal contrast when following a nasal onset or preceding a nasal coda.

6.5.1.3 Picuris Northern Tiwa Tone

The status and details of tone in Picuris Tiwa are uncertain. The only available published analysis is formulated under the same rubric as George Trager’s description of Taos Tiwa, a system I find highly suspect. It is likely that it makes use of some kind of tone system similar to that described by Hull (1973) and Kontak and Kunkel (1987) for Taos Tiwa in the previous section. From the limited contact I have had with the language, there are definitely some significant contrasts in the suprasegmental phonology of the language of which speakers are quite aware. Given some of the phonological alternations involving the noun class and number suffixes and by analogy with Taos Tiwa, there is some suggestion of the system presented with the phonological alternations below.

6.5.2 Picuris Northern Tiwa Phonotactics

The phonotactics of Picuris Tiwa are not radically different from Taos Tiwa’s, the prevailing syllable shapes being CV and CVC. All of the consonants in Table 6-9 above may occur in syllable onset position, but /l/ occurs word- or morpheme-initially only in a couple of attested morpheme (lelo chicken, lile roll) and /y/ occurs in onset position mainly in a small number of grammaticalized morphemes. Coda consonants are limited to /m, n, l, y, w/, i.e. the sonorants. Any of the vowels may occur in a closed syllable. Picuris Tiwa does not appear to have the same word-final vowel elision as Taos Tiwa, so consonant clusters in coda position do not exist.
6.5.3 Picuris Northern Tiwa Phonological Alternations

In terms of phonological and morphophonological alternations, Picuris Tiwa appears to be somewhat simpler than Taos Tiwa, although this aspect of the grammar has not been well described. Verbal morphology seems to be largely agglutinative, with some lexically idiosyncratic allomorphy involving the passive marker, some of which will be addressed in chapter 10 with stem-final consonants. There does seem to be a tendency to fully assimilate a coda consonant to a following consonant in compounds, cf. the name of Picuris Pueblo: \textit{p’inwiltʰa} \textit{p’iwwiltʰa}. This can be observed in the texts of Harrington and Roberts (1928), but the extent to which it applies in the language has not yet been studied.

6.5.3.1 Picuris Tiwa Number-Marking Suffix Allomorphy

Like Taos Tiwa, there is some complexity involving the addition of noun class and number marking suffixes on nouns. The three suffixes of Picuris are -\textit{ne} \textit{SINGULAR} (A), -\textit{mo} \textit{(INANIMATE) SINGULAR} (B)\textsuperscript{32}, -\textit{ne} \textit{PLURAL} (C). As in Taos Tiwa, these suffixes may be added directly to the stem, added after an epenthetic vowel -\textit{e}-, or added after a reduplicated vowel. Nichols (1994) attempts to account for this allomorphy on the basis of stress, following the available Trager-esque description of suprasegmentals. It is more likely that the distribution is based on tone, as described above for Taos Tiwa. What is definitive is that: a) the suffixes are only added directly to a stem that ends in a vowel, and b) a stem that ends in any consonant must take an epenthetic vowel when the suffixes

\begin{footnote}{32}The equivalent to the inverse (B) suffix of Taos Tiwa, this Picuris Tiwa suffix is only ever used with a singular meaning and is added only to a subset of nouns with inanimate reference (i.e. those belonging to Class II). The plural (C) suffix is used with all plurals of any class or animacy status.
\end{footnote}
are added. Beyond this, what needs to be accounted for is: a) stems ending in a vowel that
directly take a suffix without adding an epenthetic or reduplicated vowel; b) the
distribution of vowel reduplication; and, c) the distribution of epenthetic -e- versus
epenthetic -ˀe-. Note that the former form of the epenthetic vowel occurs only after
consonants, but the latter form occurs after vowels (since the syllable needs an onset) and
also after consonants.

By analogy with Taos Tiwa, vowel reduplication probably occurs only when the
stem ends in a low tone vowel. The noun forms in (71) illustrate vowel reduplication.

(71) Picuris Tiwa reduplicated vowel (Zaharlick 1977)

| wa’áne | life  | wa  |
| ča’ámo | song  | ča  |
| ṭi’ine | corn  | ṭi  |
| miasia’áne | cumulus cloud | miasia |
| mólto’óne | donkey | mólto |

Correspondingly, direct suffixation and epenthetic -e- undoubtedly occur after a stem
ending in a vowel with non-low tone. At a guess (and by partial analogy with Taos Tiwa),
the suffix may be directly added to a stem that ends in a high tone vowel (72)a while the
epenthetic vowel is added to a stem that ends in a falling tone vowel (72)b. Nichols
(1994) notes that an epenthetic vowel always seems to be added before the suffix -mọ
when attached to a monosyllabic stem.

(72) Picuris Tiwa epenthetic syllable and its absence (Zaharlick 1977)

| p’áne | moon  | p’á  |
| łoléne | old man | łolé |
| mǐmǐne | cousin | mǐmǐ |
| tʰíne | house  | tʰi  |
b. mąxi\'ene  \textit{finger}   \textit{məxi}
   ɬú\'em\ə  \textit{arrow}   ɬú
   čęčó\'enę  \textit{mice}   čęčó
   k'į\'em\ə  \textit{neck}   k'į
   p'ę\'em\ə  \textit{head}   p'ę

This of course assumes that Picuris Tiwa has a three tone system comparable to other Kiowa-Tanoan languages. It is quite possible that the tone-allomorph correspondence is the opposite of that given. Similarly, when a stem ends in a consonant, I will speculate that the epenthetic vowel is -e- when the final syllable ends in a high or low tone (73)b and is -e- when the final syllable ends in a falling tone (73)a.

(73) Picuris Tiwa consonant-final stems and epenthetic vowels (Zaharlick 1977)

\hspace{1cm} a. pəm'em\ə  \textit{flower}  pəm
   p'alúm\'ene  \textit{warm water}  p'alúm
   ɬán'em\ə  \textit{chin}  ɬán
   t'ay\'ene  \textit{person}  t'ay

\hspace{1cm} b. tʰoléne  \textit{sun}  tʰol
   ɬiw\'ene  \textit{woman}  ɬiw
   ɬi\'ene  \textit{ant}  ɬi  but,  ɬi\'enę  \textit{ants}

Obviously this is all speculative at this point until someone can either analyze a reliable corpus of sound recordings or, even better, work with fluent speakers. It also does not provide an account of tone on the epenthetic vowels and suffixes themselves. It is probable that the epenthetic and reduplicated vowels bear high tone by analogy with Taos Tiwa. The sources on Picuris Tiwa also suggest that the suffixes -m\φ and -n\ę bear some kind of prominence (marked as medial stress high tone) more often than not, suggesting they tend to bear high tone. More study is clearly required to address this speculation and those constructions not accounted for.
The rest of the (morpho)phonology appears to be straightforward with no major alternations that can be determined from the published literature. It is possible that there are more alternations with tone in other parts of the grammar that do not have salient segmental reflexes as with the nominal suffixes.

6.5.3.2 Picuris Tiwa Verb Stem-Initial Consonant Ablaut

Ablaut in Picuris Northern Tiwa is comparable to that seen in Taos, both in its productivity and in the specific alternations that can be observed in the language, lacking only the /y ~ c/ alternation seen in Taos. (74) illustrates the consonants involved.

(74) Picuris Tiwa vowel stem-initial consonant ablaut (Nichols 1996)

<table>
<thead>
<tr>
<th>Basic form</th>
<th>Ablaut form</th>
</tr>
</thead>
<tbody>
<tr>
<td>p’ ~ p</td>
<td>ʔ ~ k</td>
</tr>
<tr>
<td>t’ ~ t</td>
<td>h ~ x</td>
</tr>
<tr>
<td>k’ ~ k</td>
<td>w ~ kʷ</td>
</tr>
<tr>
<td>c’ ~ c</td>
<td>w ~ xʷ</td>
</tr>
<tr>
<td>m ~ p</td>
<td></td>
</tr>
</tbody>
</table>

Actual instances of ablaut applying appear in the following examples of (75).

(75) Picuris Tiwa ablaut constructions (Nichols 1994a: 87; Zaharlick 1977: 160, 272)

a. toxʷiałole  pʰalmq̃  ma̱xʷelsay  b. nąwelmęń
toxʷia̱-łole  pʰal-ma  ma-xʷel-say  ß-na-wel-men
coyote-old.man  hole-into  3S.RFL-dig-begin  3S.ITR-NA-dig-SB
The old coyote began to dig into the hole.  As he dug...

c. čit'i  sinenę  nąpiwpʰinhuyp'u-e...
c̱it'i  sin-e-nę  ß=ną-pʰiwpʰin-huy-p=³e
that man-e-S  3S=3S=NA-dead-throw.away.INC-take-SB.PST=REL
that man who threw death away...

d. ap'itiahu
ap'itia-hu
3S>>3S=throw.away.PASS-PRG
it is thrown away
The verb forms in (75)a-b show the glide – labiovelar obstruent alternation with verb compounding. The sentences in (75)c-d illustrate an ejective – plain stop ablaut with a nominalization construction. As can be seen, despite several other phonological and morphosyntactic differences between Taos and Picuris Tiwa, their respective ablaut alternations are effectively identical.

### 6.6 Southern Tiwa

The two (well documented) Southern Tiwa dialects show a fair number of differences from their Northern sisters, but still share general characteristically Tiwa traits. In terms of phonological inventory, it appears that Isleta and Sandia are effectively the same. Some of the few known differences will be noted below, but the tables of consonants and vowels apply to both. Leap (1970b) provides the best account of (Isleta) Southern Tiwa phonology, although other sources have made occasional comments of relevance.

#### 6.6.1 Southern Tiwa Segmental Inventory

##### 6.6.1.1 Southern Tiwa Consonants

Table 6-11 presents the consonant inventory.
Table 6-11: Southern Tiwa Consonant Inventory

<table>
<thead>
<tr>
<th></th>
<th>Labial</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
<th>Labiovelar</th>
<th>Laryngeal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Voiceless Stops</strong></td>
<td>p</td>
<td>t</td>
<td>k</td>
<td></td>
<td></td>
<td>j</td>
</tr>
<tr>
<td><strong>Voiced Stops</strong></td>
<td>b</td>
<td>d</td>
<td>g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aspirated Stops ~ Fricatives</strong></td>
<td>pʰ ~ f³⁵</td>
<td>tʰ ~ ð</td>
<td>kʰ ~ x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ejective Stops</strong></td>
<td>p'</td>
<td>t'</td>
<td>k'</td>
<td>k'ʷ</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Affricates</strong></td>
<td>č</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ejective Affricates</strong></td>
<td>č' ~ č'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Voiceless Fricatives</strong></td>
<td>s</td>
<td>š</td>
<td>xʷ</td>
<td>h, (hʷ)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Voiceless Lateral Fricative</strong></td>
<td>l</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nasal Stops</strong></td>
<td>m</td>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Approximants</strong></td>
<td>r, (l)</td>
<td>y</td>
<td>w</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The first most noticeable difference from Taos and Picuris Tiwa is the variation in the aspirated stop series, which all may be realized as fricatives. In fact it appears that by the end of the 20th century, the fricative pronunciations were strongly preferred in both dialects of Southern Tiwa, with Sandia perhaps showing the stronger predilection. Also, the palato-alveolar articulation of both affricates seems to be the more prevalent. While not apparent from this inventory, the voiced stops are much more frequent in Southern Tiwa than in Northern Tiwa, the historical nasalization of the stops primarily having applied preceding nasal vowels (much as in Rio Grande Tewa and Towa). The voiced stops are realized as stops in onset position except intervocally when /b, d, g/ tend to spirantize to [β ~ v, ð, γ] respectively. In coda position these voiced stops tend to both devoice and spirantize, being realized as [ϕ ~ f, θ, x] respectively (thus making it appear that the aspirated series can occur in coda position).

Another feature by which Southern Tiwa differs from Northern Tiwa is in the loss of the labiovelar stops, which have merged with other consonants (see chapter 0).

³³ This consonant may also be realized as /ϕ/.
Southern Tiwa also possesses a palato-alveolar fricative not found in other Tiwa varieties and has a rhotic flap where the other languages have a lateral approximant. The lateral approximant marked in parentheses above occurs only in loanwords from Spanish. The status of the labialized laryngeal /hʷ/ is uncertain. It is unclear if it truly is a distinctive phoneme synchronically or if it is simply an alternative pronunciation of the labiovelar fricative /xʷ/. The same lexical item may appear with either transcription in the literature. If they are distinct phonemes, then I suspect that the /hʷ/ corresponds to the /xʷ/ of Northern Tiwa while the Southern Tiwa /xʷ/ corresponds to the Northern Tiwa /kʷ/. If they are merely allophones of one another, then the historically distinct /xʷ/ and /kʷ/ have merged as /xʷ ~ hʷ/ in Southern Tiwa.  

6.6.1.2 Southern Tiwa Vowels

The Southern Tiwa vowel inventory, seen in Table 6-12, shows features familiar from the inventories of both Taos Tiwa and Picuris Tiwa.

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Front</td>
<td>Central</td>
</tr>
<tr>
<td>High</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>Mid</td>
<td>e</td>
<td>(o)</td>
</tr>
<tr>
<td>Low</td>
<td>a</td>
<td></td>
</tr>
<tr>
<td>Diphthongs</td>
<td>ia</td>
<td>ea</td>
</tr>
</tbody>
</table>

The qualities of the monophthongs, both oral and nasal, are close to those found in Picuris Tiwa, except in the back vowels. The high back vowel is relatively low, tending to be realized as approximately [ʊ]. The marked [o] is probably best considered an

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34 Laurel Watkins (personal communication) reports that a linguist assisting SIL workers Barbara Allen and Donna Gardiner had detected a phonetic difference, but that some Tiwa speakers had merged the two consonants inconsistently.
allophone of /u/ which occurs in predictable environments, most notably before a coda /y/. Thus, it is a five vowel system when considering only the monophthongs. Also like Picuris Tiwa (and unlike Taos), there is a nasal counterpart to the central vowel /ɨ/. The diphthongs, on the other hand, are much more akin to those found in Taos Tiwa. The front /ia/ tends to be realized as [iɛ], but may be as closed as [iɪ] or as open as [ia] in some contexts. The diphthong /ea/, realized as [eä], may actually be an allophone of /ia/, but does not seem to occur in a predictable environment. In either case, it occurs in only a few lexical morphemes. The diphthong /ia/ varies from [iɔ] to [œä]. Finally, the oral diphthong /oa/, which could also be phonemicized as /ua/, tends to be realized as a mid to centralizing transition [oɛ]. The nasal diphthongs are fairly well nasalized correlates to the oral ones, although it should be noted that all but /iɛ/ occur fairly rarely.

While the diphthongs are phonemically distinct from the monophthongs, a study of the phonotactic distribution does suggest a relationship between the sets of vowels. Namely, diphthongs are especially common in closed syllables (or in CVC stems, even if suffixation leads to the syllable being open). This will be made apparent in chapter 0 when examining the vowel correspondences. Because of the retention of the voiced stops before oral vowels, Southern Tiwa differs from the Northern Tiwa varieties in showing the same vowel nasality neutralization as Kiowa, Tewa, and Towa. In the same syllable as a nasal onset or coda, there is no contrast in nasalization on the vowels: they will always be nasalized. But, like the other Tiwa languages, there appears to be no contrasts in vowel length and all vowels may occur in either a closed or open syllable.
6.6.1.3 Southern Tiwa Tones

The tone system of Southern Tiwa is as poorly described as those of Picuris Tiwa and Taos, but without any of the phonological alternations that may at least serve as clues. Leap (1970b), which provides the only detailed description of phonology, presents a Trager-like analysis. It may thus be supposed that there is actually a three-tone system, as is the prevailing trend throughout the family, but the details and distribution of such tones are unknown. That phonemic tone probably does exist in the language is suggested not only by analogy with the other Kiowa-Tanoan languages and various comments in the literature, but also by comments from native Tiwa speakers. Speakers of Sandia Tiwa, for instance, note how much more “sing-songy” the Isleta dialect is, which indicates that whatever the details, there is tone in at least the Isleta dialect. From what I have heard, it is also present in Sandia Tiwa as well, even if speakers do not think it is as prominent. For the present dissertation, Southern Tiwa leaves us with a serious gap for the reconstruction of tone in Kiowa-Tanoan.

6.6.2 Southern Tiwa Phonotactics

All of the above consonants may occur in syllable onset position, but /r/ never appears word- or morpheme-initially in indigenous lexical items. Voiced stops are effectively only found as onsets before oral vowels, and thus are partly in complementary distribution with nasal stops (although they are still relatively infrequent). Possible syllable types in indigenous words are CV, CVC, and CVCC. Possible coda consonants

35 I have heard similar comments from Laguna Keres speakers regarding Acoma Keres, in terms of the latter being more “sing-songy”. This may mean that the typical pitch difference between high and low is greater in Isleta and Acoma than it is in Sandia and Laguna respectively. Or, it may just mean that one or two salient lexical items differ in tone in such a way to lead to a general impression of tonal prominence. It is hard to determine the exact significance of such speaker reports without further comparative data.
are /b, d, g, m, n, r, w, y/, the same set that is permissible in Taos Northern Tiwa, but substituting /r/ for /l/. In other words, the set consists of the voiced stops and the sonorants. As noted above, the voiced stops actually tend to be realized as voiceless fricatives, especially in word-final position. This seems to be even more prevalent in Sandia Tiwa than in Isleta Tiwa. These coda consonants are exemplified in (76).

(76) Southern Tiwa coda consonants (Leap 1970b; Frantz nd)

<table>
<thead>
<tr>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ʔad</td>
<td>chin</td>
</tr>
<tr>
<td>napab</td>
<td>flower</td>
</tr>
<tr>
<td>tiˈag</td>
<td>behind</td>
</tr>
<tr>
<td>nam</td>
<td>earth</td>
</tr>
</tbody>
</table>

The possible coda clusters are /nm, rm, ng, ym, wm/. In all such instances there is a morpheme boundary between the two consonants, thus it appears that such clusters are derived by the same means as the clusters of Taos Tiwa. There is no synchronic vowel elision process in Southern Tiwa as in Taos Northern Tiwa, but the cognates between the two languages suggest that there formerly was and that the vowels permanently elided at some point. These clusters are illustrated with the stative sentences in (77).

(77) ST coda clusters (Laylin 1988: 258; Frantz nd; Wycliffe 1981: 30; SIL n.d.: 11)

<table>
<thead>
<tr>
<th>Word</th>
<th>Meaning</th>
<th>Morphology</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>akˈɪnm</td>
<td>You are good.</td>
<td>2S.ITR=good-ST</td>
<td>You are good.</td>
</tr>
<tr>
<td>širm</td>
<td>It’s green.</td>
<td>3S.ITR=green-ST</td>
<td>It’s green.</td>
</tr>
<tr>
<td>xʷing</td>
<td>When s/he was standing.</td>
<td>3S.ITR=be.standing-SB.ST-when</td>
<td>When s/he was standing.</td>
</tr>
<tr>
<td>čiapiawm</td>
<td>3S.ITR=sleep-dead-ST</td>
<td>3S.ITR=sleep-dead-ST</td>
<td>S/he's asleep</td>
</tr>
<tr>
<td>innahirtaym</td>
<td>3S&gt;&gt;1S=NA=hurt-be.in-ST</td>
<td>3S&gt;&gt;1S=NA=hurt-be.in-ST</td>
<td>My feelings are hurt.</td>
</tr>
</tbody>
</table>

Because of the particular morphemes involves, these clusters appear to be predominantly or solely found in predicate constructions such as these stative clauses.
6.6.3 Southern Tiwa Phonological Alternations

Southern Tiwa seems to be the least complex of the Kiowa-Tanoan languages when it comes to phonological and morphophonological alternations. Morphology is all simply agglutinative and the more lexically specified patterns will be pointed out where appropriate in the following chapters. In particular, we see historical stem-final consonants emerging in passive constructions, which will be important for the reconstruction of consonants in chapter 10.

6.6.3.1 Southern Tiwa Number-Marking Suffix Allomorphy

As with Taos and Picuris Tiwa, the most complexity otherwise is seen with the noun class and number marking suffixes on nouns, but even in this area Southern Tiwa is simpler than its Northern sisters. For starters, the suffixes reflect only number and not noun class, -(i)de SINGULAR, -(n)į NON-SINGULAR, although this has no reflex in the phonology. There are some minor dialect differences in this area between Isleta and Sandia.

The singular suffix in Isleta is -de when added to a polysyllabic stem ending in a vowel (78)b and -ide when added to a monosyllabic stem ending in a vowel (78)a, and -ide after any stem ending in a consonant . Note that there are some vowel-final stems that take -de but have a stem form VV where the two vowels are identical (78)c. Such stems are few and reminiscent of the reduplicated vowels of Northern Tiwa, but seem to be lexicalized with the reduplicated vowel as part of the stem.
(78) Isleta Southern Tiwa singular suffix (Allen and Gardiner 1977: 58; Frantz n.d.)

a. ֐ū ֐ūide  child
    k'įja k'įjāide jackrabbit
    sian sianide man

b. ֐u’u ֐u’ude  baby
    liawra liawrade woman
    ɬu liulide old man

c. kha’a kha’ade  father
    te’e te’eide grandfather
    či’i či’ide grandmother

The singular suffix in Sandia consistently has the high front vocalic element. The suffix is -ide after a consonant and -iide after a monosyllabic vowel-final stem, as in Isleta, but is -yde after a vowel-final polysyllabic stem. Such allomorphy is illustrated in (79).

(79) Sandia Southern Tiwa singular suffix (Brandt 1970b)

kia kiayde mother
diru diruyde chicken
liwra liwrayde woman
ki’u kiyuyde ~ kiwiđe prairie dog

The non-singular suffix appears to be the same in both dialects. It is realized as -n after a polysyllabic stem ending in a vowel (80)c, -mnîn after a monosyllabic stem ending in a vowel (80)a, and -mn in after a consonant final stem (80)b.

(80) Southern Tiwa non-singular suffix (Allen and Gardiner 1977: 58; Frantz n.d.)

a. ֐u ֐umnîn children
    k’įja k’įjāmnîn jackrabbit

b. sian siannîn men
    khim khîmîn lions

c. diru dirun chicken
    kha’a kha’an fathers
As noted, aside from such basic allophony as is listed above (for the consonants) and the lexically specified morphophonology such as the passive verb stem construction and the verb stem-initial consonant ablaut, there does not seem to be much complexity to Southern Tiwa phonology yet attested.

6.6.3.2 Southern Tiwa Verb Stem-Initial Consonant Ablaut

With respect to ablaut, Southern Tiwa is very similar to the other Tiwa languages. However, the various sound changes that have differentiated the Northern and Southern varieties also affect some of the consonants involved in ablaut, given in (81).

(81) Southern Tiwa verb stem-initial consonant ablaut (Frantz n.d.)

<table>
<thead>
<tr>
<th>Basic form</th>
<th>~</th>
<th>Ablaut form</th>
</tr>
</thead>
<tbody>
<tr>
<td>p’ ~ p</td>
<td>?</td>
<td>k</td>
</tr>
<tr>
<td>t’ ~ t</td>
<td>h</td>
<td>kʰ / x</td>
</tr>
<tr>
<td>k’ ~ k</td>
<td>w</td>
<td>xʷ (and/or /hʷ/?)</td>
</tr>
<tr>
<td>č’ ~ š</td>
<td>č</td>
<td>š</td>
</tr>
<tr>
<td>m ~ p</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The ejective stops, nasal stop /m/, and the laryngeal consonants all show the same alternations as Taos and Picuris, notwithstanding that some speaker may produce an aspirated velar stop /kʰ/ where most have a fricative /x/. The spirantization of labiovelar stop /kʷ/ to /xʷ/ has meant that the two alternations involving the glide /w/ in Northern Tiwa have merged to one in Southern Tiwa. The change of plain affricate /č/ to a palato-alveolar fricative /š/ in Southern Tiwa (see chapter 0 below) means that there is a divergence in the ejective to plain obstruent alternation involving /č’: not only is the glottalization lost, but the affricate alternates with a fricative. On top of this, since the

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36 That is unless the /xʷ/ to /hʷ/ change suggested above is true, in which case there may still be a distinction in the ablaut alternation as well. The data available to me are currently unclear on this point.
cognate to Northern Tiwa /y/ is usually /č/ in Southern Tiwa, there is also another
affricate to fricative ablaut alternation. Exemplification of these ablaut phenomena is seen
in (82).

(82) Southern Tiwa ablaut constructions (Frantz n.d.)

\begin{itemize}
  \item[a.] inněšiač'awemiay
    \begin{itemize}
      \item in=něši-č'awemiay
    \end{itemize}
    3S>>1S=NA-walk,INC-imitate,INC-PST.PRG
    S/he was imitating my walk.

  \item[b.] tečiawe
    \begin{itemize}
      \item te=čia-we
    \end{itemize}
    1S.ITR=walk-PRS.PRG
    I'm walking.

  \item[c.] teđirukarbeawa
    \begin{itemize}
      \item te=diru-kar-beaw-a
    \end{itemize}
    1S.ITR=chicken-eat,INC-want-HAB
    I want to eat the chicken.

  \item[d.] teč'ip'axuk'arban
    \begin{itemize}
      \item te=č'i-p'axu-k'ar-ban
    \end{itemize}
    1S>3P=just-bread-eat-PST
    I just ate the bread.

  \item[e.] unākikam
    \begin{itemize}
      \item u=nā-ki-ka-m
    \end{itemize}
    3P=NA-clothing-wash,INC-ST
    The clothes are clean

  \item[f.] a'abañ
    \begin{itemize}
      \item a=a-ban
    \end{itemize}
    2S>3S=wash-PST
    Did you wash him/her/it?
\end{itemize}

The sentences in (82)a-b show the affricate – fricative palato-alveolar ablaut with
nominalization. The forms of (82)c-d illustrate the ejective – plain stop alternation with a
verb compounding construction. The verb words in (82)e-f give an instance of
stativization involving the /ˀ~ k/ ablaut alternation. Productivity and frequency of ablaut
seems to be slightly less than that found in the Northern Tiwa languages, but is still seen
in all of the major Kiowa-Tanoan morphosyntactic ablauting constructions.

\section{6.7 Towa}

Jemez Towa has the most divergent phonology of all of the Kiowa-Tanoan
languages. Not only have numerous sound changes altered the basic consonant
inventory—although the vowel inventory looks familiar—but there is also greater
complexity in terms of phonological alternations in the language. A combination of these
two factors has also led Towa to possess a larger consonant inventory than any of its
sisters, although many of these additional consonants have a very restricted morphophonological distribution. This section is based almost wholly on Yumitani (1998), but with some additional information taken from Sprott (1992) and Heins (1994).

6.7.1 Towa Segmental Inventory

6.7.1.1 Towa Consonants

The consonant inventory appears in Table 6-13.

Table 6-13: Towa Consonant Inventory

<table>
<thead>
<tr>
<th></th>
<th>Labial</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
<th>Labiovelar</th>
<th>Laryngeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiceless Stops</td>
<td>p</td>
<td>t</td>
<td>tʰ</td>
<td>k ~ kʰ</td>
<td>kʷ</td>
<td>?</td>
</tr>
<tr>
<td>Voiced Stops</td>
<td>b</td>
<td>d</td>
<td>g ~ gʰ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirated Stop</td>
<td>(tʰ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ejective Stops</td>
<td>p’</td>
<td>t’</td>
<td>k’ ~ kʰ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affricates</td>
<td>(čʰ, j)</td>
<td>(č’)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ejective Affricates</td>
<td>(č’)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiceless Fricatives</td>
<td>ɸ, (f)</td>
<td>s</td>
<td>ʃ</td>
<td></td>
<td>h, (h’y)</td>
<td></td>
</tr>
<tr>
<td>Voiced Fricatives</td>
<td>v</td>
<td>z</td>
<td></td>
<td></td>
<td>h</td>
<td></td>
</tr>
<tr>
<td>Voiceless Lateral Fricative</td>
<td>(l)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal Stops</td>
<td>m</td>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glottalized Nasal Stops</td>
<td>(m)</td>
<td>(n)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approximants</td>
<td>l, (r)</td>
<td>y</td>
<td>w</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glottalized Approximants</td>
<td>(l̊)</td>
<td>(ẙ)</td>
<td></td>
<td></td>
<td>(ẘ)</td>
<td></td>
</tr>
</tbody>
</table>

Traces of the recognizable Kiowa-Tanoan consonant pattern are still readily apparent: a four-way contrast in stops, the same basic set of sonorants (ignoring the ones in parentheses for the moment), and the same set of places of articulation. What are even more striking are the differences. Towa has only a single contrastive aspirated stop that is in restricted distribution, there are numerous fricatives as compared to the other three
branches of the family, and there are several consonants that appear only in special circumstances, most notably a glottalized counterpart to every approximant.

In terms of the stops, most of the voiceless, voiced, and ejective stops are comparable to those found in the other Kiowa-Tanoan languages. Towa does have a frequently occurring palatal stop /tʰ/, which is realized as IPA [c ~ kʲ]. The correspondences to this consonant are fricatives in all of the other languages, although it does appear to originate as a stop, as will be discussed in chapter 0. Something similar is actually true of labiovelar /kʷ/ as well, which is not cognate with the /kʷ/ of Tewa and Tiwa. The plain voiceless velar stop /k/ is always realized with a fair amount of aspiration, but since there is no actual contrastiveness for aspiration at the velar place of articulation, it is not assigned to the aspirated series, contra the practice of Yumitani (1998). There is variation amongst all of the velar stops between a mid-velar and a palatalized front velar articulation. There is not a phonemic contrast between the pronunciations, but they are also not fully predictable, with some amount of morphological determination to their realization and a good deal of speaker variation. It appears to be a fully synchronic issue within Towa phonology and will play only a minimal role in the diachronic analysis of this dissertation, mostly affecting the realization of some vowels (see phonological alternations in section 6.7.3 below).

The rest of the unmarked consonants not in parentheses are straightforward enough in their phonetic articulation. Perhaps the most curious consonants in Kiowa-Tanoan context are the voiced fricatives. The laryngeal fricative /ɦ/ is more notable for its effects in the morphophonology where it contrasts with /ʔ/ and /h/ than for any distinctive

37 Also, as will be seen, this consonant corresponds to unaspirated stops in the other Kiowa-Tanoan languages.
articulation. Indeed, none of Sprott (1993), Heins (1994), or Yumitani (1998), who were the first to identify this as distinctive segment in print, give adequate description of its phonetic realization.\(^{38}\) Towa is the only language in the family to have a fully phonemic voiced labiodental fricative /\(v/\) and joins only Kiowa in possessing a voiced alveolar fricative /\(z/\). In its unmarked sonorant inventory, Towa looks just like Northern Tiwa and Arizona Tewa, possessing two nasals, a lateral, and two glides.

It is perhaps those restricted consonants given in parentheses that are most interesting in synchronic Towa phonology. The consonants /\(f, r/\) and non-derived instances of /\(\text{č}^{h}/\) appear only in Spanish and English loanwords and will not be further considered here. The consonant /\(h^{y}/\) is limited to a couple of grammaticalized morphemes where it freely varies in pronunciation with /\(h/\) but behaves like /\(k \sim k^{y}/\) with respect to morphophonology (more on this below). The rest of the marked consonants are produced by one of a small number of regular (morpho)phonological processes. The glottalized sonorants occur in the onset of the last syllable of a word which contains a short vowel and phonemically falling tone. The consonants /\(t^{h}, \text{č}^{h}, j, \text{č}^{\prime}, \text{l}, \text{l}/\) occur only\(^{39}\) as a result of morphophonological fusion processes when a would-be coda consonant abuts a following onset consonant. Both the glottalization and the two fusion processes will be further described below along with other phonological alternations.

\(^{38}\) Laurel Watkins (personal communication) reports that the realization of this consonant for the speakers she worked with was a very brief rise in pitch on the following vowel.

\(^{39}\) As noted though, /\(\text{č}^{h}/\) also occurs in non-derived contexts in loanwords from Spanish and /\(\text{l}/\) also occurs by the sonorant glottalization process. The other of these consonants occur only in these fusion environments. Note too below that these fusion processes also result in other consonants that are otherwise fully phonemic within the language.
6.7.1.2 Towa Vowels

It will be seen in upcoming chapters that vowel correspondences between Towa and its sister languages are distinctive and illustrate quite a bit of historical shift. Despite that, Towa’s basic inventory of vowels is quite similar to those inventories seen in Tewa and Kiowa. Table 6-14 shows these vowels.

Table 6-14: Towa Vowel Inventory

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Front</td>
<td>Back</td>
</tr>
<tr>
<td>High</td>
<td>i, ɨ́</td>
<td>i, ɨ́</td>
</tr>
<tr>
<td>Mid</td>
<td>e, ɨ́</td>
<td>o, ʊ́</td>
</tr>
<tr>
<td>Low</td>
<td>æ, ǽ</td>
<td>æ, ǽ</td>
</tr>
</tbody>
</table>

Like in Kiowa and the Tewa languages, there is a vowel length contrast as well as the contrast in vowel nasalization. There is also only a front-back distinction with no central vowel. The vowel qualities require only minimal comment. The mid vowels tend to be pronounced as diphthongs [eɪ] and [oʊ] respectively, especially when long. The low front vowel /æ/ ranges from a low [ɛ] to as low as [a] when following voiceless /p, ɸ, t/, but is most usually realized in the [æ] range. The low back vowel /ɑ/ is frequently pronounced with a bit of rounding as [ɒ] and may diphthongize to [ɒɪ] when the following syllable contains a high front vowel. The high back vowel /ɨ/ is basically realized as [ɯ] to [ɨ], but may be somewhat rounded to [u] or [ʉ] following the labial consonants /ɸ, w/ in particular.40

There are fewer nasal vowels than there are oral vowels. The nasal correlate to the mid front vowel /e/ is entirely absent in the language while it appears that the uncommon

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40 Also, it should be remarked that the /ɨ/ in Towa is not comparable to or cognate with the /ɨ/ found in the Tiwa languages. In the latter, it patterns as a central vowel and contrasts with a high back (rounded) vowel. In Towa, on the other hand, it patterns as a high back vowel.
[q, qˑ] occur overwhelmingly by a process of nasal spreading and can scarcely be considered phonemic (but see Part III, where it is phonemic in some pronominal proclitics). Bell and Heins (1993) report in an unpublished paper that the nasal vowels may actually be higher than their oral counterparts, contra universal tendencies, but I have not been able to evaluate this paper yet to substantiate the claim. Also, when followed by a consonant, especially within a phonological word, nasal vowels tend to produce a nasal consonant occlusion homorganic to the following consonant. Heins (1994) evaluates this more as prenasalization of the consonant than as some kind of nasal consonant insertion. It has no pervasive phonological effects that I know of, so I effectively go with her analysis on this, seeing the nasal stop closure as simply a coarticulatory effect.

6.7.1.3 Towa Tones

The tone inventory by this point is the quite familiar system of three tones: high, falling, and low, which will be transcribed in the same way as in the other languages. There is also a mid tone, which will be marked by a macron accent [˘], but this has been well argued in Bell (1993) and Yumitani (1998) to be a predictable allophone of the falling tone. The high and low tones are realized as relatively level pitches, as is the mid tone realization of falling. The pronunciation of falling tone—outside of the distribution of the mid tone allophone—depends on vowel length. On a short vowel, the fall is realized as a sharp drop from a high pitch level. On a long vowel that is not word-final, falling tone is realized as a gradual fall from high pitch across the vowel. A word-final long vowel bearing falling tone, however, will be realized with a glottal “break”,

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appearing as a \textit{V} \textit{V} sequence. The post-glottal part of the vowel is always realized as low, but the pre-glottal part will be high, mid, or low depending on the previous vowels (as described shortly below).

This inventory requires further elaboration, however. Towa is much like Kiowa in having prevalent restrictions on the distribution of its tones. Like in Kiowa, the only exclusively low tone words, including monosyllabic and disyllabic morphemes, are the pronominal proclitics and a small number of grammaticalized elements that probably tend to cliticize to an adjacent word. In other words effectively all (phonological) words must bear at least one high or falling tone, including all monosyllabic words (83)a. Towa here shows a further restriction not seen in Kiowa. The first syllable of an indigenous polysyllabic lexical stem must bear high (83)b or falling (83)c tone. That is, a phonological word with a low-high or low-falling sequence is not permitted\textsuperscript{41}. While sequences of high tone are permitted (83)d, no high tone can follow a falling tone and once there has been a drop to low, there can never be a rise back to the high pitch level.

(83) Towa pitch accent (Yumitani 1998: 29-32)

- a. \textit{φι} sore \textit{φι} buckskin \textit{φι} governor \textit{φι} smoking
  \textit{τά} three \textit{τά} hoe \textit{τά} flesh

- b. \textit{wáhae} skin \textit{dá·hi} be dark \textit{bídæ} jackrabbit
  \textit{děli} chicken \textit{mǐ·tī} six

- c. \textit{vē·la} old man \textit{tēle} shoot (PF)
  \textit{hō·li} pollen \textit{ʔē·wē} shoulder

\textsuperscript{41} Spanish loanwords are an exception to this where the penultimate or ultimate non-initial stress is reinterpreted as high tone. Yumitani (1998) also reports a single indigenous word with a low-high tone sequence, \textit{ešē} \textit{midwife}. An explanation for this exception is not yet available. It may be a borrowing from another indigenous language or it may have some historical morphological composition that would explain the tone pattern, e.g. a pronominal proclitic \textit{e=} plus verb \textit{sē}. Laurel Watkins (personal communication) shares this latter suspicion.
A falling tone is only ever realized as falling in stem-initial position. On a monosyllabic word with a long vowel, the V\textsuperscript{V} realization mentioned above bears a high pitch on the first part of the vowel and a low on the second (84)a. Falling is realized as a mid tone only on a short vowel when a) it follows another falling tone; or, b) it is in word-final position on a short vowel (84)b. The mid tone realization never appears word-internally when following a low or high tone.

(84) Towa falling tone allophones (Yumitani 1998: 38-40)

a. \textipa{hæ̂ˑæ} corn husk \textipa{[hæ̂æ]}  
\textipa{s̄îˑɪ} rain \textipa{[s̄îɪ]}

b. \textipa{p̄îˑɪ} apple \textipa{h̄âˑs̄e} bite (\textit{PASS.PF}) \textipa{h̄ôˑbīˑe} knee
\textipa{φ̄ûˑt̄’īˑta} tadpole \textipa{p̄âˑt̄’ūˑbi} asparagus

In a polysyllabic word that ends in a long vowel with a lexical falling tone, the resulting V\textsuperscript{V} sequence is realized with a low pitch on both halves of the “broken” vowel when it follows a high or low tone (85)a. The first half of the vowel will bear a mid tone only when it immediately follows a falling tone (85)b.

(85) Towa non-initial falling tone (Yumitani 1998: 82-83)

a. \textipa{b̄īˑd̄âˑe} jackrabbit \textipa{[b̄īˑd̄âˑe]}
\textipa{t̄ēˑp̄’k̓̄ῳ̂ˑa} I put down a drum \textipa{[t̄ēˑp̄’k̓̄ῳ̂ˑa]}

b. \textipa{k̓̄ēˑp̓’ôˑ走} planting corn \textipa{[k̓̄ēˑp̓’ôˑ走]}
\textipa{t̄ēˑf̄âˑe} match \textipa{[c̄ēˑf̄âˑe]}

The above patterns are generalizable across the phonology. There are of course other (morpho)phonological alternations that affect tone, just as in Kiowa. The most important of these is that in a compound, only the first stem will show any high or falling
tone. That is, any lexical high tones on a stem will drop to low if it is the second stem in a compound, as illustrated in the compounds in (86).

(86) Towa compound tone patterns (Yumitani 1998: 36)

<table>
<thead>
<tr>
<th>Stem</th>
<th>Meaning</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>ṭáːti</td>
<td>toilet</td>
<td>(&lt; ṭáː-tí excrement-dwelling)</td>
</tr>
<tr>
<td>méːsáti</td>
<td>church</td>
<td>(&lt; méːsáːtí mass-dwelling)</td>
</tr>
<tr>
<td>kṝádaːbæ</td>
<td>cradle</td>
<td>(&lt; kṝá-dá bæ child-board)</td>
</tr>
<tr>
<td>šílábela</td>
<td>corn tortilla</td>
<td>(&lt; šílá-bélá round-bread)</td>
</tr>
</tbody>
</table>

In noun incorporation constructions, this tone lowering goes even farther, dropping all tones to low except for the initial syllable of the leftmost root of the compound. That is, even if the first stem bears a high-high tone sequence when by itself or in other compounds, it will bear a high-low sequence when it is an incorporated noun, as can be seen in (87).

(87) Towa noun incorporation tone (Yumitani 1998: 42-43)

<table>
<thead>
<tr>
<th>a.</th>
<th>b.</th>
</tr>
</thead>
<tbody>
<tr>
<td>tibélāyeṭé</td>
<td>taφélafi</td>
</tr>
<tr>
<td>til=béla-yeṭé</td>
<td>ta=φelá-hí</td>
</tr>
<tr>
<td>1S&gt;3P=bread-throw.PF</td>
<td>1S&gt;3S=bear-kill.PF</td>
</tr>
</tbody>
</table>

I threw bread. I killed a bear.

There is one exceptional structure to these lowering patterns. If the rightmost stem of a compound is monosyllabic and has a short vowel with a high tone, it will retain its high tone following a root that also ends in a high tone (88)a. That is, the compound will bear a (H)HH tone sequence rather than the otherwise expected (H)HL sequence. There do also appear to be compounds with disyllabic second members that do not lower their high tones (88)b.

(88) Towa monosyllables in compounds (Yumitani 1998: 36-37)

<table>
<thead>
<tr>
<th>a.</th>
<th>b.</th>
</tr>
</thead>
<tbody>
<tr>
<td>kṝá:kṝí</td>
<td>(kṝá:-kí sheep-child)</td>
</tr>
<tr>
<td>sáːtó</td>
<td>(sáː:-tó awake-become.PF)</td>
</tr>
<tr>
<td>tapēmį</td>
<td>(tā=pei-mį 1S&gt;3S=sun-see.PF)</td>
</tr>
</tbody>
</table>

1S>3P=bread-throw.PF 1S>3S=bear-kill.PF
I threw bread. I killed a bear.

There is one exceptional structure to these lowering patterns. If the rightmost stem of a compound is monosyllabic and has a short vowel with a high tone, it will retain its high tone following a root that also ends in a high tone (88)a. That is, the compound will bear a (H)HH tone sequence rather than the otherwise expected (H)HL sequence. There do also appear to be compounds with disyllabic second members that do not lower their high tones (88)b.
b. **kóφúlé** knot  
(< **kó-φúlé** small-patch)

There are also some curious tone effects associated with particular morphemes, which will largely be put aside in this work. It will also be seen in Part III that the pronominal proclitics of Towa always bear low tone, but given the tone accent patterns and the suggested tendency for the proclitics to attach to the word to their left, this could be expected.

### 6.7.2 Towa Phonotactics

The phonotactic patterns of the segmental phonology of Towa have some striking features in Kiowa-Tanoan context. Towa effectively only permits CV(ˑ) syllable structures, an innovation given the frequent CVC morphemes and structures of the family. Thus, all of the above consonants in Table 6-13 necessarily occur in syllable onset position. All may also occur in morphological word-initial position except for /l/ and those consonants that occur only in morphophonologically derived environments, i.e. the glottalized sonorants and /tʰ, j, č', l/, while /čʰ/ is only word-initial in Spanish loanwords. Consonant-final morphemes do occur, but the consonant does not appear except in constructions in which it can be assigned as syllable onset. These will be discussed with the phonological alternations below.

Actually, two coda consonants are ostensibly possible: /l/ and /š/. The fricative /š/ occurs only as coda in the inverse suffix -š but there are numerous morphemes, including several grammatical morphemes with a final /l/. Examples of words with such codas are given in (89).
Towa coda consonants (Yumitani 1998; Sprott 1992)

\[
\begin{align*}
[\phi \sim \phi\tilde{s}] & \quad \text{buttocks} (t) & [\phi\tilde{\iota} \sim \phi\tilde{\iota}\tilde{s}] & \quad \text{cottontail rabbits} (t) \\
[h\tilde{\iota} \sim h\tilde{\iota}\tilde{l}] & \quad \text{eight} & [w\tilde{i} \sim w\tilde{i}\tilde{l}] & \quad \text{four}
\end{align*}
\]

However, the distribution of these instances as codas is severely restricted. They may never occur as codas word-externally and will resyllabify as onsets whenever possible when phrase internal. Some of the most striking phonological alternations below involve the resolution of these would-be coda consonants. When these consonants cannot undergo such alternations or resyllabification, they tend not to be realized at all, i.e. they are elided. It appears that they only really appear in coda position when at the end of some kind of (phonological) phrase or utterance-finally, although more detailed phonological analysis is needed to more accurately identify their occurrence.

### 6.7.3 Towa Phonological Alternations

Given the phonotactic constraints above, Jemez Towa shows the greatest complexity in (morpho)phonological alternations of all of the Kiowa-Tanoan languages. Some of these alternations have been alluded to above, and while some are only relevant to Towa synchronically, others will provide clues towards the reconstruction of Kiowa-Tanoan phonology. This overview of some of the more important alternations will proceed roughly from the most generalizable across the phonology to the more morphophonologically limited.

#### 6.7.3.1 Towa Nasalization

The restrictions on nasalization mentioned for all of the Tanoan languages above is at its most productively apparent in Towa with morphological structures showing
alternations between voiced stops and nasal stops based on surrounding nasal vowels (in addition to the nasalization of vowels adjacent to nasal consonants). One of the causal factors of this alternation is a productive process of nasal spreading. A nasal vowel in one syllable will cause the vowel in the syllable to the right to also become nasalized, unless that vowel is /æ/\(^{42}\). This is the primary means by which nasal /ɑ̨/ occurs in the language (90)a. When this nasal spreading affects a syllable that otherwise has a voiced stop onset /b, d/, the stop will also nasalize (90)b.

(90) Towa nasal spread (Yumitani 1998: 50-54)
   a. [ʔɛwɛ] you (S) (< ʔɛwá) [sqqa] 1D>3t (< sqpa=)
   b. ʔɔ̀ nq feet (P) (< ʔɔ́ da) sǐ́ màṣa stop (PASS.IPF) (< sǐ́ bàṣa)

This nasalization never occurs across morphological boundaries in compounds. Also, the voiced stop will only nasalize if it is tautomorphemic with the preceding nasal(ized) vowel. The following vowel (affected by nasal spreading) may belong to the same morpheme or may be a vocalic suffix.

6.7.3.2 Towa Palatalization and Vowel Fronting and Raising

Another fairly generalizable feature of the language, even if the details are not yet fully resolved, is the palatalization of velar stops mentioned above. Insofar as anything can be determined as yet, the palatalized allophone seems to be preferred for most lexical items when the velar is stem-initial, i.e. as the onset of the accented syllable. There is still some speaker variation in this (91)b and some stems seem never to be palatalized (91)a.

\(^{42}\) This is an odd constraint given that phonemic nasal /æ/ is not at all uncommon in the language.
Towa non-palatalized velars (Yumitani 1998: 63-68)

a. kó / kóle small
kô le cabbage
gísenq kitchen

b. wá:keji ~ wá:keji plains
ik'æni ~ ik'æni I am tired
jkišó k'æ'e ~ jkišó k'æ'e my son

The most predictable distribution of the depalatalized velar allophones that has so far been discovered is actually morphologically determined. When a velar-initial stem occurs with the dative clitics43 (see chapter 0), the velar tends to lack palatalization, as contrasted in (92)a-b. This applies to a velar-initial verb stem even when it is not immediately adjacent to the clitic, but applies less consistently to a velar-initial incorporated noun, as illustrated in (92)c-d.


a. ni' ík'ýá
ni' =k'á
1S 1S.iltr=be.lying.S/D.ST
I'm lying down.

b. ni' jk'á
ni' =k'á
1S 3S>>1S=be.lying.S/D.ST
I have it.

c. ok'æni k'æ'e
q=-kæni-k'á=æ'e
3S>>3S=dog-be.lying.S/D.ST=REL
his/her dog

d. jkišók'æ'e ~ jkišók'æ'e
j=kišó-k'á=æ'e
3S>>1S=son-be.lying.S/D.ST=REL
my son

While the distribution of the palatalization is not entirely certain, there is another phonological alternation that depends on it. The high back vowel /i/ and its nasal counterpart /į/ are fronted to /i/ and /į/ respectively when following the palatal consonants /v, ŝ, čʰ, č', j, y/ or the palatalized allophones of the velar stops /k'v, k'y, g'y/. This applies only when the consonant and vowel are parts of the same morpheme, which can be seen

43 Note that all of the dative clitics have the potential to end in /l/, or in other words, are accompanied by the L-Effect described below.
in (93)a-b. For stems with the velar stops, this means that there will be an alternation in
the vowel as well as the consonant under the different (de)palatalization conditions,
shown in (93)c-d.

(93) Towa high back vowel fronting (Yumitani 1998: 79-80)

a. \textit{t\={i}}
\begin{align*}
\emptyset &= \textit{t\={i}} \\
3\math{=} &= \textit{fall.P.PF} \\
\text{They (inan.) fell off (individually).} \\
\end{align*}

b. \textit{it\={i}}
\begin{align*}
\textit{il-t\={i}} &= 3\math{=} \textit{fall.P.PF} \\
\text{They (inan.) fell off (together).} \\
\end{align*}

c. \textit{\=k'\={i}'a\={e}}
\begin{align*}
\text{i=} &= \textit{k'\={i}'-k'\={u}=e} \\
3\math{>>}1\math{=} &= \text{child-be.lying.S/D.ST=REL} \\
\text{my child} &
\end{align*}

d. \textit{\=j\={e}k'a\={e}s}
\begin{align*}
\text{j=} &= \textit{l-k'\={i}'-k'\={u}=e-s} \\
3\math{>>}1\math{=} &= \text{child-be.lying.S/D.ST=REL-I} \\
\text{my (D) children} &
\end{align*}

This kind of alternation between otherwise phonemic vowels is also found in
other areas, where it leads to morphological distinctions. When a stem-final /a/ is
followed by the inverse suffix -\=s, the vowel is fronted to [æ], exemplified by the words in
(94)a. There are some exceptional words that end in /a/ but do not front the vowel when
followed by the inverse (94)b.

(94) Towa inverse /a/ fronting (Yumitani 1998: 81, 114)

a. \textit{v\={e}la\=s} \textit{men} \textit{(< v\={e}la\=s man-i})
\begin{align*}
\textit{f\=e\=la\=s} &= \textit{bears} \textit{(< f\=e\=la\=s bear-i}) \\
\textit{t\=e\=tib\=e\=s} &= \textit{box} \textit{(< t\=e\=tib\=e\=s boxes-i}) \\
\end{align*}

b. \textit{f\=o\=wa\=s} \textit{kiva} \textit{(< f\=o\=wa\=s kiva-i})
\begin{align*}
\textit{m\=a\=t\=u\=a\=s} &= \textit{thumb} \textit{(< m\=a\=t\=u\=a\=s thumb-i}) \\
\textit{w\=a\=p\=a\=s} &= \textit{cattail} \textit{(< w\=a\=p\=a\=s cattail-i}) \\
\end{align*}

Given that the inverse suffix itself is often elided, this vowel shift does serve to leave the
inverse form overtly marked. While this vowel shift is morphologically restricted, it does
appear to have phonological motivation: the inverse suffix simply provides the only
context for a palatal consonant in a coda position to cause the fronting of the preceding
vowel. This phonological motivation is supported by another vowel shift. When a short vowel /æ/ is in an unstressed syllable (i.e. not stem-initial) that is either word-final or precedes /š/ and it follows a palatalized consonant /v, kʰ, gʰ, šʰ/ or one of the glides /y, w/, the vowel raises to [e]. Note that this raising also applies to the [æ] produced by fronting the final /a/ in the inverse as above. This vowel raising is seen in the words in (95).

(95)  Towa low front vowel raising (Yumitani 1998: 77-79)

<table>
<thead>
<tr>
<th>Word</th>
<th>Meaning</th>
<th>Morphology</th>
</tr>
</thead>
<tbody>
<tr>
<td>kʰų-wä́</td>
<td>lay down (S/D)</td>
<td>(&lt;kʰų-wä́)</td>
</tr>
<tr>
<td>wá-géšeš</td>
<td>cows</td>
<td>(&lt;wá-gäša-š cow-I)</td>
</tr>
<tr>
<td>ˀó-wëš</td>
<td>women</td>
<td>(&lt;ʼó-wá-š woman-I)</td>
</tr>
<tr>
<td>tó-tëš</td>
<td>buffaloes</td>
<td>(&lt;tó-ta-š buffalo-I)</td>
</tr>
</tbody>
</table>

The vowel shifts go even further than this. When a short /e/ in an unstressed syllable follows a palatalized consonant /v, kʰ, kʰ', gʰ, č', j, š/ or one of the nasal consonants /m, n/, it is raised to /i/ (and nasalized following the nasal consonants), as illustrated in (96).

(96)  Towa /e/-raising (Yumitani 1998: 74-77)

<table>
<thead>
<tr>
<th>Word</th>
<th>Meaning</th>
<th>Morphology</th>
</tr>
</thead>
<tbody>
<tr>
<td>[dô-šikʷí]</td>
<td>They (P) are standing.</td>
<td>(&lt;dô-š e=kʷí that-1 3l.Itr=be.standing.st)</td>
</tr>
<tr>
<td>ˀó wët̍imj̍</td>
<td>I saw women (P).</td>
<td>(&lt;ʼó wá-š te=mj̍ woman-1 1S&gt;3l=see.PF)</td>
</tr>
<tr>
<td>šimj̍</td>
<td>stop (PF)</td>
<td>(&lt;šįb-è stop-PF)</td>
</tr>
</tbody>
</table>

While I am unaware of any instances where a morpheme shows a direct /a ~ i/ alternation as a result of this sequence of synchronic vowel shifts, it does tell us that about such relationships as [a ~ æ ~ e ~ i]. This will prove useful in interpreting vowel correspondences in chapter 0.

---

44 The other palatal or palatalized consonants tend not to occur in such a position in the word and so an alternation with them is simply unattested. It is perfectly possible that they too would lead to such raising.

45 This alternation is also attested in a stressed syllable where the vowel bears a high tone, but not with a vowel bearing a falling tone. More is probably going on in such rare cases.
Another vowel shift found in the modern language is also worth noting in this context. When a verb stem-final front vowel /e, æ/ is unstressed (i.e. not stem-initial and thus not a monosyllabic verb stem), it is lowered and backed to [a] when immediately followed by one of the subordinating enclitics -e RELATIVIZER (97)a or -æ TEMPORO-CONDITIONAL (97)b.

(97) Towa morphophonological low vowel backing (Yumitani 1998: 238)

a. \( ìk\acute{\text{i}}m\acute{\text{a}}\acute{\text{t}}\acute{\text{v}}\text{æ} \)
   \( \text{i=}k\acute{\text{i}}m\acute{\text{a}}\acute{\text{t}}\acute{\text{v}}\text{æ}=\text{e} \)
   1S.\text{itr}=\text{buy pf rel}  

   \( \text{that I bought} \)

b. \( ìh\acute{\text{a}}\text{s}æ\text{æ} \)
   \( \text{i=}h\acute{\text{a}}\text{s}æ=\text{æ} \)
   1S.\text{itr}=\text{bite pass pf cond} 

   \( \text{when I was bitten} \)

This apparent dissimilation applies even when a coda /l/ resurfaces (with L-Effect) as onset of the enclitic syllable.

6.7.3.3 Towa Tonal Alternations and Laryngealization

The enclitics of the previous section have another idiosyncratic effect on the preceding syllable. When one of them is attached to a disyllabic verb stem that otherwise bears a HH tone sequence, the tone of the second syllable of the stem is lowered to low. The enclitic is also thence low following the regular pitch accent patterns, as can be seen in (98).

(98) Towa pre-enclitic vowel lowering (Yumitani 1998: 43)

a. \( òt\acute{\text{ë}}\text{ê}æ \)
   \( q=t\acute{\text{ë}}\text{ê}æ=qæ \)
   2S>3S=\text{eat pf cond} 

   \( \text{if you eat it} \)

b. \( òt\acute{\text{ê}}\text{ê}ò\text{ê}æ \)
   \( q=l-s\acute{\text{ê}}\text{ê}ò=qæ \)
   3>3S=RFL-\text{wakeup pf cond} 

   \( \text{when s/he woke up} \)

---

\[46\] Yumitani (1998) assigns a high tone to both of these enclitics, but given their position at the end of the morphological and phonological (verb) word, they will more often than not be realized with low tone. Considering the tonal effects also affiliated with these enclitics—see next phonological alternation—I will leave their tones unspecified for now.
There are some few other phonological alternations that appear to be related to tone but with repercussions to the segmental phonology as well. The realization of word-final long vowels with falling tone, as a laryngealized V\textsuperscript{♭}V sequence, has already been described above. Both Sprott (1993: 25) and Yumitani (1998: 82) also note that a long vowel with a high tone in word-final position will often be realized as a short vowel, especially when it stands utterance finally, shown in the sentences in (99).

(99) Towa vowel shortening (Yumitani 1998: 81-82; Sprott 1992: 25-26)

\begin{align*}
\text{a.} & \quad \text{tepó pæ} \\
& \quad \text{te=pó -pæ} \\
& \quad 1S>3I=\text{drum-make.PF} \\
& \quad I \text{ made a drum.}
\end{align*}

\begin{align*}
\text{b.} & \quad \text{gí bæ šæ} \\
& \quad \text{gi bæ ů=šæ} \\
& \quad 3S.ITR=\text{be.set.P.ST} \\
& \quad \text{The jars are here.}
\end{align*}

However, there does seem to be some lexical specification on this shortening, the determining factors not yet having been discovered\textsuperscript{47}.

Another tonally determined allophonic feature is the laryngealization of sonorants already mentioned above. When a word-final short vowel bears falling tone—lowered to mid tone by the factors described above—a sonorant onset to that syllable will become glottalized, as in the words in (100). This never affects monosyllabic words, i.e. the affected syllable must also be unstressed. Also, there never appears to be any actual alternation between mid and falling tones in these cases. Yumitani’s analysis is by analogy with the alternation behavior of falling tone in compounds\textsuperscript{48}.

\textsuperscript{47} Laurel Watkins (personal communication) reports similar utterance-final shortening in Kiowa. Such vowels are always realized as long, however, when morphology is added.

\textsuperscript{48} Thanks to Laurel Watkins for pointing this out.
Towa sonorant glottalization (Yumitani 1998: 54-57; Sprott 1992: 19-20)

\[
\begin{align*}
\text{hæ ɪ̯æ} & \quad \text{sweat (PF)} \quad (\text{< hæ ɪ̯æ}) \\
\text{k vérë} & \quad \text{dog} \quad (\text{< kënrë}) \\
\text{ʔěwē} & \quad \text{shoulder} \quad (\text{< ʔěwē}) \\
\text{séyĩ} & \quad \text{bird} \quad (\text{< séyĩ})
\end{align*}
\]

That this glottalization is phonologically determined and not simply a lexical feature is observed by the fact that those morphemes with glottalized sonorants will lose the glottalization when the affected syllable is not word final. For example, in a compound—including a noun incorporation construction—the stem with the sonorant does not glottalize that sonorant and non-initial tones follow the appropriate lowering process when in word-internal position, as in (101).

(101) Towa non-glottalized sonorant (Yumitani 1998: 54-57; Sprott 1992: 19-20)

\[
\begin{align*}
\text{a. epak'ěn̂jha·sē} & \quad \text{b. todélīha} \\
\text{epa=kën̂-hú sē} & \quad \text{t̂ō=délī-hú} \\
3p>3i=dog-bite.PF & \quad 1s>3s>3s=chicken-bake.PF \\
They bit the dogs. & \quad I baked a chicken for him/her.
\end{align*}
\]

Under morphologically restricted conditions, such laryngealization can also affect oral stops. In verb stems a segment realized as a voiced stop /b, d/ under other phonological conditions is glottalized to an ejective /p', t'/ when it is the onset of a word-final syllable that contains a short vowel with a falling tone (which is always lowered to mid tone by the usual process). Such verbs are given in (102).

(102) Towa stop glottalization (Yumitani 1998: 54-57)

\[
\begin{align*}
\text{k'ěp̂'ē} & \quad \text{stand up (PF)} \quad (\text{< k'ěbē}) \\
\text{zít'ē} & \quad \text{drop (PASS.PF)} \quad (\text{< zīdē})
\end{align*}
\]

This alternation between voiced and ejective stops is also seen in some of the demonstratives, although the tonal conditions appear to differ (103).

451
Towa demonstratives with glottalization (Yumitani 1998: 54-57)

\[ \text{ń̥ˑt'æ} \text{ this (I)} \quad \text{ń̥ˑdæ} \text{ this (BAS)} \]
\[ \text{fí̥ˑt'æ} \text{ this (I)} \quad \text{fí̥ˑdæ} \text{ this (BAS)} \]
\[ \text{ń̥ˑt'æ} \text{ that (I)} \quad \text{ń̥ˑ} \text{ that (BAS.P)} \]

This glottalization of obstruents does not seem to apply as a productive phonological rule.

The above glottalization alternation is the only way by which most of the glottalized sonorants occur in the language. It will be seen below that /̃/ also occurs under the L-Effect and there seems to be one other morphophonological environment in which /̃/ occurs. When a vowel-final root is compounded to the left of a root with a laryngeal onset /ˀ/, /fi/ (but not /h/, apparently) and both roots contain the same vowel quality, an epenthetic /y/ is inserted and fuses with the laryngeal. With /fi/, this simply produces a [y], but with /ˀ/ a glottalized glide [ỹ] is derived, as seen in (104).

(104) Towa /y/-insertion (Yumitani 1998: 62-63)

\[ \text{wúˑyú} \text{ drag (PF)} \quad (<\text{wúˑ-fiú} \text{ drag-carry PF}) \]
\[ \text{hỗyo} \text{ get sick (PF)} \quad (<\text{hỗ-ô} \text{ sick-become PF}) \]

This process applies only within compounds and never between a lexical stem and an affix or between two affixes.

6.7.3.4 **Towa Syllabification**

The last few generalizable phonological alternations (as opposed to a few remaining morphologically restricted processes that will be described below) all involve the resyllabification and the resolution of potential coda consonants. Whenever a consonant-final morpheme is followed by a vowel-initial morpheme, that final consonant will resyllabify as the onset of the vowel-initial element. This is true of consonant-final morphemes that virtually always take some kind of suffix, e.g. verbs, and if there is no
vowel-initial suffix, the consonant will simply not be realized, as illustrated by

contrasting the forms on the left with those on the right in (105). (See also discussion of

morphophonology of inverse nominal forms below.)


\[
\begin{align*}
\text{\t\t}\tilde{\text{i}}\text{m} \hat{i} & \quad \text{tell (POT)} & (< \tilde{\text{i}}\text{b-} \hat{\text{e}}) & \quad \text{cf.} & \quad \text{i} & \quad \text{tell (PF)} \\
\text{z} \wedge \text{w} \text{a} \hat{i} & \quad \text{lift (IPF)} & (< \text{z} \wedge \text{w-a} \hat{i}) & \quad \text{cf.} & \quad \text{z} \wedge \text{ lift (PF)} \\
\text{k} \wedge \text{i} \text{n} \hat{i} \hat{\text{s}} & \quad \text{wind (i)} & (< \text{k} \wedge \text{i} \text{n-} \hat{\text{e}} \text{-} \hat{\text{s}}) & \quad \text{cf.} & \quad \text{k} \wedge \text{ winds}
\end{align*}
\]

It is also true of those morpheme- and word-final consonants /š, l/ that can be realized as

actual utterance-final consonants. Where no morphological suffixation is involved, such

resyllabification applies when these consonants are followed by a vowel-initial

pronominal proclitic morphologically bound to the following verb word (106)a or by one

of a small number of particles (106)b.


a. \(\text{dō} \hat{i} \text{š} \hat{\text{i}}\)
\(\text{k} \wedge \text{i}\)
that-I 3.I.TR=be.standing.ST
b. \(\text{n} \hat{i} \text{ ơli} \text{ wóhom} \hat{i}\)
\(\text{dō} \hat{i} \text{-š} \hat{\text{i}}\)
\(\text{g=k} \wedge \text{i}\)
\(\text{1S  also 1S.I.TR=happy-feel.ST}\)

They (pl.) are standing. I am also happy.

Yumitani (1998) describes the consonant as joining to the right, thus becoming the onset

of the otherwise vowel-initial word. However, by the analysis of Towa by Reagan (1903)

(as woefully inaccurate as it otherwise is\(^\text{49}\)), by the tonal features of the pronominal

proclitics, and by the sound correspondences between the proclitics of Towa and the

other languages, the vowel-initial elements actually seem to be pulled onto the

phonological unit to their left. That means that the resyllabified consonant is internal to

\(^{49}\) Reagan misses the fact that pronominal indexation on verbs exists in the language at all. Instead, he
analyzes various “euphonious” terminations to nouns and adjectives (but importantly not to verbs). Based
on his examples, many such terminations actually correspond to the pronominal proclitics, thus
suggesting—although not proving—that he was hearing them as phonologically suffixed to the preceding
word.
the phonological word. Further analysis of the various criteria for the “word” is needed for Towa as throughout Kiowa-Tanoan.

More interesting in terms of the synchronic phonology of Towa is what happens to these consonants when they are followed by another consonant within a phonological word. Before most consonants, the prospective coda /l, š/ is simply elided rather than ending up in coda position, as shown in (107).


a. běl̃á kʰi ʰa ší
   běl̃á kʰi Sá O=ší
   bread INFR T/A 3S.ITR=fall.S/D.PF
   The bread fell off.

b. v̕i̕w̕e běl̃e kʰiší
   v̕i̕w̕a-S běl̃a-S kʰil̃i ší
   both-I bread-I INFR 3D.ITR-fall.S/D.PF
   Both bread fell off.

When followed by certain alveolar, palatal, velar, or laryngeal consonants, however, the two consonants will fuse and result in a consonant usually distinct from either of the consonants involved. Following the nomenclature eventually given the process in Ken Hale’s notes, both Sprott (1992) and Yumitani (1998) label the fusional resolution of coda /l/ as the “L-Effect”50.

6.7.3.4.1 The L-Effect

Under the L-Effect, whenever one of the consonants /k, k’, g, tʰ, s, z, š, h/, follows a morpheme that ostensibly terminates in /l/, the following fused consonant forms in (108) result.

---

50 This name was originally given to the process by analogy to a similar process known as the “D-Effect” seen in Navajo and other Athabaskan languages whereby a historical affix */d/ fused with a following stem-initial consonant, leading to synchronic consonant alternations.
Towa L-Effect (Sprott 1992: 31-42; Yumitani 1998: 45-50)

\[
\begin{align*}
1 + k & \sim k^\prime = \check{c}h \\
1 + k & \sim k^\prime = \check{c}’ \\
1 + g & \sim g^\prime = j \\
1 + t^\prime & = t \\
1 + s & = t^h \\
\end{align*}
\]

The L-Effect applies between stems in a compound (109)c, between a (verb) stem and a suffix, between two suffixes, or most commonly, between a pronominal proclitic and the stem to which it is morphologically attached (109)a-b.

(109) Towa L-Effect constructions (Yumitani 1998: 46; Sprott 1992: 36)

- a. \text{it’élamį} \\
  \text{il-šél-a-mį} \\
  \text{3D.ITR-run-go.PRG} \\
  \text{They (du.) are running.}

- b. \text{nį’i til’go’išį’} \\
  \text{nį’i til=-hô-gi-šį’} \\
  \text{1s 1s>3p=food-find.PF} \\
  \text{I found the food.}

- c. \text{tį čile} \quad \text{spoon} \quad (\text{<tį-l-čile gourd-pouring}) \\
  \text{p’êč’æ} \quad \text{mountain sheep} \quad (\text{<p’êl-k’šé mountain-sheep})

Note that because pronominal proclitics can never be utterance-final, there is no evidence that any have a final /l/ except for the output of the L-Effect. That the /l/ may no longer be considered a part of the proclitic itself is suggested by the fact that certain verbal affixes may come between the proclitic and the /l/ (or rather the L-Effect consonant), as in (110)a and (110)b. Also, there is the fact that a verb stem may undergo L-Effect for some speakers even when there is an intervening incorporated noun and the proclitic is not immediately adjacent to the affected stem, as in (110)c. Note also the questionable form in (110)d where the L-Effect has applied to both the incorporated noun and the verb stem even though only a single /l/ is involved.

It makes no difference if the context would otherwise call for the palatalized or non-palatalized allophone of the velar stops.
Towa "long distance" L-Effect (Yumitani 1998: 188; Sprott 1992: 36)

a. říː da ọwítʰá ʔó  
říː da ọ=wí=l-sáʔó  
NEG 3>>3S =NEG=RFL-wake.up.PF  
S/he did not wake up.

b. tihelá sē  
ti=he=l-hâ sê  
1S>3=just=INV-bite.PF  
I just bit them (du.).

c. ọsqdá ˈlijo ʔeʃ  
ọ=l-sqdá li-gó=ʔe-ʃ  
3>>3S=l-soldier-be.lying.P.ST=REL-I  
his soldiers

d. ?ičɛ̆ni' ə'eʃ  
ɬ=ł-kɛ̆ni-k'á=ʔe-ʃ  
3>>1S=1-dog-be.lying.S/D.ST=REL-I  
my dogs

Yumitani (1998) also describes a similar fusional process involving coda /š/, which he names the “Š-Effect”.

6.7.3.4.2 The Š-Effect

The “Š-Effect” is similar to the “L-Effect”, but it applies to fewer consonants. It is found when one of these consonants follows a coda /š/, which only occurs in the inverse suffix -š. The fused forms in (111) are the attested results of this process.

(111) Towa Š-Effect (Yumitani 1998: 70-74)

\[
\begin{align*}
\text{š + k (~ k')} &= \text{čʰ} \\
\text{š + g (~ g')} &= \text{j} \\
\text{š + t} &= \text{tʃ} \\
\text{š + s} &= \text{tʰ}
\end{align*}
\]

The fused forms involving voiced consonants appear to be more restricted among speakers than are the others. The Š-Effect applies between the inverse suffix and the
agent/instrumental suffix -tæ (112)c and between the inverse and a following pronominal proclitic (112)a or particle (112)b.

(112) Towa Š-Effect constructions (Yumitani 1998: 74)

a. ń t-ho t-h-ë-ë
   ń-s ś-ë=l-së-ë 0
   1S-I 3>>1D=RFL-wake.up.PF
   We (du.) woke up.

b. `ćimjæ ëmæ-ë
   `ćim-s ëmæ 2-I OPT go.POT
   You (D/P) can go

c. ń t'æt'ë
   ń t'æ-ś-tæ 1S.I TR=hit.PASS.PF
   They hit me.

The Š-Effect appears to be more variable depending on speaker than does the L-Effect52.

6.7.3.5 Towa Vowel Elision

Related to the resyllabification phenomena described above is a vowel elision phenomenon whereby a single vowel is realized when two vowels are adjacent (and the consonant preceding the two vowels will become the onset of the resulting syllable). This elision always occurs across morpheme boundaries, i.e. when a vowel-final morpheme is followed by a vowel-initial morpheme. It is especially productive when pronominal proclitics and grammatical particles are involved. If the first of the two vowels bears some kind of accent (i.e. high, falling, or mid tone), it is the second vowel which will be elided, as in (113)a-b. Note in such instances that the first vowel will typically belong to some lexical morpheme. If both vowels lack an accent, it is the first vowel that will be elided, as in (113)c-d. There are no instances where the second vowel bears an accent.

52 Laurel Watkins (personal communication) points out that Yumitani’s primary consultant was reported to have close ties with Keresan speakers, which other Jemez sspeakers claimed to have affected his speech. It is speculative whether this might account for the š-effect or not.

a. \( \text{tæ} \)\( \hat{h} \)\( \text{kýmávē} \)  
\( \text{tæ} \)\( \hat{h} \)\( g = \text{kýmávē} \)

b. \( \text{ʔwī} \)\( \text{ʔē} \)  
\( \text{ʔwā} \)\( \text{i = ʔē} \)

Where did you buy it?  
I am a woman.

c. \( \text{dō} \)\( \text{ɡídámæ} \)  
\( \text{dō} \)\( ɡ\)\( ż = \text{zê-ma} \)

That HSY 3D. ITR=home-go.PF
They (D) went home.

Elision is particularly common between the TAM particle \( k\text{ýa} \)\(^{53} \) and a following vowel-initial pronominal proclitic. Note that processes of consonant fusion and vowel raising may also apply in the relevant context, leading to a great deal of phonological change between the input form and the phonetic form.

6.7.3.6 Towa Lexically Specified Morphophonological Alternations

There are lastly a handful of alternations to be mentioned that are very morphologically specific and do not operate under synchronically productive phonological processes. The first of these to be mentioned here does relate to the above insofar as it has to do with (potential) coda consonants. The inverse suffix is always simply -\( ŝ \), but many nouns show a phonologically unpredictable CV increment between the basic stem form and the suffix, as illustrated by the nouns in (114).

(114) Towa stem-final consonants in inverse (Yumitani 1998: 115-117)

\( \text{hí} \)\( \text{person} \) > \( \text{hí} \)\( \text{míš} \)  
\( \text{k\’ý} \)\( \text{winds} \) > \( \text{k\’ý} \)\( \text{níš} \)  
\( \text{šó} \)\( \text{man, boy} \) > \( \text{šó} \)\( \text{teś} \)

A diachronic analysis of the above suggests that the “added” consonant derives from an original stem-final consonant. Because Towa effectively allows only open syllables, this

\(^{53}\) The exact synchronic function of this morpheme has not yet been determined, but it occurs quite frequently.
stem-final consonant is simply elided in the basic number form rather than appear as coda. In the inverse, however, it has been retained, taking an epenthetic vowel /e/ before the inverse suffix. Note that the vowel may raise to [i] or [j] by the usual raising described in 6.7.3.2 above. A similar analysis can be followed for some alternations in verbs stems, although with vowel-initial suffixes rather than epenthetic vowels permitting the realization of the stem-final consonant.

A small number of stems add an increment -tʰõ- before the inverse suffix (115).

(115) Towa inverse with -tʰõ- (Yumitani 1998: 117)

<table>
<thead>
<tr>
<th>Towa</th>
<th>English meaning</th>
<th>Inverse with -tʰõ-</th>
</tr>
</thead>
<tbody>
<tr>
<td>féle</td>
<td>hats</td>
<td>féletʰõš</td>
</tr>
<tr>
<td>k'yı́élæ</td>
<td>Navajo</td>
<td>k'yı́élétʰõš</td>
</tr>
<tr>
<td>t'̣ấ</td>
<td>piñons</td>
<td>t'̣ấ tʰõš</td>
</tr>
</tbody>
</table>

These forms suggest that the stems end in /l/ and that the added increment is -sõ- (with the L-Effect causing the change of /s/ to /tʰ/). It is not yet certain what the source of this increment is. Other alternations between the basic and inverse forms of nominal stems can be explained by the above described phonological processes.

Another morphophonological alternation that does appear to have a historically phonological motivation occurs in verbs. Verbs that have a root-final consonant /p, t, tʰ/ before the (vowel-initial) perfective suffixes (and other suffixes formally related to the perfective) change these consonants to /v, l, š/ respectively before the imperfective suffix. Such verbs are given in (116).

(116) Towa aspect consonant alternation (Yumitani 1998: 57-58)

<table>
<thead>
<tr>
<th>Towa</th>
<th>English meaning</th>
<th>Perfective (PF)</th>
<th>Imperfective (IPF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>š'ú́ pe</td>
<td>shoot (with an arrow)</td>
<td>šú́ ve</td>
<td></td>
</tr>
<tr>
<td>mị́ šípe</td>
<td>rub</td>
<td>mị́ śive</td>
<td></td>
</tr>
<tr>
<td>yạ́ tẹ́</td>
<td>throw</td>
<td>yạ́ lé</td>
<td></td>
</tr>
<tr>
<td>ŋ̣ẹ́ tẹ́</td>
<td>run</td>
<td>ŋ̣ẹ́ le</td>
<td></td>
</tr>
</tbody>
</table>
The alternating consonants occur as the onset of the final syllable of the stem (not counting syllables within the grammatical suffixes) and are never stem-initial. Thus, historically it appears that this may have been simply some process of intervocalic consonant lenition. In the modern language, however, this alternation is morphologically restricted to verb forms, the lenited allomorphs limited to the imperfective.

The final uniquely Towa alternation to be described here also involves the imperfective form of verbs. While morphologically highly restricted, the process has interesting phonological patterns. A number of Towa verbs form their imperfective through reduplication of the stem, the only grammaticalized instance of reduplication within the language family. The final CV syllable of the verb root, or the only syllable of a monosyllabic root, is copied and suffixed to the stem. If the original syllable being copied bears high tone, the suffixed copy syllable will have a long vowel with a falling tone (with subsequent tone lowering and laryngealization to $V^\prime V$ as normally applies to word-final long falling tone vowels), as in (117)a. If the original syllable bears falling tone, the suffixed copy will have a short, low-tone vowel (117)b.

(117) Towa reduplicated imperfective (Yumitani 1998: 61-62)

a. **mämäɛɛ** go (IPF) ($<\text{mē} (PF)$)
   **hāhāa** bake (IPF) ($<\text{hū} (PF)$)

b. **mëmëɛ** give (IPF) ($<\text{mē} (PF)$)
   **tâ tôa** seat (IPF) ($<\text{tō} (PF)$)
No imperfective suffix is added when reduplication applies. It is not clear yet what determines whether reduplication will apply to a verb stem or not synchronically. It is simply lexically specified for now.

6.7.3.7 Towa Verb Stem-Initial Consonant Ablaut

For all of its phonological divergence from the other languages, Towa shows itself to be thoroughly Kiowa-Tanoan in the presence of verb stem-initial consonant ablaut. It displays about the same level of productivity as Rio Grande Tewa and Tiwa, but has fewer alternations. These are given in (118).

(118) Towa vowel stem-initial consonant ablaut

<table>
<thead>
<tr>
<th>Basic form</th>
<th>Ablaut form</th>
</tr>
</thead>
<tbody>
<tr>
<td>t’ ~ t</td>
<td>n ~ t</td>
</tr>
<tr>
<td>k’ ~ k</td>
<td>ʰ ~ k</td>
</tr>
<tr>
<td>t’ ~ s</td>
<td>ɦ ~ h</td>
</tr>
<tr>
<td>m ~ p</td>
<td></td>
</tr>
</tbody>
</table>

Recognizable here are the alternations between an ejective stop and its plain stop counterpart and between a nasal stop and its plain stop counterpart. No instances of an ejective bilabial stop /p’/ undergoing ablaut are attested. There is also the familiar alternation between a glottal stop /ˀ/ and velar stop /k/. The other two may seem a little odd at first, but simply result from the sound changes that have led to modern Towa and are actually cognate to alternations seen in the other languages. Thus the alternation between an ejective stop /t’/ and an alveolar fricative /s/ is cognate with the /c’ ~ c/ alternation of Rio Grande Tewa and Northern Tiwa while the alternation between two laryngeal fricatives /ʰ ~ h/ is related to the laryngeal-velar alternation from /h/ to /kʰ ~ x/ seen in the other languages. As in Southern Tiwa, it illustrates how a few simple sound
changes can quickly obscure regular patterns. Examples of these ablaut alternations are given in (119) below.


a. ɸítica ta-hi-zã-yô
   fly 1s>3s=kill.INC-request.PF
I asked him to kill the fly.

b. délíhô
   Ô=déh-ô
   3s>3s=chicken-kill.PF
   S/he killed a chicken.

c. wêk*a-kô-a
   stomach-lay.S/D.INC
   apron

d. kô ič*a
   child 3s.RFL=lay.S/D.PF
   The child lay down.

e. sélemà
   eat.INC-PRIV
   Don't eat!

e. kô-ê-š te=tøjô
   rib.1 1s>3i=eat.PF
   I ate a rib.

The alternation between voiced and voiceless laryngeal is illustrated by the verb compounding construction in (119)a contrasted with the main verb use of the same stem in (119)b. The forms in (119)c–d show the ejective – plain stop alternation with a nominalization construction. The negative command construction in (119)e, historically a nominalization construction, contrasts with a main verb usage in (119)f to show the ejective stop – plain fricative alternation. There is also a marginally attested alternation from basic voiceless bilabial stop /p/ to ablaut voiced labiovelar fricative /v/. It is seen under ablaut conditions in only a single stem that I have found, given in (120).

(120) Towa /p/ > /v/ consonant ablaut

a. nô ipé-shî'î
   thus 1s.ITR=think.POT=FUT
   I will think that way.

b. nô vêmq
   thus think.INC-PRIV
   Don't think that way!

Further investigation of Towa may uncover further instances of this /p ~ v/ ablaut alternation and/or other consonant alternation.
6.8 Summary

The above descriptions of the synchronic phonologies of modern Kiowa-Tanoan languages, while lengthy, is also necessary for an understanding of the intricacies of formal correspondences in the language family in diachronic perspective. We will see in the coming chapters that simple consideration of the individual segments present in each language would be hardly sufficient for working out all of the changes that have taken place among the members of the family. Understanding the synchronic processes in the languages will also help us to develop explanations for the motivations behind changes that have led to odd sound correspondences.
Chapter 3.9, in reviewing the literature on comparative Kiowa-Tanoan, presented something of the development of thought on the relationships of the languages in the family. Among all of this literature, however, there has been very little argumentation or systematic evidence to actually demonstrate the phylogenetic relationships or to reconstruct the ancestral language. Harrington (1910b), for instance, while the first to assert a probable relationship between Kiowa and the Tanoan languages, only presented miscellaneous sets of words from the languages that appeared to be similar. While most such sets would prove to be cognate, no attempt was made at establishing sound correspondences.

Harrington (1928), a vocabulary of Kiowa which only mentioned similar Tanoan words as an aside, does actually note a significant correspondence offhand (p. 11-12). Kiowa shows a consonant ablaut phenomenon—the same as described for the languages in the preceding chapter, what Harrington calls “hard and soft forms”—which is noted to be similar to that found in Tanoan, although he does not directly illustrate any of the Tanoan consonant alternations. As Hale (1967) points out, this morphologically determined alternation was actually among the strongest evidence ever put forward for a relationship between Kiowa and Tanoan, perhaps even more compelling than regular sound correspondences.

Whorf and Trager (1937), on the other hand, which does make use of sound correspondences and the comparative method and is the first rigorous comparative-historical publication involving the family, actually has next to nothing to say about correspondences within Kiowa-Tanoan itself. As I mentioned in the literature review in
chapter 3, this article was seeking to establish correspondences between Kiowa-Tanoan and Uto-Aztecan, but made almost sole use of Taos Northern Tiwa as representative of the former family. Thus it fails to convey significant information regarding the formal relationships between Tiwa, Tewa, and Towa (or Kiowa, which the authors weren’t convinced was related just yet).

The very first comparative historical publication to point out significant regular correspondences in the phonology was Trager (1942). Based on his limited fieldwork with Isleta, Sandia, and Picuris and his more substantive work on Taos Tiwa, Trager was able to note the regular (and a couple of irregular) sound correspondences among the four Tiwa varieties, including both consonants and vowels. Vowel correspondences will be discussed further below, alongside findings from other authors. The consonant correspondences are given in Table 7-1 below.

Table 7-1: Trager's Consonant Correspondences, Tiwa Languages

<table>
<thead>
<tr>
<th>*PTi</th>
<th>Taos</th>
<th>Pic</th>
<th>Sandia</th>
<th>Isleta</th>
<th>*PTi</th>
<th>Taos</th>
<th>Pic</th>
<th>Sandia</th>
<th>Isleta</th>
</tr>
</thead>
<tbody>
<tr>
<td>*p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>*g</td>
<td>g</td>
<td>?</td>
<td>g</td>
<td>g</td>
</tr>
<tr>
<td>*t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>*c</td>
<td>c</td>
<td>c</td>
<td>š</td>
<td>š</td>
</tr>
<tr>
<td>*k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>*c’</td>
<td>c’</td>
<td>c’</td>
<td>c’</td>
<td>c’</td>
</tr>
<tr>
<td>*kʷ</td>
<td>kʷ</td>
<td>kʷ</td>
<td>kʷ</td>
<td>kʷ</td>
<td>*j</td>
<td>y</td>
<td>c</td>
<td>c, r</td>
<td>c, r</td>
</tr>
<tr>
<td>*ʔ</td>
<td>ʔ</td>
<td>ʔ</td>
<td>ʔ</td>
<td>ʔ</td>
<td>*ɨ</td>
<td>ɨ</td>
<td>ɨ</td>
<td>ɨ</td>
<td>ɨ</td>
</tr>
<tr>
<td>*p’</td>
<td>p’</td>
<td>p’</td>
<td>p’</td>
<td>p’</td>
<td>*s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
</tr>
<tr>
<td>*t’</td>
<td>t’</td>
<td>t’</td>
<td>t’</td>
<td>t’</td>
<td>*xʷ</td>
<td>xʷ</td>
<td>xʷ</td>
<td>hʷ</td>
<td>hʷ</td>
</tr>
<tr>
<td>*k’</td>
<td>k’</td>
<td>k’</td>
<td>k’</td>
<td>k’</td>
<td>*h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
</tr>
<tr>
<td>*kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>*m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td>*pʰ</td>
<td>pʰ</td>
<td>pʰ</td>
<td>pʰ (~ ɸ/f)</td>
<td>pʰ (~ ɸ/f)</td>
<td>*n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>*tʰ</td>
<td>tʰ</td>
<td>tʰ</td>
<td>tʰ (~ θ)</td>
<td>tʰ (~ θ)</td>
<td>*l</td>
<td>l</td>
<td>l</td>
<td>r</td>
<td>r</td>
</tr>
<tr>
<td>*kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰ (~ x)</td>
<td>kʰ (~ x)</td>
<td>*w</td>
<td>w</td>
<td>w</td>
<td>w</td>
<td>w</td>
</tr>
<tr>
<td>*b</td>
<td>m, b</td>
<td>m, b</td>
<td>b</td>
<td>b</td>
<td>*y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>*d</td>
<td>l, d</td>
<td>l, n</td>
<td>d</td>
<td>d</td>
<td>*r</td>
<td>n</td>
<td>n</td>
<td>yd</td>
<td>d</td>
</tr>
</tbody>
</table>

The varieties are closely related, so most of the table shows little of interest beyond the fact of this close relationship in their sound systems. Still, some points of note are: the
ejective velar followed by a rounded vowel /k’u/ in Isleta Southern Tiwa which corresponds with a labiovelar /kʷ/ in the other varieties; the attestation of a stop articulation for the aspirated velar in the Southern Tiwa dialects as opposed to the regular fricative articulation in the Northern Tiwa varieties; the palato-alveolar fricative pronunciation /š/, the rhotic /r/, and ostensibly the labialized laryngeal /hʷ/ in Southern Tiwa corresponding to the affricate /c/, lateral /l/, and labiovelar fricative /xʷ/ respectively in Northern Tiwa. Also, it can be observed that Southern Tiwa retains more voiced stops than do Taos or Picuris Tiwa, which often have nasals or laterals instead¹.

There are a couple of irregular correspondences as well: TA /y/, PI /c/, SA /c, r/, IS /c, r/, where Southern Tiwa shows an affricate in one cognate and a rhotics in another while a Taos Tiwa consistently has a glide and Picuris Tiwa an affricate. Trager merges these two correspondence sets based on two words but can provide no explanation for the different Southern Tiwa reflexes. The other irregular correspondence TA /n/, PI /n/, SA /yd/, IS /d/ is found only in the noun class/number suffixes on nouns.

On the basis of these correspondences, Trager also provides a reconstruction of the individual segments, given in the left hand columns in the above table. Most of these are uncontroversial since they reflect identical reflexes across the board. Where the languages differ in their reflexes, Trager’s reconstructions mostly seem reasonable given standard linguistic principles and will be illustrated and discussed in greater Kiowa-Tanoan context in the following chapters. The only reconstructions with which I would

¹ That the voiced stop reflex is the more conservative articulation than the nasal stop was suggested at this juncture by the co-occurring correspondences involving nasal consonants in all of the Tiwa varieties. It is a simpler change for the voiced stops to have become nasal stops in almost all positions than for nasal stops to have become voiced stops sporadically. The correspondence TA /l/, PI /l/, SA /d/, IS /d/ is reportedly found in only a single lexical item.
take issue are the two irregular correspondences just noted: TA /y/, PI /c/, SA /c, r/, IS /c, r/ reconstructed as voiced affricate */j/ (IPA /ʤ/), and TA /n/, PI /n/, SA /yd/, IS /d/ reconstructed as rhotic */r/. These reconstructions are not well motivated and seem to be based on a desire to maintain some regularity among the sound correspondences. Since all of the sounds involved in these sets also occur in other more regularly occurring correspondence sets, Trager reasons (tentatively) that the irregular sets may thus represent a completely different proto-segment. The alternative, and the explanation I will end up pursuing, is that the irregularity of these sets has a basis in phonological environment and that more proto-segments need not be proposed for Proto-Tiwa.

On the basis of the above segmental reconstruction, Trager (1943) reconstructs about 25 human and kinship terms for Proto-Tiwa. He is somewhat limited by the data available from Tiwa varieties other than Taos, so the reconstruction of the lexical semantics shows a definite bias. But, the article does illustrate the facility with which cognates may be recognized among the four varieties of Tiwa.

The next round of historical discussion appears in Miller (1959) and Trager and Crowell Trager (1959), attempting to establish the relationship of Kiowa and Tanoan. Miller only provides sets of possible cognates without overtly extrapolating regular sound correspondences, but he is limited by the available data. His Kiowa data is taken mainly from Harrington (1928), but his Tanoan data is primarily from Whorf and Trager (1937), which leaves him little to go on beyond impressionistic similarities. Trager and Crowell Trager (1959), having better access to more Kiowa-Tanoan data, set up a few dozen potential Kiowa-Taos Tiwa cognates and posit the following consonant correspondences.
Table 7-2: Trager and Crowell Trager's Kiowa-Taos Tiwa Consonant Correspondences

<table>
<thead>
<tr>
<th>Kiowa</th>
<th>Taos Tiwa</th>
<th>Kiowa</th>
<th>Taos Tiwa</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
<td>p</td>
<td>p</td>
<td>h</td>
</tr>
<tr>
<td>t</td>
<td>t</td>
<td>s</td>
<td>l</td>
</tr>
<tr>
<td>k</td>
<td>k</td>
<td>y</td>
<td>w</td>
</tr>
<tr>
<td>pʰ</td>
<td>pʰ</td>
<td>z</td>
<td>w</td>
</tr>
<tr>
<td>kʰ</td>
<td>x (&lt;*kʰ)</td>
<td>ʔ</td>
<td>ʔ</td>
</tr>
<tr>
<td>p’</td>
<td>p’</td>
<td>tʰ</td>
<td>t, s</td>
</tr>
<tr>
<td>t’</td>
<td>t’</td>
<td>t</td>
<td>tʰ</td>
</tr>
<tr>
<td>k’</td>
<td>k’</td>
<td>t’</td>
<td>t</td>
</tr>
<tr>
<td>b</td>
<td>m</td>
<td>pʰ</td>
<td>p</td>
</tr>
<tr>
<td>d</td>
<td>n</td>
<td>ʔ</td>
<td>p’</td>
</tr>
<tr>
<td>m</td>
<td>m</td>
<td>d</td>
<td>w, y</td>
</tr>
<tr>
<td>n</td>
<td>n</td>
<td>-z-</td>
<td>-l-</td>
</tr>
</tbody>
</table>

Those correspondences in gray are the less certain in Trager and Crowell Trager’s estimation. Many, but not all, of their potential cognates and correspondences end up panning out. In vowel correspondences, they present the following.

Table 7-3: Trager and Crowell Trager's Kiowa-Taos Tiwa Vowel Correspondences

<table>
<thead>
<tr>
<th>Kiowa</th>
<th>Taos Tiwa</th>
<th>Kiowa</th>
<th>Taos Tiwa</th>
</tr>
</thead>
<tbody>
<tr>
<td>e</td>
<td>ia</td>
<td>o</td>
<td>u</td>
</tr>
<tr>
<td>i</td>
<td>u</td>
<td>ę</td>
<td>i̯ę</td>
</tr>
<tr>
<td>o(m)</td>
<td>ą (&lt;*q)</td>
<td>ą</td>
<td>ą</td>
</tr>
<tr>
<td>ą</td>
<td>ą</td>
<td>ą</td>
<td>ą</td>
</tr>
<tr>
<td>ą̯e</td>
<td>ą̯e</td>
<td>ą̯e</td>
<td>ą̯e</td>
</tr>
<tr>
<td>a</td>
<td>i</td>
<td>ę</td>
<td>o</td>
</tr>
<tr>
<td>a(n)</td>
<td>ę</td>
<td>ę</td>
<td>ę</td>
</tr>
<tr>
<td>a</td>
<td>o</td>
<td>ę̯</td>
<td>ą̯e</td>
</tr>
<tr>
<td>a̯q</td>
<td>ę̯q</td>
<td>ę̯q</td>
<td>ę̯q</td>
</tr>
<tr>
<td>i</td>
<td>i</td>
<td>u̯e (= uy)</td>
<td>o</td>
</tr>
<tr>
<td>i</td>
<td>ia</td>
<td>o</td>
<td>i (??)</td>
</tr>
<tr>
<td>o</td>
<td>a</td>
<td>o</td>
<td>i (iw?)</td>
</tr>
<tr>
<td>o</td>
<td>i̯ę</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Again, there is validity to some of the proposed correspondences, but errors in transcription and analysis (particularly in the Kiowa data) means that these vowel sets must be viewed with caution. The more in-depth survey of vowels in this chapter (and the
clearer establishment of vowel correspondences in Hale (1967)) also illustrates that such a decontextualized correspondence list of vowels—especially between two such divergent members of the family as Taos Tiwa and Kiowa—is not all that informative. The correspondences between rounded vowels, between low vowels, and between front vowels do at least help to support the argument for a Kiowa/Tanoan relationship that was the point of the article.

The true groundwork for all subsequent references to Kiowa-Tanoan historical linguistics, including this chapter, is Hale (1962, 1967). In the light of the 1967 article, the 1962 article essentially only served to prove the relationship between Kiowa and Tanoan and its findings are subsumed under the later work. Thus, it will not be discussed separately here.

Hale (1967) uses a list of approximately 200 cognate sets to reconstruct the consonant inventory of Proto-Kiowa-Tanoan2. There are some limitations to this analysis: Kiowa grammar and phonology were not yet fully understood; he appeals to only the Santa Clara dialect of Tewa and lacked significant data from the other Rio Grande varieties or from Arizona Tewa; and, he only uses Taos data to represent the Tiwa branch, missing some of the important variation among the Tiwa languages (although he was familiar with Trager 1942). These limitations notwithstanding, Hale takes an important first step in Kiowa-Tanoan comparative-historical studies by recognizing many of the most regular—or at least the most obvious—correspondences and building reconstructions for these regular reflexes. Hale’s reconstructions and correspondence

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2 The full list on which Hale bases his analysis is unpublished in Hale (n.d.).
series are adapted in Table 7-4 with some updates based on later work, e.g. Towa /ɦ/ instead of Hale’s Ø and known dialect variation within Tewa and Tiwa.

Table 7-4: Hale’s Kiowa-Tanoan Consonant Correspondences

<table>
<thead>
<tr>
<th>*P/KT</th>
<th>Kiowa</th>
<th>Tewa</th>
<th>Taos</th>
<th>Towa</th>
<th>*P/KT</th>
<th>Kiowa</th>
<th>Tewa</th>
<th>Taos</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td>*p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>*b</td>
<td>b</td>
<td>m</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td>*t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>*d</td>
<td>*d</td>
<td>n, d</td>
<td>n, l</td>
<td>n, d</td>
</tr>
<tr>
<td>*k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>*g</td>
<td>g</td>
<td>g</td>
<td>k</td>
<td>k</td>
</tr>
<tr>
<td>*kʷ</td>
<td>k(u)</td>
<td>kʷ</td>
<td>kʷ</td>
<td>g</td>
<td>*gʷ</td>
<td>g</td>
<td>w</td>
<td>w</td>
<td>kʷ</td>
</tr>
<tr>
<td>*ʔ</td>
<td>Ø</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>*c</td>
<td>t</td>
<td>c</td>
<td>c</td>
<td>s</td>
</tr>
<tr>
<td>*p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>*c'</td>
<td>t'</td>
<td>c'</td>
<td>c'</td>
<td>t'</td>
</tr>
<tr>
<td>*t'</td>
<td>t'</td>
<td>t'</td>
<td>t'</td>
<td>*tʰ</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>Ĝ</td>
<td></td>
</tr>
<tr>
<td>*k'</td>
<td>k'</td>
<td>k'</td>
<td>k'</td>
<td>k'</td>
<td>*s</td>
<td>s</td>
<td>s</td>
<td>l</td>
<td>tʰ</td>
</tr>
<tr>
<td>*kʷ'</td>
<td>k'</td>
<td>k'</td>
<td>k'</td>
<td>k'</td>
<td>*s</td>
<td>s</td>
<td>s</td>
<td>l</td>
<td>tʰ</td>
</tr>
<tr>
<td>*kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>x</td>
<td>x</td>
<td>h</td>
<td>*dʒ</td>
<td>d</td>
<td>y, j</td>
<td>y</td>
</tr>
<tr>
<td>*kʰ(u)</td>
<td>kʰ(u)</td>
<td>kʰ</td>
<td>kʰ</td>
<td>x</td>
<td>h</td>
<td>*w</td>
<td>y</td>
<td>y</td>
<td>w</td>
</tr>
</tbody>
</table>

The first important thing to note about this table is that these correspondences apply only to stem-initial position. That is, word-internal, morpheme-final, coda consonants, and consonants in grammaticalized morphemes were largely not considered.

The second important thing to recognize is that Hale’s reconstructions, at least the less than obvious ones\(^3\), are partly based on the theory that the sound system of the proto-language should be as symmetrical as possible. That is, a table correlating the occurring places of articulation in the languages with the occurring manners of articulation should be filled to the maximum economy insofar as there is any evidence. This includes

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\(^3\) By “obvious” correspondences, I mean those for which all four branches of the family have the same reflex. For example, the first correspondence set given in the table /p-p-p-p/ can be reconstructed uncontroversially as Proto-Kiowa-Tanoan */p/ because there is no evidence for any sound change to motivate any other reconstructed segment. “Obvious” changes could also be those such as the nasализation of voiced stops in Tanoan as seen in the correspondence set /b-m-m-m/, reconstructed as */b/; where there appears to be a strong and transparent phonological motivation for a change from */b/ to /m/. A less than obvious reconstruction is thus one where the reflexes in one or more branches of the family differ from the others but without an immediately apparent phonological motivation to explain the relationships (and thus the probable historical changes) among the cognate sounds.
positing such proto-segments as */cʰ, dz, gʷ/, consonants which do not occur in any of the modern Kiowa-Tanoan languages, but which conveniently fill out place-manner slots in the inventory. Hale was not haphazard in his economizing, but the economy motivation is a dubious one without significant argumentation. Hale was also aiming for maximal generalization in the types of changes that have taken place within a given branch of the family. Thus, given his reconstructions, he can say that the affricates merged with apical stops in Kiowa and the non-ejective affricates descended as fricatives in Towa. Reconstructing the relevant correspondence sets given with */cʰ, dz/ as descended from stops, fricatives, or glides would not permit such maximally simple statements.

The problem with such arguments based on economy is that they do not explain any motivation for the changes that have taken place. While languages in general do tend to show some gross symmetry in their phonological inventories (cf. Pierrehumbert 2001), it does not provide a strong argument for changes that result in asymmetry within a language family. That is, none of the modern Kiowa-Tanoan languages show such an ideally economic system as Hale’s reconstructed system for Proto-Kiowa-Tanoan. Assuming that human languages find symmetry to be an optimal state, then why would every branch of Kiowa-Tanoan have drifted into their current non-optimal conditions? One might expect some of the branches to have changed from the ideal state due to competing motivations, but probably not all of them under such a theory of language. Indeed, if the sound inventories of the modern languages are all “imperfect” with respect to symmetry, then there’s no reason not to think that the proto-language from which they descend might also have been less than fully symmetrical. This does not inherently make Hale’s reconstructions wrong, but it does call for a reevaluation of the reasoning for the
proposed proto-segments. Needless to say, economy and maximization of generalization will not serve as key arguments in the present study.

The above criticism regarding the reconstructed segments notwithstanding, most of the correspondence sets that Hale proposes are adequately attested. The only two that require more serious study are the last two, both of which involve a palatal glide in at least one language. The correspondence set KI /d/, TE /y, j/, TI /y/, TO /z/ appears to be certain, but later study (Watkins 1978, see below) would show that there are details that Hale missed. The last correspondence series KI /y/, TE /w/, TI /w/, TO /w/ is supported by only a single cognate set and is highly suspect, as will be described momentarily. There are yet more consonant correspondences that Hale (1967) was not aware of, as we’ll see in the coming chapters, but he did establish the fundamentals of Kiowa-Tanoan historical linguistics. It should also be remarked that he also looks at vowel correspondences, but not as intensively. Since later authors build more on his vowel sets than on his consonant sets—although not in any robustly supported manner—Hale’s vowel correspondences will be addressed a little farther below.

In reaffirming Kiowa’s membership in the family, Hale does also return to Harrington’s (1928) discovery that all of the member languages include the verb stem-initial consonant ablaut. In so doing he reconstructs the following alternations for Proto-Kiowa-Tanoan based on reflexes in the modern languages given in (1).
(1) Reconstructed Proto-Kiowa-Tanoan ablaut

<table>
<thead>
<tr>
<th>Basic form</th>
<th>Ablaut form</th>
</tr>
</thead>
<tbody>
<tr>
<td>*voiced stop</td>
<td>*plain stop</td>
</tr>
<tr>
<td>*glottalized stop</td>
<td>*plain stop</td>
</tr>
<tr>
<td>*h</td>
<td>*kʰ</td>
</tr>
<tr>
<td>*ʔ</td>
<td>*k</td>
</tr>
</tbody>
</table>

Because of the nasalization of voiced stops that is rampant in Tanoan languages, the first alternation above has developed to alternate nasal stops /m, n/ with plain voiceless stops /p, t/. Only Kiowa has thus retained the original alternation, although the other types of ablaut above are not productive in that language. Nichols (1994a, 1996) is the only author to further investigate the ablaut phenomenon in historical context, developing an analysis both for its formal origins as well as its morphosyntactic function, although these must be attributed to a stage before the break-up of Proto-Kiowa-Tanoan.

Watkins (1977, 1978) undertakes the only work to build on Hale’s reconstruction of consonants. In particular she takes to task Hale’s KI /y/, TE /w/, TI /w/, TO /w/ correspondence, positing an alternative correspondence in its stead. She also adds information to a couple of his correspondences, and points out a handful of correspondences involving palatal glides and affricates. Her proposed correspondences are given in Table 7-5.

Table 7-5: Watkins' Correspondences Involving Glides

<table>
<thead>
<tr>
<th>PKT</th>
<th>Kiowa</th>
<th>Tewa</th>
<th>Taos</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td>*w</td>
<td>V[round] (o, ɔ)</td>
<td>w</td>
<td>w</td>
<td>w</td>
</tr>
<tr>
<td>*gʷ</td>
<td>g, z</td>
<td>w</td>
<td>w</td>
<td>kʰ</td>
</tr>
<tr>
<td>*dz (~ c)</td>
<td>d, z (~ c)</td>
<td>y ~ j (~ c)</td>
<td>y (~ c)</td>
<td>z, d</td>
</tr>
<tr>
<td>*y</td>
<td>c</td>
<td>y ~ j</td>
<td>y</td>
<td>z</td>
</tr>
</tbody>
</table>
Rather than to suggest that Proto-Kiowa-Tanoan */w/ became a palatal glide /y/ in Kiowa as Hale did based on a single possible cognate set, Watkins proposes that the labiovelar glide merged in all cases with the following vowel, resulting in a simple rounded vowel in Kiowa. Unfortunately, her proposed change is supported by only two cognate sets each of which contains a different rounded vowel in Kiowa. Thus, her evidence for this correspondence is not all that much stronger than Hale’s. One piece of information in her favor is that other labiovelar segments, the labiovelar stops, are clearly reflected in Kiowa as a velar stop followed by a rounded vowel⁴. Thus, it would not be unlikely for a PKT labiovelar glide */w/ to undergo the same fate (see section 6.3 below).

Regarding labiovelar consonants, Watkins (1978) also inserts an addendum to Hale’s series with reconstructed */gʷ/. Whereas he listed only /g/ as the Kiowa reflex of this segment, Watkins finds that the proto-segment developed as /z/ in Kiowa when it stood before a front vowel and as /g/ before a back vowel (the vowel thence being backed and rounded in Kiowa from the labiovelar off-glide of the proto-consonant). She suggests a similar motivation for the two different Kiowa reflexes of PKT */dz/: the fricative /z/ (which alternates with /c/ under ablaut conditions⁵) resulted when the consonant stood before a (high?) front vowel while /d/ resulted elsewhere. The similar reflexes seen in Towa she is less certain of, suggesting that the /d/ may be derived by L-Effect (since /l/ + /z/ results in /d/⁶). Watkins (1978) posits a new segment for the Proto-Kiowa-Tanoan inventory, a palatal glide */y/, on the basis of a small number of potential cognate sets

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⁴ Hale (1967) only reports /u/ as the rounded vowel that derives from PKT */kʷ, kʷ', gʷ/, but Watkins also gives cognate sets where the Kiowa reflex contains /ɔ, o/.  
⁵ Watkins suggests that participation in this ablaut alternation is what prevented the Proto-Kiowa-Tanoan affricate */c/ from developing into a stop /t/ as it otherwise regularly did in Kiowa.  
⁶ If this were true, then the given /d/-initial cognate morpheme, di - sleep, would had to have become lexicalized with the initial /d/. This seems unlikely.
showing the above correspondence. Note that all of the modern Kiowa-Tanoan languages possess a palatal glide, but Hale does not reconstruct one for the proto-language. It therefore appears likely that Proto-Kiowa-Tanoan contained such a glide and Watkins’ proposal seems reasonable. As we’ll see in chapter 0, the story is a little more intricate than this.

Chapter 3.9 describes how Watkins was the last to provide quality historical analysis supported by empirical evidence as a follow-up to Ken Hale’s groundbreaking work. She was certainly the last to add any information to his correspondence sets and reconstructions of consonants. Both Davis (1989) and Ortman (2010, 2012), however, attempted to further his work on vowels. Hale (1967) had identified a number of regular vowel correspondences: 10 for oral vowels and 8 for nasal vowels (he did not take into account vowel length or tone, which were understudied at the time). He did not, however, attempt to provide reconstructions for these correspondences due to the radical shifts that have occurred throughout the family. Instead he simply labeled the correspondence series as *V₁ through *V₁₀ for oral vowels and as V₁ through *V₆ for nasal vowels, with *V₁ and *V₅ each divided into two sub-correspondences, *V₁ₐ and *V₁₉ and *V₅ₐ and *V₅ₙ respectively. Some of Hale’s proposed cognate sets also include idiosyncratic, non-regular vowel correspondences, which he simply reconstructs with unnumbered *V or *Y depending on nasality. Aside from the vowel rounding in Kiowa caused by the labiovelar series and the variable reflexes she finds based on historical frontness of vowels described above, Watkins did not attempt to deal with these messy vowel correspondence sets. Trager (1942) had reconstructed the vowels for Proto-Tiwa on the basis of
correspondences among the four Tiwa varieties, but never took the analysis any further either within that branch of the family or within the larger Kiowa-Tanoan family.

It was not until Davis (1989) that the subject of Proto-Kiowa-Tanoan vowels was again broached. While Davis could largely depend on Hale’s reconstructions otherwise⁷, he needed to develop reconstructions of Kiowa-Tanoan vowels in order to more reliably evaluate the plausibility of cognates between Kiowa-Tanoan and Uto-Aztecan. On the hypothesis that Proto-Kiowa-Tanoan possessed a system of six oral vowels, three nasal vowels, and a number of diphthongs—Tiwa, Taos Northern Tiwa in particular, is taken to be the most conservative language with respect to the vowels—Davis provides reconstructions for the vowels, most of which he correlates to Hale’s correspondence sets. He does not include justification for his hypothesized PKT vowel system and very little for the reconstructed vowels he suggests. He does note that both Towa and Kiowa have undergone major innovations in their vowels and so is not willing to rely heavily on these two languages for reconstructing vowel qualities. He also considers Trager’s Taos Tiwa /ɔ̨/ and /ą/ to be the same vowel /ɔ̨/ following an analysis by Randall Speirs (and other researchers on Tiwa who followed Trager). As a result, Davis opts to merge some of Hale’s correspondence sets in which all languages have the same reflexes except for Towa and/or Kiowa and where Hale had differentiated Taos Tiwa /ɔ̨/ and /ą/. Despite his lack of explanation or justification, many of Davis’ reconstructed vowels do seem reasonable and the reader can compare his forms to those proposed in the next three chapters.

⁷ Davis does also create some reconstructed lexical items on the basis of some cognate sets that were not included in Hale (1967), but uses Hale’s historical analysis to do so.
Two decades later, archaeologist Scott Ortman decided to try his hand at reconstructing PKT vowels for the purpose of searching for shared innovations among the four branches of the language family as part of his argumentation for a Mesa Verde origin for the Tewa (Ortman 2010, 2012). Although he largely follows Davis’ reconstructions, he opts not to follow him in the mergers described above. Instead, he reconstructs a distinct PKT vowel for each of Hale’s correspondence sets, resulting in a proto-system of 7 oral vowels, 3 oral diphthongs, 6 nasal vowels, and 2 nasal diphthongs. Chapter 3.9 briefly describes the questionable methodology Ortman uses, perhaps at its most apparent in this reconstruction. I will not be following any of Ortman’s proposals here.

Table 7-6 below synthesizes and summarizes the various work on vowel correspondences and reconstructions, including the attested regular correspondence sets, Trager’s (1942) reconstruction of Proto-Tiwa (*PTi), Davis’ (1989) and Ortman’s (2012) respective reconstructions of PKT vowels, and Hale’s (1967) numerated labels for the correspondence sets standing in lieu of reconstructions.
Table 7-6: Kiowa-Tanoan Vowel Correspondences and Reconstructions from Hale, Trager, Davis, and Ortman

<table>
<thead>
<tr>
<th>*Hale</th>
<th>*Ortman</th>
<th>*Davis</th>
<th>*PTi</th>
<th>Taos</th>
<th>Pic.</th>
<th>Sandia</th>
<th>Isleta</th>
<th>Kiowa</th>
<th>Tewa</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td>*V₁</td>
<td>æ</td>
<td>o</td>
<td>ò</td>
<td>o</td>
<td>a</td>
<td>a</td>
<td>o</td>
<td>æ</td>
<td>e</td>
<td>(K_)</td>
</tr>
<tr>
<td>*V₂</td>
<td>o</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td></td>
</tr>
<tr>
<td>*V₃</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>a</td>
<td>a</td>
<td>o</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*V₄</td>
<td>e</td>
<td>e</td>
<td>i</td>
<td>e, (w)</td>
<td>i, ?e</td>
<td>i, ?e</td>
<td>a</td>
<td>i</td>
<td>e, i</td>
<td></td>
</tr>
<tr>
<td>*V₅</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*V₆</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>o</td>
<td>u</td>
<td>o</td>
<td>e</td>
<td>i</td>
<td></td>
</tr>
<tr>
<td>*V₇</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>ia, a(y),</td>
<td>e</td>
<td>e, ia(y)</td>
<td>e</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>æ</td>
<td></td>
</tr>
<tr>
<td>*V₈</td>
<td>io</td>
<td>ia</td>
<td>iœ</td>
<td>iœ</td>
<td>ia</td>
<td>ia</td>
<td>œ</td>
<td>œ</td>
<td>œ</td>
<td></td>
</tr>
<tr>
<td>*V₉</td>
<td>ia</td>
<td>ia</td>
<td>ia</td>
<td>ia</td>
<td>iœ</td>
<td>iœ</td>
<td>œ</td>
<td>œ</td>
<td>œ</td>
<td></td>
</tr>
<tr>
<td>*V₁₀</td>
<td>ua</td>
<td>ua</td>
<td>ua</td>
<td>ua</td>
<td>ua</td>
<td>u</td>
<td>u</td>
<td>a</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>œ</td>
<td>œ</td>
<td>œ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V₁a</td>
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<tr>
<td>V₁b</td>
<td>(*ja)</td>
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<td>*q</td>
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<td>i</td>
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<tr>
<td>V₂</td>
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<td>i</td>
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<td>V₃</td>
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<td>õ</td>
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<td></td>
</tr>
<tr>
<td>V₅</td>
<td>*q</td>
<td>*q</td>
<td>*q</td>
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<td>*q</td>
<td>*q</td>
<td>*q</td>
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<td>*q</td>
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<tr>
<td>V₆</td>
<td>*q</td>
<td>*q</td>
<td>*q</td>
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<td>*q</td>
<td>*q</td>
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<td>*q</td>
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<tr>
<td>V₇</td>
<td>*q</td>
<td>*q</td>
<td>*q</td>
<td>*q</td>
<td>*q</td>
<td>*q</td>
<td>*q</td>
<td>*q</td>
<td>*q</td>
<td></td>
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<tr>
<td>V₈a</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
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<td>q</td>
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<td>q</td>
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<tr>
<td>V₈b</td>
<td>(*ja)</td>
<td>*q</td>
<td>*q</td>
<td>*q</td>
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<td>*q</td>
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<td>œ</td>
<td></td>
</tr>
</tbody>
</table>

Blacked out sections are those for which a correspondence or reconstruction is not available in correlating the various sources. I have changed the transcription for the segments in the correspondence sets to match the conventions used in this dissertation, but I largely leave Davis’ and Ortman’s reconstructions as they give them where a more exact interpretation is questionable (but correct a couple typos in Ortman). The notations (K_) and (W_) in the Towa column indicate that the immediately preceding vowel (/e/ and /i/, respectively) is the reflex when following a velar or a labiovelar respectively. Other consonants in parentheses (in the Tiwa columns) indicate that the given vowel...
correspondence usually occurs when in a syllable with the given consonant. Ortman
seems to confuse the set listed under Hale’s $V_{1b}$ with the set that Davis reconstructs as
*/qǫ/, so his reconstruction is given in parentheses with both correspondence sets. Davis
does not clearly reconstruct a vowel to correspond to Hale’s $V_{5b}$, so this slot is left blank,
although Ortman (2012: 142) believes he may have meant to merge it with $V_{3a}$, Davis’
reconstructed */qǫ/, which does make sense even if it’s not apparent in Davis (1989). It
can be seen otherwise in the table that Davis merges Hale’s $V_1$ and $V_2$, as well as $V_{1a}$,$\tilde{V}_{1b}$, and $V_4$, and $V_2$ and $V_6$.

The next three chapters will seek to build and improve on the proposed
reconstructions. However, we will have to take into account more vowel correspondences
that exist amongst the languages as well as the further influence of adjacent consonants
on vowels and vice versa (cf. chapter 0). In that regard, it should also be noted that Davis
(1989) does address non-stem-initial consonants to some small degree. While he admits
that his proposal is highly tentative, he reconstructs medial */l/ for the /l/’s that occur in
Taos Tiwa, Arizona Tewa, Towa, and Kiowa and the /r/’s that occur in Southern Tiwa
and Rio Grande Tewa, as well as */d/ for medial /nd/ in Tewa and /d/ in the other
languages. Where Tewa and Kiowa show a stem-final /n/ or /l/ respectively are
reconstructed with a *(D) symbolizing a coronal consonant of uncertain quality. This is
effectively the only discussion in the literature to date regarding non-initial consonants.
Watkins (1996) does implicitly suggest another one or two other non-initial consonant
correspondences, but does not delve into the matter.

Even a reader with only limited familiarity with Kiowa-Tanoan languages can
probably extrapolate from the above summary that there is much more work to be done in
sound correspondences and phonological reconstruction. For instance, a comparison of
the phonological inventories of the individual modern languages with the reconstruction
work that has been done will reveal that there are certain sounds in the modern languages
not accounted for in the published studies, e.g. the palatalized velar series of Arizona
Tewa and palato-alveolar affricates and fricative of Rio Grande Tewa and most instances
of the affricates in Kiowa. In the next three chapters I will be proposing revisions to these
previous accounts and will touch on much of the remaining ground.
8 Phonological Reconstruction: Vowels

8.1 Preface to Phonological Reconstructions

Now that we have a clear picture of the synchronic state of affairs, the empirical
data with which we have to work, and the previous reports of research that have been
done on comparative-historical Kiowa-Tanoan, we can get down to business with one of
the core contributions of this dissertation. In this chapter I will present my own analysis
and reconstruction of Proto-Kiowa-Tanoan phonology, the sound correspondences and
cognate sets behind the reconstruction, and my argumentation for the reconstructions I
propose. Given how little work has been done in this domain previously, this is a highly
exploratory endeavor. Many of the reconstructions and analyses I propose could be
considered fairly radical and contentious. The benefit of making such radical proposals,
even if some of them turn out to be erroneous, is that it leads to the presentation of data,
and analysis thereof, in a new light which can only lead to a better understanding of the
changes that the Kiowa-Tanoan languages have undergone.

I will begin this overview in this chapter by taking on the daunting challenge
presented by vowels, suggesting reconstructions for the correspondence sets introduced
by Hale (1967) and for others not systematically reported.

Next, I will address stem-initial consonants in chapter 0, both confirming and
correcting the previous work by Hale (1962, 1967) and Watkins (1977, 1978) as well as
making some wholly original contributions. While Hale’s analysis addresses
correspondences without any phonological restrictions, Watkins’ articles—as well as her
synchronic work on Kiowa—open the door to further consonant correspondences that are
affected by the immediate phonological environment. The analysis here will posit that such phonologically determined alternations in consonant correspondences are even more common in Kiowa-Tanoan than these earlier studies would suggest.

Finally in chapter 10, I will turn to consonants that are historically morpheme-final and word-internal. Consideration of these consonants and of vowels that occur in non-initial syllables will be important for recognizing sound correspondences among the pronominal indexation proclitics of Part III. While most of the correspondences relevant to the proclitic reconstructions are fairly secure, stem-final consonants within the lexicon—whether these were historically morpheme-final or morpheme-internal followed by a vowel—present some of the greatest phonological complexity within the family. Limitations of time restrict how much I am able to accomplish in my analysis. However, considering that these stem-final consonants have never actually been studied within the Kiowa-Tanoan literature, I am able to make some good strides towards establishing the constituents of the stem-final consonant inventory and their reflexes within the modern languages.

8.1.1 A preview of the reconstructed PKT sound inventory

The reader will find the presentation of some content within each section complicated by the fact that the argumentation may depend on sounds presented in one of the other sections. The argumentation for the reconstruction of certain stem-initial consonants requires knowledge of the reconstruction of the adjacent vowel, and vice versa, while sometimes the reconstruction of certain vowels entails looking at the following stem-final or stem-internal consonant as well. This interaction will be most
apparent in some of the more radical and new proposals on Kiowa-Tanoan phonology to be presented. It is due to these complexities that I have decided to present the analysis of vowels first. It is among vowels that the greatest amount of evidence is found for determining the changes and alternations in consonants.

The vowels reconstructed in this chapter are summarized in Table 8-1.

### Table 8-1: Summary of Reconstructed PKT Vowel Inventory

<table>
<thead>
<tr>
<th>Oral</th>
<th>Nasal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td>Back</td>
</tr>
<tr>
<td>High</td>
<td>*i [ia]</td>
</tr>
<tr>
<td>Low</td>
<td>*a</td>
</tr>
</tbody>
</table>

Within this inventory there are three oral and three corresponding nasal vowels. As will be mentioned later in this chapter, the status of vowel length remains to be explored. The basis for this vowel inventory is tied up with the reconstructed inventory of consonants, with which there has been a great deal of mutual influence. The reconstructed inventory of stem-initial consonants to be discussed in chapter 9 is given in Table 8-2.

### Table 8-2: Summary of Reconstructed PKT Stem-Initial Consonant Inventory

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unaspirated</td>
<td>*p</td>
<td>*pʷ</td>
<td>*t</td>
<td>*kʲ</td>
<td>*kʷ</td>
<td>*q</td>
<td>*qʷ</td>
<td>*ʔ</td>
</tr>
<tr>
<td>Ejective</td>
<td>*pʼ</td>
<td>*pʼʷ</td>
<td>*tʼ</td>
<td>*kʼ</td>
<td>*kʼʷ</td>
<td>*qʼ</td>
<td>*qʼʷ</td>
<td>*ʔ</td>
</tr>
<tr>
<td>Aspirated</td>
<td>*pʰ</td>
<td>*pʰʷ</td>
<td>*tʰ</td>
<td>*kʰ</td>
<td>*kʰʷ</td>
<td>*qʰ</td>
<td>*qʰʷ</td>
<td>*ʔ</td>
</tr>
<tr>
<td>Voiced</td>
<td>*b</td>
<td>*bʷ</td>
<td>*d</td>
<td>*gʲ</td>
<td>?</td>
<td>?</td>
<td>*gʷ</td>
<td></td>
</tr>
<tr>
<td>Fricative</td>
<td>*(hʲ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*hʷ</td>
<td>*h</td>
<td></td>
</tr>
<tr>
<td>Nasal</td>
<td>*m</td>
<td>*n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glide</td>
<td></td>
<td>*yʔ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*w</td>
</tr>
</tbody>
</table>
Comparing this table to Hale’s reconstructed inventory presented in chapter 7, the reader may note that this set is more greatly elaborated. In particular I will end up proposing a front-back distinction in velar and labiovelar stops as well as a series of labialized bilabial stops. Finally, Table 8-3 lays out those consonants that are proposed to be reconstructed to stem-final position.

Table 8-3: Summary of Reconstructed PKT Stem-Final Consonant Inventory

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unaspirated</td>
<td>*p</td>
<td>*p̩</td>
<td>*t</td>
<td>*k̩</td>
<td>*k̩</td>
<td>*q̩</td>
<td>*q̩</td>
<td>*Q</td>
</tr>
<tr>
<td>Voiced</td>
<td>*b</td>
<td>*b̩</td>
<td>*d</td>
<td>*g̩</td>
<td>?</td>
<td>?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal</td>
<td>*m</td>
<td></td>
<td>*n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lateral</td>
<td></td>
<td>*l</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glide</td>
<td></td>
<td></td>
<td>*y?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*w?</td>
</tr>
</tbody>
</table>

In terms of quality, only a single new segment is proposed here, namely the lateral approximant */l/*. The same back-front distinction in velars is analyzed to occur in stem-final position as in stem-initial position. While stem-final consonants will require much more study, they do not affect the more contentious aspects of the current proposal as much as do vowels and stem-initial consonants.

The point of departure between my reconstructed inventory and Hale’s and the basis for the radical differences between the proposed PKT inventory and that found in the modern languages lies in my attempt to reconcile the various correspondences among vowels. Because Hale (1967) does not undertake a reconstruction of vowel qualities for the correspondences he identifies, he does not confront the challenges that affect both vowels and adjacent consonants. In particular there is frequent overlap in the modern language reflexes in different vowel correspondence sets. When correlated with plausible
phonological developments to reconstruct the ancestral vowel quality from which the different vowels in a given correspondence set descend, I have found strong evidence for only three vowel qualities among oral and nasal vowels: a high front, a high back, and a low vowel. This proposal receives some support from typological and areal patterns, such three vowel systems being not uncommon worldwide or in the Americas. In proposing this, I do not deny that further vowel quality distinctions might not eventually be distinguished. Indeed it may even be considered highly likely that PKT had more vowel distinctions than are proposed here just given the patterns found in all of the modern languages. However, the evidence for such a more elaborated vowel system is not yet apparent.

The contrasting complexity of the consonant system also has its basis in the vowel correspondences. It was Hale (1962, 1967) who first identified correspondences between labiovelar consonants in Tewa and Tiwa and rounded and/or higher back vowels in Kiowa and Towa. Much of the elaboration in the inventory I propose is an extension of this analysis: vowel correspondences that show a mix of rounded and unrounded vowels may often be the result of the historical labialization of an adjacent consonant being coarticulated with the following vowel. This is supported not only by the correspondences identified by Hale, but also other apparent correspondences between a labiovelar consonant in one language and a non-labialized velar in another that is followed by a suspicious vowel quality.

However, while such a proposal is straightforward when the modern languages show corresponding velar consonants—labialized velar stops being attested in the modern languages and common among American languages—the relevant vowel
correspondences that seem to show coarticulation with labialization are also found following non-velar consonants. Because labialized bilabial and alveolar stops are not very common cross-linguistically, the presence of such vowel correspondences following modern bilabial and alveolar consonants must be reconciled. To account for modern alveolars it will be proposed that their source lies in labialized front velar stops, alveolar-velar alternations receiving some support in independent correspondences. For bilabials an alternative is not so readily available and I am forced to concede the possibility of labialized bilabial stops. As discussed in chapter 9.2.3, I think that further analysis will eventually remove the need for such a series, but the proposal at least makes the problem apparent.

Apart from the issue of labialization, there is also the need to account for consonant correspondences that show some kind of alveolar-velar correspondence and for vowel correspondences that seem to reflect palatalization effects. Most notable are the alveolar affricates of Tewa and Tiwa, those of Kiowa, and the post-alveolar affricates and palatalized velar stops of Rio Grande Tewa and Arizona Tewa respectively. Careful consideration of these segments and the correspondence sets in which they seem to occur bolster the support for a contrast between front and back velar series of stops. Added to this are the complications surrounding the correspondence sets that involve alveolar affricates in the modern languages, which also suggest some interrelation among velar and alveolar consonants. I reconcile these complexities by proposing an elaborated velar series with adjacent vowels further influencing the realization of these consonants in the modern language.
As with vowels, I do think there is plenty of room for further analysis which may ultimately reshape the reconstructed system. The more important outcome of the proposal in this dissertation is to point out the complexities involved and raise questions of how to reconcile the striking differences between potential cognates among the modern languages. Towards that end, the following chapters do not skirt around many of the messier details of the data and admit to being open to alternative analyses.

8.1.2 On resemblant sets and methodology of cognate evaluation

As was remarked above, this study is highly exploratory, investigating an area that has not previously been highly researched. In a comparative-historical project such as this, that means that I must explore sets of words in different languages that show certain similarities such that they may be posited as cognates. In the methodology of the research, this has entailed an intricate dialogue between identifying potential cognates and finding regular or semi-regular sound correspondences. Given the complexities of sound change that are clearly at play within the family, there are many proposed potential cognates, or “resemblants”, that I or other researchers may question to a greater or lesser degree.

The value of taking such a broad approach to cognate identification in an understudied family like Kiowa-Tanoan is that it opens the door to more questions and further inquiry. While I was highly critical in identifying potential cognates—and omitted most of the more highly suspect resemblants—I have included many sets that other Kiowa-Tanoanists or historical linguists may dispute. Insofar as this leads to progress in Kiowa-Tanoan comparative-historical studies—identifying more secure probable
cognates to replace my proposals, finding new sound correspondences, or supporting my findings—I am unapologetic if I am deemed to have been a little liberal in positing cognates and sound correspondences.

That being said, I should reemphasize the hedges that will be seen in the prose of the coming chapters. The data I set out I view as potential cognate sets. My underlying methodological assumption is that no similar forms are cognate until demonstrated to be through the identification of regular sound correspondences and reasonable explanation. That is, “innocent until proven guilty of being cognate” rather than “assume cognate status of any resemblants”. Even though I do not necessarily lay it out explicitly in a given discussion of a potential cognate set, even when regularity of sound correspondences are particularly strained, it is always a given possibility that a proposed set of resemblants may simply not be cognate after all. It is only through parsing through cognate data, both valid and invalid, that the most plausible sound changes and reconstruction can be determined. It is with this philosophy in mind that I am willing to put forth data sets that do not show complete regularity as presently understood. Even if some of my analyses should prove wrong, the presentation should make it clear where the more complicated and problematic areas are within the family. Considering how few Kiowa-Tanoanists there are at present, it does the field no service to be hyper-conservative in my discussions of possible cognates and sound correspondences, as long as the non-specialist reader does not accept the comparisons uncritically.
8.1.3 Language relations and the family tree

As a final note in explanation of the layout of the argumentation presented in the following chapters, a comment on interrelationships among the languages is in order.

There are seven distinct modern Kiowa-Tanoan languages under the approach I take in this dissertation. These fall into four branches as described in the introductory chapters—Kiowa, Tewa, Tiwa, and Towa—with only the Tewa and Tiwa branches consisting of multiple language members. I take it as largely uncontroversial that Rio Grande Tewa and Arizona Tewa belong to a single common grouping in contrast to the other languages, and the same for Taos Tiwa, Picuris Tiwa, and Southern Tiwa. Further consideration of the interrelationships within these two branches will be given in chapter 21.

Because there are definitive subgroups within the overall family, strictly speaking a full reconstruction of the ultimate ancestor of the family, Proto-Kiowa-Tanoan, must also take into consideration the intermediate stages of the language developments. The common ancestor of each of the diversified branches—Proto-Tewa and Proto-Tiwa—as well as the ancestral variety of each of the isolate branches—Proto-Towa and Proto-Kiowa—also have to be reconstructed and evaluated to arrive at a full account of the evolution of Kiowa-Tanoan. The tables of potential cognates sets that I present, however, do not represent any of these intermediate stages. That is, while I explicitly or implicitly mention structures to be reconstructed to Proto-Tewa or Proto-Tiwa, or structures to be internally reconstructed to Proto-Towa or Proto-Kiowa, I do not dedicate much space towards representing these intermediate stages in this dissertation. There are a few different reasons for this.
The foremost reasons for this omission are time restrictions and the state of research in the family. This dissertation is seeking to analyze the family towards a reconstruction of Proto-Kiowa-Tanoan on the basis of empirical data from the modern languages. Such an endeavor cannot be comprehensively tackled within a single work, so complex and expansive is language. Considering how little historical research has been done on this family, some topics must simply be left on the wayside for now. While there are benefits to reconstructing the intermediate stages of a language family for the goal of reconstructing the ultimate ancestor, the task does not proceed so linearly. While we would primarily base a reconstruction of, e.g., Proto-Tewa or Proto-Tiwa, off of data from the modern Tewa or Tiwa languages respectively, determining the changes that must have transpired to give the attested modern languages, reconstruction should also consider the changes that must have happened to give rise to that intermediate ancestor. That is, it is easier to determine what Proto-Tewa or Proto-Tiwa might have looked like if we also have some idea of what Proto-Kiowa-Tanoan might have been like.

Comparative-historical reconstruction proceeds most reliably when both a top-down and bottom-up approach can be taken\(^1\). Since the purpose of this dissertation is to try to ascertain a general picture of Proto-Kiowa-Tanoan, a serious reconstruction of the intermediate steps within the family I put off until later when time and our understanding of the modern languages and of PKT are better available..

\(^1\) The same is true of the reconstruction of Proto-Kiowa-Tanoan itself as well. Once it can be determine with any certainty what other languages or language families PKT might be related to at a deeper level, we would want to compare those languages and determine what structures PKT might have been inheriting from its ancestor. This would provide us with a much richer picture of PKT than we can get from a reconstruction based on its descendants alone. Given the questions surrounding deeper genetic relationships at present, however, we are still a little ways from taking this step.
Another reason for omitting explicit representation of Proto-Tewa and Proto-Tiwa is the degree of diversification within these branches. Within their respective phonologies and pronominal indexation proclitic paradigms, Arizona Tewa and Rio Grande Tewa do not differ all that greatly, nor do the three Tiwa languages show many differences from each other\(^2\). Where there are differences between the languages, they are typically explained within the prose or are implicitly explained by consideration of the reconstructed PKT form in comparison to the modern languages. This is particularly true of the Tewa languages which are less distinctive in their phonological systems than are the Tiwa languages. Also, for the latter, the reader may refer to Trager (1942) which does undertake a reconstruction of the Proto-Tiwa sound system. While I have a few disagreements with Trager in how to reconstruct Proto-Tiwa phonology, for the most part we are in accord. Therefore, for the topics at hand, I omit explicit reconstructions of Proto-Tewa and Proto-Tiwa structures to save space\(^3\).

With the above specifications in mind, this chapter will begin the reconstruction of Proto-Kiowa-Tanoan with an analysis of vowels.

### 8.2 Introduction to Vowels

The vowels of Kiowa-Tanoan have received very little attention in the previous literature. This is undoubtedly owing to the difficulty involved in identifying regular

\(^2\) The same is not true of other areas of the grammar. In suffixal verbal morphology, for instance, both branches show greater diversification among the members so a more intensive examination would be required.

\(^3\) It could be argued that it would save more space in the proposed cognate set tables to have a single column each for Tewa and Tiwa rather than a column for each of the distinct modern languages. In this regard I prefer to err on the side of conservatism and be more explicit in the empirical data, representing Tewa and Tiwa in terms of the actual attested language forms rather than using a reconstructed Proto-Tewa and Proto-Tiwa form.
correspondences—which all too often seem to have many exceptions—and the even
greater difficulty involved in coming up with a reconstructed vowel as a source for these
correspondences. Indeed, Hale (1967) does not even attempt to reconstruct vowels for the
18 regular correspondences that he identifies and must leave some vowels unaccounted
for even in stems he purports to be cognate (on the basis of the consonants). Davis (1989)
and Ortman (2012), the two publications that provide any reconstruction of vowels at all,
do not include any justification for their choices. Davis, as described in chapter 3.9, is
less concerned with developing a thorough and accurate reconstruction of Kiowa-Tanoan
phonology and more intent on getting a good-enough reconstruction to compare with
reconstructed Uto-Aztecan data in exploration of the Azteco-Tanoan hypothesis. The
shortcomings of Ortman (2012) were already mentioned in chapters 3.9 and 7 and his
reconstructions unfortunately do not provide an adequate point of departure for the
present research.

Complex and difficult as the historical analysis of Kiowa-Tanoan vowels might
be, an account of their development turns out to be a prerequisite for understanding and
proposing the developments of both stem-initial and stem-final consonants. Consonants
have undergone changes in place and or manner of articulation under the influence of
adjacent vowels to an extent not realized in Hale (1962, 1967) and only hinted at in
Watkins (1977, 1978). The opposite is also found to a greater extent than previously
imagined in the literature, consonants influencing the quality of an adjacent vowel. This
was already recognized in Hale’s analysis, albeit to a lesser extent than is proposed here.
Given the consonant-vowel interaction that we see, I find it clearer to go through the
complexity presented by vowels before addressing the developments of the consonants.
Because of the array of changes that have taken place among the vowels, a presentation organized according to the quality of the synchronic segments in the modern languages becomes unfeasible. I will therefore present the correspondences according to the quality of the reconstructed vowel, starting with low vowels (section 8.4), then on to high back vowels (section 8.5), and then high front vowels (section 8.6). Correspondences among nasal vowels, which must usually be treated independently of their oral counterparts, will be addressed following the oral vowel correspondences in each of these sections. I address the problems presented by Tiwa diphthongs in section 8.7, suggesting an analysis based on the three vowel qualities proposed in the preceding sections.

8.3 The Number of Vowels in Proto-Kiowa-Tanoan

It was not my goal to be reductionist when reconstructing the historical phonological system of Kiowa-Tanoan. As we saw in chapter 6, each of the modern languages possess 5-6 oral monophthongal vowels, 3-5 common nasal monophthongal vowels, plus Taos Tiwa and Southern Tiwa each have at least three oral and one nasal diphthong on top of this. Aside from the diphthongs of the Tiwa branch, the vowel systems of the modern languages are largely similar. Thus, I expected to reconstruct a vowel system with 5-6 oral vowels, 3-4 nasal vowels, and maybe some diphthongs (or maybe not).

The result of my analysis does end up reducing the number of vowels, however, although at the expense of increasing the number of consonants. My proposal is that there were 3 oral monophthongs: high front */i/, high back */u/, and low back */ɑ/; 3
corresponding nasal vowels: high front */i/ (which probably became mid or low front fairly early), high back */u/, and low back */a/. This is a typologically common configuration of height and frontness for a system with three vowel qualities (Maddieson 2013b, Sherzer 1976). It also fits typological tendencies in having no more nasal vowels than there are oral vowels and perhaps fewer of the former than the latter (Greenberg 1963, Hajek 2013). However, this is a surprising result in comparison to the more vocally robust modern Kiowa-Tanoan languages.

The numerical increase in the vowel systems is proposed here to result from two influencing factors. The first is a distinction in onset (and maybe coda) consonants between palatalized and non-palatalized velars and between labialized and non-labialized consonants. While these different consonant series have largely merged and reduced in the modern Kiowa-Tanoan languages, they have motivated various shifts throughout the vowel space to arrive at the modern vowel systems.

The other influencing factor that affected the realization of vowels is the set of historical stem-final consonants and the associated syllable structure. As seen in the phonology sketches in chapter 6, codas have rather sporadic realization in modern Kiowa-Tanoan languages. Towa and the Tewa languages have lost almost all of their coda consonants. Kiowa and the Tiwa languages show a roughly equal number and almost identical inventory of coda consonants, which appears to more closely approximate the original system. As we look at actual cognate sets, however, we will find that the codas of the different branches rarely line up neatly. What does appear to align, on the other hand, are certain developments of vowels and the historical occurrence of stem-final consonants. Most notably there is evidence that the diphthongs that we find in
Taos Northern Tiwa and Southern Tiwa (and their monophthongal correspondences in Picuris Northern Tiwa) often occur when there is evidence of a historical stem-final consonant. Thus I will propose that the Tiwa diphthongs are derived historically from occurring monophthongs when there was a historical stem-final consonant, even if that coda does not occur in the modern word, or at least not in the modern citation form. Such consonants can usually be seen in a cognate in one of the other languages.

While the discussion of the stem-initial or stem-final consonants themselves will not be the focus of this chapter, many of the arguments concerning front versus back velars and labialized versus non-labialized consonants will be addressed here. It is proposed that these consonants have influenced the vowels to such an extent that it is to the vowels that we must look to discern these consonant features. The reconstructed consonants can be seen in the cognate tables of this chapter in the course of discussing the vowels. This should hopefully keep the discussion clear until the consonants themselves are addressed in chapters 9 and 10.

### 8.4 Low Vowels

The modern Kiowa-Tanoan languages are notable in the Southwest and Plains areas for having a front-back contrast in low vowels. However, it appears that this state of affairs is not an original feature of the family based on the analysis to date. This differentiation appears to derive primarily from lowering of high vowels. As such, for Proto-Kiowa-Tanoan I will propose that there was only a single low oral vowel */ɑ/ (section 8.4.1) and one low nasal vowel */ɑ̃/ (section 8.4.1). The developments of these
low vowels into the modern languages are relatively straightforward in comparison to what we will see with high vowels later.

8.4.1 Oral Low Vowel

8.4.1.1 Primary Correspondence Sets, Oral */a/

Kenneth Hale (1967) identified two correspondence sets which appear to demonstrate the reflexes of a low (back) vowel */a/ in Proto-Kiowa-Tanoan, the sets he labels *V₁ and *V₂. Technically, he identifies three sets, but he is able to merge two of these sets into his *V₁ by recognizing a mutually exclusive distribution in Towa with respect to the preceding consonant. The three correspondence sets appear in Table 8-4 (with appropriate correspondents for Arizona Tewa, Picuris Tiwa, and Southern Tiwa added).

Table 8-4: Hale’s Low Oral Vowel Correspondences

<table>
<thead>
<tr>
<th>*HAE</th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>*V₁</td>
<td>ɔ</td>
<td>o</td>
<td>o</td>
<td>ɔ</td>
<td>a</td>
<td>a</td>
<td>æ</td>
</tr>
<tr>
<td>ɔ</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>ɔ</td>
<td>a</td>
<td>a</td>
<td>e (/C_y/)</td>
</tr>
<tr>
<td>*V₂</td>
<td>ɔ</td>
<td>o</td>
<td>o</td>
<td>ɔ</td>
<td>a</td>
<td>a</td>
<td>ò</td>
</tr>
</tbody>
</table>

Hale reports that the /e/ reflex in Towa is found following velar consonants and the front velar (or palatal) stop /v/, a distribution that seems to be mutually exclusive with that of the Towa /æ/ reflex. Remember that velar stops in Towa are typically palatalized, meaning that we have a regular historical process in Towa that raised an oral low front vowel /æ/ to mid front vowel /e/ following a modern palatalized consonant (as opposed to a historically palatalized consonant). Hale does not find a comparably restrictive
distribution for the /a/ vowel in Towa, which leads him to establish it as part of a separate correspondence set (*\(V_2\)).

Despite Hale’s recognition of two reconstructable vowels, it must be noted that all languages except for Towa show the same reflexes in all three correspondence sets. This would suggest one of two possibilities. One possibility is that there was a single original Proto-Kiowa-Tanoan vowel from which these three sets descend, Towa having developed a three-way split under phonological contextual influence. The other is that these correspondence sets reflect two original vowels (assuming Hale’s derivation of /e/ from /æ/ in Towa to be correct), only Towa having retained the contrast while the other languages merged the two vowels into one. If this latter were correct, it would suggest that Kiowa, Tewa, and Tiwa could form a subgroup within the family, showing here a shared innovation in merging the vowels\(^4\). However, because such a grouping will otherwise find little support and in light of other vowel correspondences that do not lend support to a vowel merger scenario\(^5\), the first possibility appears to be the more likely.

Under the hypothesis that all three of the above correspondence sets descend from a single Proto-Kiowa-Tanoan vowel, we must account for the factor which differentiates the three sets, namely the distribution of the three Towa vowels /e, æ, a/. The following

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\(^4\) These three branches of the family may also have independently innovated such a merger, removing the support for this grouping. If this were the case, it would probably indicate that the original two Proto-Kiowa-Tanoan vowels that merged were quite close in quality.

\(^5\) That is, by reconstructing a distinct vowel for any correspondence set that does not straightforwardly mesh with another set risks the derivation of a proliferation of vowels in the proto-language that are not supported by the structure of the vowel systems we see in the modern languages. If all of the descendant languages have 5-6 phonemic (monophthongal) vowel qualities, then it seems reasonable to suspect that the ancestral language possessed a similar sized system unless there is strong evidence to the contrary. The proposal here is that there were in fact fewer vowels in PKT than in the modern languages, supported by certain distributional facts to be covered throughout this chapter.
Tables illustrate cognate sets for each of the three correspondence sets. Pay particular attention to the Towa reflexes.

Table 8-5 illustrates those cognate sets in which the Towa vowel reflex is /æ/.

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>water</td>
<td>p'ɔ́</td>
<td>p'ɔ́</td>
<td>p'ɔ́</td>
<td>p'a</td>
<td>p'a</td>
<td>p'a</td>
<td>p'æ</td>
<td>*p'ɑ</td>
</tr>
<tr>
<td>moon</td>
<td>p'ɔ́</td>
<td>p'ɔ́</td>
<td>p'ɔ́</td>
<td>p'a</td>
<td>p'a</td>
<td>p'a</td>
<td>p'æ</td>
<td>*p'ɑ</td>
</tr>
<tr>
<td>metate</td>
<td>ʔo-</td>
<td>ʔo-</td>
<td>ʔa</td>
<td>ʔa</td>
<td>ʔe-</td>
<td>*ʔe-</td>
<td>*ʔe-</td>
<td>*ʔu</td>
</tr>
<tr>
<td>request, command</td>
<td>dɔ̞-pe</td>
<td>yɔŋ</td>
<td>yɔŋ</td>
<td>ʔo-</td>
<td>ʔe-</td>
<td>ʔo-</td>
<td>ʔe-</td>
<td>*ʔu</td>
</tr>
<tr>
<td>jaw, chin</td>
<td>ʔɔ̞</td>
<td>ʔo-</td>
<td>ʔa</td>
<td>ʔa</td>
<td>ʔe-teš</td>
<td>*ʔat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>skin</td>
<td>kʰɔ́</td>
<td>kʰɔ́</td>
<td>kʰɔ́</td>
<td>xay</td>
<td>xay</td>
<td>xay</td>
<td>wä-hæ</td>
<td><em>ʔag</em>(V)</td>
</tr>
<tr>
<td>hear</td>
<td>t'ɔ́</td>
<td>t'ɔ́</td>
<td>t'ɔ́</td>
<td>t'ɔ̞-</td>
<td>t'ala</td>
<td>t'ara</td>
<td>t'æ-te</td>
<td><em>ʔa</em>(Li)</td>
</tr>
<tr>
<td>arm</td>
<td>kʰɔ́</td>
<td>ɔ̞</td>
<td>ɔ̞</td>
<td>ɔ̞</td>
<td>ɔ̞</td>
<td>ɔ̞</td>
<td>hæ̞</td>
<td>*ʔu</td>
</tr>
<tr>
<td>buffalo</td>
<td>kʰl</td>
<td>kʰl</td>
<td>kʰl</td>
<td>kʰl</td>
<td>kʰl</td>
<td>kʰl</td>
<td>kʰl</td>
<td>*ʔu</td>
</tr>
</tbody>
</table>

This appears to be the primary vowel correspondence set, appearing when no other determining factor is present. Later developments in Towa, namely palatalization of velar consonants, give us the cognate sets in Table 8-6.
Table 8-6: Low Oral Vowel Cognate Sets, Towa /e/

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>Ta</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>mouth</td>
<td>σ̥</td>
<td>σ̥</td>
<td>σ̥</td>
<td>ɔ̝</td>
<td>ɔ̝</td>
<td>ø̝</td>
<td>ø̝</td>
<td>*k'ɑ</td>
</tr>
<tr>
<td>wood</td>
<td>σ̥</td>
<td>σ̥</td>
<td>σ̥</td>
<td>ɔ̝</td>
<td>ɔ̝</td>
<td>ø̝</td>
<td>ø̝</td>
<td>*k'α</td>
</tr>
<tr>
<td>cold</td>
<td>k'ɔ́</td>
<td>k'ɔ́</td>
<td>k'ɔ́</td>
<td>k'ɔ́</td>
<td>k'ɔ́</td>
<td>k'ɔ́</td>
<td>k'ɔ́</td>
<td>*q’a</td>
</tr>
<tr>
<td>bathe,</td>
<td>k̤-</td>
<td>k̤-</td>
<td>k̤-</td>
<td>k̤-</td>
<td>k̤-</td>
<td>k̤-</td>
<td>k̤-</td>
<td>*qa</td>
</tr>
<tr>
<td>swim</td>
<td>ko- (&lt; ɑ̄ (PF))</td>
<td>ko- (&lt; ɑ̄ (PF), ɔ̄li (NEG))</td>
<td>ka (&gt; ɑ̄ (PF), ɔ̄la (PASS))</td>
<td>ka (&gt; ɑ̄ (PF), ɔ̄are (PASS))</td>
<td>k̤' (&gt; ɑ̄ (PF))</td>
<td>*qa (INC) (&lt; ɑ̄L ?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ablaut)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>plant (TR)</td>
<td>ko</td>
<td>k̤</td>
<td>ka</td>
<td>ka</td>
<td>k̤</td>
<td>*qa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cut, shear</td>
<td>k'ɔ́</td>
<td>k'ɔ́</td>
<td>k'ɔ́</td>
<td>k'ɔ́</td>
<td>k'ɔ́</td>
<td>*q’a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>porcupine</td>
<td>σ̥</td>
<td>σ̥</td>
<td>σ̥</td>
<td>σ̥</td>
<td>σ̥</td>
<td>σ̥</td>
<td>σ̥</td>
<td>*q’a</td>
</tr>
<tr>
<td>eat (TR)</td>
<td>k̤'ĺ̤</td>
<td>k̤'ĺ̤</td>
<td>k̤'ĺ̤</td>
<td>k̤'ĺ̤</td>
<td>k̤'ĺ̤</td>
<td>k̤'ĺ̤</td>
<td>k̤'ĺ̤</td>
<td>*k’adV</td>
</tr>
<tr>
<td>bite,</td>
<td>k̤'ĺ̤</td>
<td>k̤'ĺ̤</td>
<td>k̤'ĺ̤</td>
<td>k̤'ĺ̤</td>
<td>k̤'ĺ̤</td>
<td>k̤'ĺ̤</td>
<td>k̤'ĺ̤</td>
<td>*k’adV</td>
</tr>
<tr>
<td>devour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>greedily</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>put in/on,</td>
<td>dop (&gt; t̤’ (INC))</td>
<td>t̤gi</td>
<td>t̤y</td>
<td>t̤y</td>
<td>t̤y</td>
<td>t̤y</td>
<td>t̤y</td>
<td>*taq’i</td>
</tr>
<tr>
<td>don</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above set occurs almost exclusively following historical front or back velar stops.

The one exception is *put in*, which shows some other quirky characteristics that will be mentioned shortly.

The last main correspondence set, with the Towa reflex /ɑ/, is given in Table 8-7.
Table 8-7: Low Oral Vowel Cognate Sets, Towa /ɑ/

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>hair</td>
<td>pʰɒ̞</td>
<td>pʰó</td>
<td>pʰo</td>
<td>pʰ</td>
<td>pʰa</td>
<td>pʰa</td>
<td>φɁ</td>
<td>*pʰ(ʷ)ɑ</td>
</tr>
<tr>
<td>ear</td>
<td>tʰɔ̞-</td>
<td>ʰo-Ye’</td>
<td>ʰo-ye’</td>
<td>tʰɔ̞-liə</td>
<td>tʰa-liə</td>
<td>tʰa-liə</td>
<td>wَا-تَا</td>
<td>*tʰa(ʷ- kʰiC)</td>
</tr>
<tr>
<td>lip</td>
<td>só-</td>
<td>khowa</td>
<td>(mouth-</td>
<td>la-xay</td>
<td>la-xay</td>
<td>la-khay</td>
<td>tʰú-hu</td>
<td>(mouth-</td>
</tr>
<tr>
<td>large</td>
<td>δ</td>
<td>sóyó</td>
<td>só yó</td>
<td>ʰ</td>
<td>lə</td>
<td>la</td>
<td>t⁵</td>
<td>(large ;</td>
</tr>
<tr>
<td>shoot an</td>
<td>tʰɔ̞-</td>
<td>ʰ</td>
<td>ʰ</td>
<td>thọŋ</td>
<td>th⁵</td>
<td>th⁵m</td>
<td>th⁵an</td>
<td>tham</td>
</tr>
<tr>
<td>arrow</td>
<td>(/&gt; tʰɔ̞-</td>
<td>ʰ</td>
<td>ʰ</td>
<td>(IPF)</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
</tr>
<tr>
<td>bake,</td>
<td>kho-</td>
<td>kʰo</td>
<td>ʰο</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
</tr>
<tr>
<td>roast</td>
<td>póvi</td>
<td>pobi</td>
<td>pʰb</td>
<td>pam</td>
<td>paf</td>
<td>pʰ</td>
<td>pʰ</td>
<td>pʰ</td>
</tr>
<tr>
<td>flower</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>be lying</td>
<td>kʰ-</td>
<td>k’o-</td>
<td>k’ô-</td>
<td>k’á</td>
<td>*q(ʷ)’a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(S/D)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>piñon</td>
<td>kʰ-</td>
<td>ʰ-</td>
<td>ʰ-</td>
<td>t⁵’o</td>
<td>t⁵’aw</td>
<td>t⁵’aw</td>
<td>t⁵’aw</td>
<td>t⁵’</td>
</tr>
<tr>
<td>crack</td>
<td>(&gt; kʰ’de</td>
<td>(PF)</td>
<td>(?)</td>
<td>ʰ ’o</td>
<td>ʰ ’aw</td>
<td>ʰ ’aw</td>
<td>ʰ ’</td>
<td>ʰ’</td>
</tr>
<tr>
<td>sit down,</td>
<td>só-</td>
<td>sóge</td>
<td>soge</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
</tr>
<tr>
<td>set down</td>
<td>(/&gt; tʰ-</td>
<td>(INC)</td>
<td>&gt; tʰ</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
</tr>
<tr>
<td>obtain,</td>
<td>hó-</td>
<td>hógi</td>
<td>hó ge</td>
<td>hɔ̞y</td>
<td>hɔ̞y</td>
<td>hɔ̞</td>
<td>hɔ̞</td>
<td>h</td>
</tr>
<tr>
<td>take, get (p)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>medicine, herb</td>
<td>góp herb (?)</td>
<td>wo`</td>
<td>wo lo</td>
<td>wól</td>
<td>wál</td>
<td>war</td>
<td>kW̃</td>
<td>*gʷadV</td>
</tr>
<tr>
<td>smell, sniff</td>
<td>sê`</td>
<td>sų`</td>
<td>sųŋ</td>
<td>t̂law ; lówna sniff</td>
<td>lawnia sniff</td>
<td>law</td>
<td>t̂wa,wē ; t̂wa,nq̃t̂i sniff</td>
<td>*kʷaC(ni)</td>
</tr>
</tbody>
</table>

Significantly, looking farther ahead to other correspondences, we also find Towa /a/ regularly corresponding to the series that includes high back rounded vowels, including the Tiwa diphthong /uɔ, oa/ (section 8.7). In that later discussion, we hypothesize that that vowel series descends from a low vowel following a labialized consonant. This could also be the explanation for much of this set as well: the Towa vowel reflects the original labialization of the consonant while any trace of labialization is lost in the other languages. Noticeably, none of the forms above where the Towa vowel is /æ/ or /e/ have a labialized onset. On the other hand, while we do find a couple of confirmed cases of a labialized consonants in Table 8-7, e.g. medicine, smell⁶, labialization in the others is supported primarily by the Towa vowel, although also supported by the coda consonant reflex /w/ in Tiwa in piñon. These questionably labialized consonants are marked by parentheses.

There are at least two exceptions in Table 8-7 which do not clearly have a labialized source. In the *ear* set, the base morpheme is reconstructed as *t’æ*, but no labialization is posited. This example will be addressed shortly below. The other possible exception is *shoot with an arrow*, which appears to be reconstructed without labialization as *tʰab(V)* at first blush, but could alternatively be reconstructed as *kʷab(V)*. In this latter example, if labialization is not behind the Towa /a/ vowel reflex, then it indicates

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⁶ The set for *smell, sniff* shows non-low vowel reflexes in Kiowa and Tewa. The Tewa vowel appears to reflect the labialization, probably becoming dominant in the closed syllable structure.
that a different phonological motivation for the vowel must be sought, which probably
would mean that most of the labializations *($) above can be omitted.

Interestingly, we do find a near minimal pair in the data which illustrate the
different vowel reflexes in Towa: hů bake and hče arm. The only other observable
formal difference between these two morphemes looking across the modern languages in
Table 8-5 and Table 8-7 is the tone contrast observable in Rio Grande Tewa: kho- roast
and kحو arm, although this does not appear to motivate the different vowels of Towa.
We do find a consonant /p/ showing up in Towa in the passive hů pč, although it is not
clear if this represents a stem-final vowel or the onset of an old auxiliary verb. If this
final consonant is not part of the stem, or simply has no influence on the vowel, then no
immediate explanation for the minimal pair is forthcoming based on the segments of the
modern reflexes found to date. However, a feature like labialization which accompanies
the consonant could very well explain the difference, leading to a proposal of *qʰɑ bake
and *qʰɑ arm.

Labialization could also explain cases where we find /a/ following the palatal stop
/v/, where the fronted and raised vowel /e/ is otherwise expected. This is seen in tʰɑ sč sit
down and tʰɑ wč smell (as well as the derived transitive form tʰɑ nqči smell (TR), sniff).
In the latter word, we do find evidence of labialization in cognates, preserved in the
vowel of RGT sč, AT sč, and in the coda consonant of TA ɬow, Pi ɬawnia, ST ɬaw. In
the case of tʰɑ sč sit down, there is no apparent comparative evidence to motivate the

7 The roast, bake stem appears to occur primarily as a bound morpheme compounded with another verb
stem in Tewa and Tiwa. I have not found a cognate in Kiowa. This could suggest that the stem would need
to be bound to an auxiliary verb in the passive, even if it can be used by itself in active constructions. The
plausible source for the auxiliary given the form is pچ: make.
Towa vowel /a/, but deriving it from labialization is feasible, especially as the proposed reconstructions in this chapter take shape.

There appears to be another motivation for exceptions, as seen in t\váha lips and wá \và ear. In these (and other) cases, we appear to have vowel assimilation, the vowel of the first syllable assimilating to the quality of the vowel in the second syllable. In the case of t\váha lips, the word appears to be a compound of t\vé mouth + h\h\vá skin. We would thus expect the unattested form **t\véh\h\vá. The motivation for the change from /æ/ to /a/ in the second syllable is not clear, although it may have something to do with the vowel shortening and the influence of the historical coda velar */G/, which was lost. However that vowel became backed to /a/, it appears to have caused the vowel of t\vé mouth to lower to /a/ as well8.

The claim of assimilation in the case of lips is supported by the same kind of assimilation which we see elsewhere. We see such assimilation especially following a word-initial /w/, typically derived occurring when a compound-initial ejective has been lost (see chapter 10.1.1). Table 8-8 presents such cases of assimilation.

---

8 Or to stay low. Given the Tewa and Tiwa cognates of this compound, there is no reason not to think that it probably predated Towa and the vowel fronting and raising caused by modern palatalized consonants in the language.
Table 8-8: Towa Vowel Assimilation

<table>
<thead>
<tr>
<th></th>
<th>Kt</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ear</td>
<td>t’ɔ̄-</td>
<td>ʔo-ye’</td>
<td>ʔo-ye</td>
<td>t’ɔ̄-liə (hear-?)</td>
<td>t’ə-a-liə (hear-?)</td>
<td>t’ə-a-lia (hear-?)</td>
<td>wâ-t’â</td>
<td>*t’ə-a-kʷiC</td>
</tr>
<tr>
<td>ice</td>
<td>ʔo-yl</td>
<td>ʔo-yl</td>
<td>p’ɔ-ciə (water-cold)</td>
<td>p’ə-ciə (water-cold)</td>
<td>p’ə-šia (water-cold)</td>
<td>wâ-sa</td>
<td>*p’ə-ši(C)</td>
<td></td>
</tr>
<tr>
<td>skin</td>
<td>kʰ5y</td>
<td>khowa</td>
<td>kʰowa</td>
<td>xɔy</td>
<td>xay</td>
<td>xay</td>
<td>wê-hæ (?-skin)</td>
<td>*(p’ə)-qʰuG</td>
</tr>
<tr>
<td>cold</td>
<td>t’ɔ</td>
<td>t’î</td>
<td>ʔo-t’î</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*(p’ə)-kʰi(C)</td>
</tr>
<tr>
<td>spring (of water)</td>
<td></td>
<td></td>
<td></td>
<td>p’ɔ-ci (water-eye)</td>
<td>p’ə-ci (water-eye)</td>
<td>p’ə-ši (water-eye)</td>
<td>wê-sé</td>
<td>*p’ə-ši</td>
</tr>
</tbody>
</table>

In all cases the vowel of the Towa word-initial /wV/ sequence appears to derive from low vowel */a/, but it takes on the quality of the vowel of the following syllable. Note that this is a Towa-internal process that must have applied relatively recently, after the vowels of the second syllable had evolved to their present forms.

8.4.1.2 Individual Apparent Exceptions, */a/

There are a couple of cognate sets above in which Towa shows a reflex /e/ but the vowel does not follow a palatalized consonant in modern Towa. One of these is in the verb stem eat, repeated from above in Table 8-9, where the vowel /e/ is found following an alveolar stop /t’/ and (by verb stem-initial consonant ablaut) following /s/.

9 See chapter 10.1.1 for developments of the word-initial ejectives in Tewa and Towa in these examples.
Significantly, the correspondences to these Towa alveolars are velar stops in the other languages. While this specific consonant correspondence is not regularly attested, we will see later that Towa /t'/ and /s/ are regular reflexes of (palatalized) front velar stops */kʲ/ and */k/. The palatalization of these earlier stops seems to have been preserved in Towa long enough to cause the fronting and raising of the vowel */a/ to modern /e/. Meanwhile in the other languages, the palatalization was lost before the low vowel in the historically typically open syllable, which would then explain why we do not see the regular consonant correspondences10. Other than in Towa, the palatalization appears to be preserved only in the Kiowa form k’yótkó *devour greedily*, where the derivation process has resulted in a closed syllable11. This can be compared to the Kiowa cognate k’ó·lé· *bite*, in which the main stem syllable is open and palatalization is lost, the velar stop merging with the reflexes of the back velar stops (which give most modern-day velar stop reflexes).

The other exception where we find Towa /e/ following a synchronically non-palatalized consonant is again following an alveolar stop in tésé put in. The cognate set is repeated from above in Table 8-10.

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10 These correspondences would be Ki /t'/, Te /c'/, Ti /c', ε'/ corresponding to Towa /t'/ and Ki /t/, Te /c/, Ti /c, š/ corresponding to Towa /s/. See chapter 9.5.1 for the development of this series from front velar stops.

11 This verb k’yótkó is the only example in my Kiowa database of a word with a /k’yó/ sequence. Palatalization in Kiowa is only sparsely attested with velars or other consonants before any vowel but /a/.
Table 8-10: Low Vowel, KT put in

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>put in</td>
<td>dóp  (&gt; tó' (INC))</td>
<td>tógi</td>
<td>tay</td>
<td>tay</td>
<td>tay</td>
<td>tésē</td>
<td>*taq'i</td>
<td></td>
</tr>
</tbody>
</table>

In this set we find not only the unexpected reflex in Towa, but also irregularities in the Kiowa cognate. Neither the back rounded vowel /o/ nor the stem-initial voiced stop /d/ fits the correspondences we find in the rest of the set. I have yet to arrive at an explanation for this set, but see chapter 9.3.1 for other cognate sets that show the same kind of divergence in Kiowa.

8.4.1.3 Low Oral Vowel Reflexes and Influence From Other Vowels

Another apparent exception to the above vowel patterns is seen in the Tewa and Towa imperfective form of the verb do: RGT ?o', To ?á. In Towa we regularly find /æ/ following an onset glottal stop /ʔ/ when no other factors apply, e.g. Tewa ?o', Towa ?é bathe, swim (PF); Tewa ?ó, Towa ?é· metate. One possible explanation for this exceptional imperfective do form comes from the paradigm for the verb do in these two languages, where it turns out the imperfective is irregular. The perfective form of do is given in all KT languages in Table 8-11.

Table 8-11: Low Vowel, KT do

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>do (PF)</td>
<td>?mé (&lt; ?m (ROOT))</td>
<td>?ŋ</td>
<td>?ŋ</td>
<td>?m</td>
<td>?m</td>
<td>?m</td>
<td>ʔ (ʔb (ROOT))</td>
<td>*ʔb(V)</td>
</tr>
</tbody>
</table>

Note that, aside from the root-final consonant (which have largely been lost or reduced in Tewa and Towa anyway, see chapter 10), the vowel of the verb stem is nasalized in the
perfective and in other stem forms. In Tewa and Towa—and only in these two—we find an imperfective form that lacks a synchronic coda and has an oral vowel, the vowel quality of which differs from the rest of the stem forms: /o/ as opposed to /q/ in Tewa and /a/ as opposed to /q/ in Towa. Significantly these oral vowels, reflexes of */a/, are the regular oral counterparts to the nasal vowels we see in the above verb, reflexes of */q/ (see section 8.4.1).

Assuming this exceptional imperfective stem form is not reconstructable to Proto-Kiowa-Tanoan and is a later development in the Tewa and Towa branches, then this example is not an exception to the correspondence sets above which reflect PKT */a/.

Instead, this do (IPF) reflects the regular nasal vowel correspondence descended from PKT */q/ with denasalization of the vowel leading to a merger with the regular oral low vowel reflexes. If this denasalization occurred before Tewa and Towa became distinct languages, then the denasalized counterpart of */q/ may have been regarded as distinct enough from */a/ to prevent it from fronting to /æ/ as the */a/ vowel split into the three different reflexes now found in Towa.

Another case where we find a regular low vowel reflex where a different vowel is expected, as well as a different vowel where a low vowel reflex is expected, is seen in Table 8-12. Once again here it is Tewa and Towa which show unexpected developments.

Table 8-12: Low Vowel, KT *star

<table>
<thead>
<tr>
<th></th>
<th>Kt</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>star</em></td>
<td>ʔagýó</td>
<td>ʔagýó</td>
<td>p’axíla</td>
<td>p’axíla</td>
<td>p’axíla</td>
<td>wóhó</td>
<td><em>p’á-qʰI-kʰa</em></td>
<td></td>
</tr>
</tbody>
</table>

In the first syllable of the word for *star*, both Tewa languages show /a/ where we expect to see /o/ on the basis of the Tiwa cognates. Similarly in Rio Grande Tewa, we find /o/ in
the second syllable where we expect to see /a/. The Tiwa forms are transparent compounds, e.g. TA p'ɔ-xi-ɬo water-kernel-large, and in fact we do find a /o/ in the Tewa cognate of a related Tiwa compound: RGT ʼogú shell, TA p'ɔ-xi, ST p'ɑ-xi shell, raindrop (water-kernel).  

What we appear to have in the Tewa star word is a case of vocalic assimilation, most apparent in Arizona Tewa. The initial /o/ of a hypothetical Proto-Tewa form *ʼogáyó must have assimilated to the /a/ of the following syllable giving the modern Arizona Tewa form ʼagáyó. Rio Grande Tewa would then have undergone a subsequent development assimilating the /a/ of the second syllable to the /o/ of the third, giving modern Rio Grande Tewa ʼagóyó. Note for this set that the Towa cognate—if it is indeed fully cognate—appears to have undergone vowel assimilation as well, the first syllable having taken on the quality and nasalization of the /q/ of the second syllable.

One final exceptional case found in the cognate set in Table 8-13 shows an instance. In this case Kiowa seems to have a divergent reflex /a/ where /ɔ/ is expected in correspondence with the other languages.

Table 8-13: Low Vowel, KT antelope

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>antelope</td>
<td>t'áp</td>
<td>t'og</td>
<td>t'ɔ</td>
<td>t'a</td>
<td>t'a</td>
<td>t'Ô</td>
<td><em>t'uK</em></td>
<td>(?)</td>
</tr>
<tr>
<td></td>
<td>(&gt; t'ɔ- (COMP))</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(&gt; t'ápěš (i))</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In fact Harrington (1928) does report a bound compound allomorph of this antelope stem which has the vowel /ɔ/, e.g. t'ɔ'i fawn, t'ɔsel herd of antelope, t'ɔkʰy buckskin. Since

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12 The compound for star thus appears to be a metaphor meaning large raindrops or large shells.
13 While the Towa word does appear to be cognate to the Tewa and Tiwa words, or at least the first two syllables of those words, the source of the nasalization on the form is presently unknown.
the bound form lacks the coda /p/ and no final consonant is seen in Tiwa, this might lead to the conclusion that the Kiowa /p/ is morphological and may be motivating the change in the vowel to /a/. However, we do also find a coda consonant /ŋ/ in Rio Grande Tewa while Towa has /p/ appear in the inverse\textsuperscript{14}. Moreover, we see that the Towa vowel reflex is /a/, which was suggested above to derive from labialization. It appears that more is going on here than meets the eye.

We will see sets similar to this one in section 8.7, where historically labialized consonants were followed by high vowels. While those later sets will give us /a/ in Towa, alternating /o/ or /u/ in Tewa, and alternating /ɔ/ or /i/ in Kiowa, the Tiwa low vowel reflexes we see here are unusual. This suggests we have an original high vowel with a preceding labialized consonant where the presence or absence of the stem-final consonant determines the particular vowel reflex. Alternatively, we have an original low vowel */a/ followed by a (perhaps front rounded) stem-final consonant which leads the Kiowa vowel to be fronted to /a/ and the Towa vowel to be realized as /a/. The stem-initial consonant suggests more the latter account, but the full details remain unclear for now. In short, however, it illustrates how we can get vowel correspondences divergent from the regularly attested patterns.

\textbf{8.4.1.4 Motivation for the Reconstruction */a/}

In summary of the sound correspondences above, I propose that there was an original Proto-Kiowa-Tanoan vowel which I reconstruct as */a/. This vowel largely has a fairly consistent single reflex in each of the Kiowa, Tewa, and Tiwa branches, only

\textsuperscript{14} Thanks to Laurel Watkins (p.c.) for providing me with the inverse form of this Towa word.
occasionally obscured by other phonological developments. In Towa, on the other hand, this vowel split into three main reflexes. The basic reflex, all other factors being equal, is low front /æ/. Following a modern palatalized consonant, the vowel is mid front /e/, unless it has already been affected by the factors that produced the third reflex. This third reflex, low back /ɑ/, hypothetically occurs following a historically labialized consonant. Because many of the labialized consonants are being proposed in this dissertation for the first time, more research is needed to fully confirm the contexts for this last reflex.

This account based on */ɑ/ assumes there was only a single vowel which gave rise to three correspondence sets since there is not adequate evidence at the moment that Towa is conservative in these vowel correspondences. This is true especially in light of how the PKT vowel system begins shaping up as we take into account other correspondence sets and reconstructions. This vowel is reconstructed as */ɑ/, representing a low vowel that was probably back and maybe rounded much of the time, given later developments within the family, i.e. *[ɒ], although it is not presently apparent whether this rounding was a consistent or contrastive feature.

This reconstruction is motivated primarily by Occam’s razor, unassimilated reflexes across the four primary branches, and the overall vowel systems we see in the modern languages. In all but Tewa, the modern reflex of */ɑ/ is a low vowel, specifically a low back somewhat rounded vowel in Kiowa, Taos Northern Tiwa, and as one of the reflexes in Towa. It is a low front vowel only as one of the other major reflexes in Towa. It is a low vowel of variably back to central quality in Southern Tiwa and Picuris Tiwa. In Tewa it is realized as a mid back rounded vowel (although in Arizona Tewa this seems to be a fairly low mid vowel for at least some speakers). Given these modern realizations, it
would take the fewest number of changes to suggest that the low vowel remained almost unaltered in all of the branches, the most extreme change being the raising to /o/ in the Tewa branch and the fronting to /æ/ in Towa. Other changes, such as Towa raising to /e/ and backing to /a/ only occurred in phonologically more restricted environments.

8.4.2 Nasal Low Vowel

Corresponding to the low oral vowel reconstructed in the section above, there appears to have been a single low nasal vowel. The qualities of the nasal vowels in the modern languages differ from their oral counterparts enough that we must treat them as fully distinct. That is, developments in the oral vowels do not necessarily predict the behavior of their nasal counterparts or vice versa.

8.4.2.1 Primary Correspondence Sets, Nasal */a/  

Hale (1967) accurately reported the primary correspondence sets that descend from the Proto-Kiowa-Tanoan low vowel. Three of his sets reflect the low back vowel: *V₁ₐ, *V₁₉, and *V₄. These sets are presented in Table 8-14.

Table 8-14: Hale’s Low Nasal Vowel Correspondence Sets

<table>
<thead>
<tr>
<th>*Hale</th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>*V₁ₐ</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>i</td>
</tr>
<tr>
<td>*V₁₉</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>i</td>
</tr>
<tr>
<td>*V₄</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>i</td>
</tr>
</tbody>
</table>

Hale distinguishes *V₁ₐ and *V₁₉ on the basis of Taos Tiwa, following Trager in contrasting /a/ and /γ/ in that language. As already mentioned above in chapter 6.4, later study has suggested that there is no such contrast, the only low nasal vowel in Taos Tiwa being /γ/. Thus we can say that there are only two legitimate correspondence sets here.
The set \( V_4 \) is distinguished from \( V_1 \) by the reflex seen in Towa: a high front nasal vowel \( /i/ \) in the latter and a mid back rounded vowel \( /o/ \) in the former. This vowel split in Towa is much like what we saw above with the reflexes of the oral low vowel */a/.

Table 8-15 and Table 8-16 illustrate the two correspondence sets. In the first set in Table 8-15, the Towa reflex is high front \( /i/ \), corresponding to a low back vowel in the other languages.

### Table 8-15: Low Nasal Vowel Cognate Sets, Towa /\( i/\)

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
<th>*Pkt</th>
</tr>
</thead>
<tbody>
<tr>
<td>five</td>
<td>ʔi</td>
<td>q</td>
<td>q</td>
<td>ʔ</td>
<td>q</td>
<td>q</td>
<td>i</td>
<td>*q</td>
</tr>
<tr>
<td>grease</td>
<td>kʰ'gยา</td>
<td>kʰ'gi</td>
<td>kʰ'yǝ</td>
<td>kʰ'yǝ</td>
<td>kʰ'j</td>
<td>*q'q(I)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>breath</td>
<td>ħy</td>
<td>ħi</td>
<td>ħu la breathe</td>
<td>ħy</td>
<td>ħa</td>
<td>ħa</td>
<td>ħi (I)-hise breathe</td>
<td>*hql</td>
</tr>
<tr>
<td>extinguish (fire)</td>
<td>pq</td>
<td>i</td>
<td>pq</td>
<td>ħi</td>
<td>pq(C?)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>thread</td>
<td>pq</td>
<td></td>
<td>i</td>
<td>pqd</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st person indep. pron.</td>
<td>n'</td>
<td>nq</td>
<td>nq</td>
<td>nə</td>
<td>nə</td>
<td>nə</td>
<td>n'</td>
<td>*nq</td>
</tr>
<tr>
<td>six</td>
<td>m̃s'</td>
<td>(s</td>
<td>l)</td>
<td>(s</td>
<td>l)</td>
<td>m̃l</td>
<td>m̃l</td>
<td>m̃l</td>
</tr>
<tr>
<td>seed</td>
<td>d̃k'gya</td>
<td>t̃k'</td>
<td>t̃g</td>
<td>t̃</td>
<td>t̃</td>
<td>t̃</td>
<td>t̃Q (?)</td>
<td>*k̃Q(??)</td>
</tr>
<tr>
<td>grandchild</td>
<td>m̃k'gi</td>
<td>m̃k'tu relative (?)</td>
<td>m̃k'</td>
<td>m̃k'</td>
<td>m̃k'</td>
<td>m̃k'</td>
<td>*mqwI</td>
<td></td>
</tr>
<tr>
<td>storm</td>
<td>k̃k'ŋ rain</td>
<td>k̃k'ŋ rain</td>
<td>k̃k'ŋ light rain</td>
<td>k̃k'ŋ xoan thunder</td>
<td>*q̃qd</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This correspondence set appears to be the most commonly occurring, with reflexes across various phonological environments. The Towa high vowel appears to have resulted from
some general raising process rather than by some specific phonological motivation. The mid back round vowel reflex seen in Table 8-16, however, seems to be more limited.

Table 8-16: Low Nasal Vowel Cognate Sets, Towa /q/

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>sweet,</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td></td>
</tr>
<tr>
<td>sugar</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q(q)</td>
</tr>
<tr>
<td>do</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>(w)q</td>
</tr>
<tr>
<td>aspen</td>
<td>nq</td>
<td>nq</td>
<td>nq</td>
<td>nq</td>
<td>nq</td>
<td>nq</td>
<td>nq</td>
<td></td>
</tr>
<tr>
<td>father</td>
<td>dóm</td>
<td>dóm</td>
<td>dóm</td>
<td>dóm</td>
<td>dóm</td>
<td>dóm</td>
<td>dóm</td>
<td>dóm</td>
</tr>
<tr>
<td>??</td>
<td>dóm</td>
<td>dóm</td>
<td>dóm</td>
<td>dóm</td>
<td>dóm</td>
<td>dóm</td>
<td>dóm</td>
<td>dóm</td>
</tr>
</tbody>
</table>

The only phonological contexts in which the Towa /q/ reflex has been thus far confirmed is stem-initially following the glottal stop (/ʝ/ following glottal stop does occur, but as a reflex of the nasal high front vowel\(^{15}\)) and stem-initially following /n/ (although the /ʝ/ reflex is attested in this environment, cf. \(\tilde{nî} \) 1st person pronoun above). Compare the Tewa word for aspen with the Towa word for cottonwood: the Tewa form has the same vowel /q/ in both syllables while Towa shows /q/ only in the first syllable, the second showing the /ʝ/ reflex\(^{16}\).

From this we may speculate that PKT */q/ regularly became /ʝ/ in Towa except when in a prominent (stem-initial) syllable when following /ʝ/ or /n/. The raising of */q/

---

\(^{15}\) The only Towa word that looks like it may have /ʝ/ as a reflex of */q/ is \(\tilde{nî} \) (> ŋòš) shoe. This word appears to be related to ˈnî foot in some way but the nature of the derivation is uncertain.

\(^{16}\) It is also possible that the /ʝ/ in Towa nójî is the epenthetic vowel /e/ that regularly occurs between a stem-final consonant and the inverse suffix -š (cf. section 6.7.3). However, if this were the case, it would not be expected for the epenthetic vowel to occur in compounds, e.g. nójî-sêyî oriole (nójî+sêyî cottonwood+bird). This suggests that the /ʝ/ here is instead part of the stem, although it is not impossible that the vowel originates as an epenthetic segment with the inverse form (lacking the often elided coda /š/) then becoming lexicalized as the basic form of the stem.
to /i/ in the pronoun nįː may be a relatively recent development, only being licensed due to the often unstressed nature of pronouns. Or, it may be that PKT */q/ is realized as /q/ following /n/ in Towa only when the /n/ descends from PKT */d/ (cf. nốː be, exist < *dɔ̨ below). When a Towa /n/ is a reflex of the rare PKT */n/, on the other hand, the vowel is realized as /i/.

It is also possible that the Towa /q/ is the reflex of */q/ following a labialized consonant, just as was the /a/ reflex of PKT oral */a/. However, there is not any clear evidence of this aside from the rounded Towa reflex. I mark the reconstructions with possible labialization, but must defer judgment. There are too few examples of Towa /q/ within this correspondence set so far to confirm or refute any of the presented possibilities.

8.4.2.2 Individual Apparent Exceptions. */q/

There are some exceptions to the above patterns that I have so far identified, although most of them can be easily explained. Watkins (1984) points out two exceptional cases that belong to the above correspondence sets in her grammar of Kiowa, given in Table 8-17.

Table 8-17: Kiowa Denasalized Low Vowel

<table>
<thead>
<tr>
<th></th>
<th>Kī</th>
<th>RGT</th>
<th>AT</th>
<th>T̀a</th>
<th>Pl</th>
<th>ST</th>
<th>Tò</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>bring</td>
<td>bɔ́ˑ</td>
<td>mɔ́ˑ</td>
<td>mɔ́ˑ</td>
<td>mɔ̂</td>
<td>mą</td>
<td>mą̂</td>
<td>mį̂</td>
<td>*bq(n)</td>
</tr>
<tr>
<td>be, exist</td>
<td>dɔ́ˑ</td>
<td>n̥ʊ́</td>
<td>n̥ʊ́</td>
<td>n̥ʊ̂</td>
<td>nʊ́</td>
<td>nʊ́</td>
<td>nʊ́ˑ</td>
<td>*dq(n)</td>
</tr>
</tbody>
</table>

In the Kiowa cognates within the above sets we find an oral vowel rather than the expected nasal /q/. These appear simply to be instances of denasalization following a voiced oral stop which is sporadically found in Kiowa. As Watkins points out, however,
these verbs take certain allomorphs of inflectional morphemes (imperfective -n-, negative -mɔ̨̂ˑ) that are otherwise only found following nasal vowels. This reinforces the proposal that the Kiowa vowels denasalized (rather than proposing that an oral vowel nasalized in the Tanoan languages).

Similar to the above cases of denasalization in Kiowa, we also find the following apparent example of denasalization in Tewa in Table 8-18.

Table 8-18: Tewa Denasalized Low Vowel

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>find</td>
<td>tʰɔ̨ⁿ</td>
<td>ʃą</td>
<td>kʰɔ̨w</td>
<td>tʰɔ̨</td>
<td>tʰɔ̨</td>
<td>tʰɔ̨</td>
<td>ʃı̨</td>
<td>kʰq̊n</td>
</tr>
</tbody>
</table>

Here the expected Tewa cognates would be RGT **ʃą and AT **kʰqw, but the vowel in these languages has become denasalized. It is not entirely clear that these Tewa words are cognate with the other Tanoan languages, but the identical semantics and presence of an aspirated stop in stem-initial position (plus the tendency of PKT front velar stops to become alveolar obstruents across the family) all suggest the stems are indeed cognate.

Another case where Kiowa appears to be exceptional at first glance is in the cognate set for wind in Table 8-19.

Table 8-19: Kiowa Labialization and Low Nasal Vowel Rounding

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>wind</td>
<td>gʰɔ̨mgyá</td>
<td>w̱</td>
<td>w̱</td>
<td>w̱</td>
<td>w̱</td>
<td>w̱</td>
<td>kʷʃı̨</td>
<td>*gʷqm</td>
</tr>
</tbody>
</table>

Here Kiowa shows /q/ where /γ/ is expected. Chapter 9, as well as the sections below, will reveal this to be a regular development, however. The Kiowa reflex of the PKT consonant */gʷ/ is /g/ followed by a rounded vowel. The labialization of the consonant
overrides the quality of the following vowel to give the back rounded vowels /u/ or /o/ (or /o/ here, preserving the nasalization of the obscured vowel). This rounded vowel is regularly /o/ when followed by a bilabial coda.

A slightly more aberrant case is presented by the cognates for *hand* in Table 8-20 below, although the grammaticalized bound form found on a number of verbs suggests that it may not be as anomalous as it first appears.

Table 8-20: Low Nasal Vowel Cognate Sets, Towa /q/

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*P KT</th>
</tr>
</thead>
<tbody>
<tr>
<td>hand</td>
<td>?</td>
<td>q</td>
<td>q</td>
<td>?</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>( ~ j)</td>
</tr>
<tr>
<td></td>
<td>mɔn</td>
<td>mʊŋ</td>
<td>mʊŋ</td>
<td>mɔn</td>
<td>mən</td>
<td>mən</td>
<td>məte</td>
<td>mʊte (V)</td>
</tr>
</tbody>
</table>

In the free morpheme form of *hand*, all languages show their regular reflexes except for Towa. Rather than the expected /i/ or /o/, we find /q/, a rare segment in Towa. However, no sequences of /mq/ are attested in the language outside of one pronominal proclitic (see chapter 19), thus we might be able to say that /q/ occurs following /m/ in Towa where /o/ would otherwise be expected. Since we do find instances of Towa /mɨ/ as a reflex of PKT */bq/, as well as the above case of the bound form of *hand* where Towa mɨ- is a reflex of PKT *mq-, there must be some restriction on the distribution of /q/ as opposed to /i/ when following /m/. The basis for this is not yet apparent.

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17 This vowel /q/ is not altogether uncommon following a nasal stop onset. In the context of oral consonants, however, it only seems to occur by the spread of nasalization from an adjacent syllable.
8.4.2.3 Labialization and Diphthongization

There are a couple of correspondences involving low nasal vowels not reported in Hale (1967), but reported for just the Tiwa languages by Trager (1942) and further extrapolated for the full family in Davis (1989) and from there in Ortman (2012: 143). These correspondences are summarized loosely in Table 8-21.

Table 8-21: Low Nasal Vowel Correspondence, ST Central Diphthong

<table>
<thead>
<tr>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>ɔ̨</td>
<td>ɑ̨</td>
<td>ɑ̨</td>
<td>ɔ̨</td>
<td>ą</td>
<td>ɨ̨ą</td>
<td>ɨ̨</td>
</tr>
</tbody>
</table>

This summary is loose insofar as other phenomena we encounter elsewhere tend to change the reflexes in one or more languages. There are not many cognate sets found to date that show the correspondences in question. Kiowa and Tewa reflexes in particular are in short order. This issue aside, what we tend to find is that Kiowa, Tewa, and Northern Tiwa show a low nasal vowel, the few Towa reflexes show a high back nasal vowel, while—crucially—Southern Tiwa shows a nasalized central vowel /ɨ̨/ or a nasal central diphthong /ɨ̨ą/.

Cognate sets involving the rare Southern Tiwa diphthong /ɨ̨ą/ appear in Table 8-22.
Table 8-22: Low Nasal Vowel Cognate Sets, ST /ɨ̨ą/

<table>
<thead>
<tr>
<th></th>
<th><strong>KI</strong></th>
<th><strong>RGT</strong></th>
<th><strong>AT</strong></th>
<th><strong>TA</strong></th>
<th><strong>PI</strong></th>
<th><strong>ST</strong></th>
<th><strong>TO</strong></th>
<th><strong>PKT</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>jackrabbit</td>
<td>Ɂ'ɔ'm-</td>
<td>Ɂ'w'ɬ' ŋ</td>
<td>Ɂ'</td>
<td>Ɂ'</td>
<td>Ɂ'jə</td>
<td>Ɂ'</td>
<td>Ɂ'</td>
<td>*qʷ'qNm</td>
</tr>
<tr>
<td>dream</td>
<td>k'q-ɬ</td>
<td>k'q-ɬ</td>
<td>k'q</td>
<td>k'q</td>
<td>k'q</td>
<td>k'q</td>
<td>k'q</td>
<td>*qʷ'C</td>
</tr>
<tr>
<td>healer, (native) doctor</td>
<td>k'q</td>
<td>k'q</td>
<td>k'q</td>
<td>k'q</td>
<td>k'q</td>
<td>k'q</td>
<td>k'q</td>
<td>*qʷ(C?)</td>
</tr>
<tr>
<td>blood</td>
<td>ʔ'ım</td>
<td>ʔ'ũŋ</td>
<td>ʔ'ũŋ</td>
<td>ʔ'</td>
<td>ʔ'</td>
<td>ʔ'</td>
<td>ʔ'</td>
<td>ʷ*qʷ'qM</td>
</tr>
</tbody>
</table>

While the Kiowa, Tiwa, and Towa reflexes are consistent across these sets (notwithstanding the fronting of Towa /i/ to /ɨ/ following a palatalized consonant), the couple of attested Tewa cognates show different vowels. The expected /q/ only appears in *jackrabbit* but in *blood* the vowel is /ũ/. The key cognate set is the *jackrabbit* series. Notice here that Rio Grande Tewa has a labiovelar stop followed by the low vowel /q/. Correspondingly, Kiowa shows the back rounded vowel /q/. This set suggests that we get the series in the same context that we get the sets including the Tiwa oral diphthongs (section 8.7): when a low vowel follows a labialized consonant, */Cʷq/ . The labialization is retained with an ejective velar in Tewa, is coarticulated with the vowel in Kiowa and Towa to give a back (rounded) vowel, and emerges as a diphthong in Southern Tiwa. In Northern Tiwa, however, the labialization is lost entirely. This was probably an internal development within the Tiwa branch: an original Tiwa nasal diphthong */jɔ̞/ became monophthongal /ɔ̞, ə/ in Northern

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18 Most sources give the Picuris Tiwa stem as ʔq. However, Harben Trager (1968) records both the low vowel form ʔq as well as the central vowel form ɨ. Trager (1935-1972) also presents some uncertainty in this, suggesting either speaker variation reflecting a change in progress or perhaps some phonetic anomaly in this stem that preserves some feature of the original Tiwa diphthong.
Tiwa, only being preserved in Southern Tiwa. Unfortunately I have not found a Tewa or Kiowa cognate for the *dream or *healer* stems yet.

This explanation for the emergence of the Tiwa central diphthongs may also explain the cognate set for *blood*. Here we see the regular correspondences in all languages except for Tewa, which unexpectedly has a high back vowel /ʊ/, but there is no apparent preceding consonant to have provided the labialization. However, if we posit that the stem began with the elusive PKT glide */w/*—expected to exist on typological grounds given the existence of the labiovelar stop series (see chapter 9.8)—then the otherwise anomalous vowel series makes sense. The initial labiovelar glide became coarticulated with the vowel in all branches, giving the back (rounded) vowel in Kiowa, Tewa, and Towa and the diphthong in Tiwa, which underwent its usual monophthongization in Northern Tiwa.

Less clear are those cognate sets in which Southern Tiwa has a monophthongal /ɨ̨/, shown in Table 8-23.

Table 8-23: Low Nasal Vowel Cognate Sets, ST /ɨ̨/

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>bring</td>
<td>ɨ̨</td>
<td>q</td>
<td>q</td>
<td>ɨ̨</td>
<td>ɨ̨</td>
<td>ɨ̨</td>
<td>ɨ̨</td>
<td>*q</td>
</tr>
<tr>
<td>hide, scalp&lt;sup&gt;19&lt;/sup&gt;</td>
<td>kʰɨ̨y</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>*qʰwqD</td>
</tr>
<tr>
<td>hunger</td>
<td>ʰqɨ̨sê</td>
<td>ʰqɨ̨sê</td>
<td>ʰqɨ̨sê</td>
<td>ʰqɨ̨sê</td>
<td>ʰqɨ̨sê</td>
<td>ʰqɨ̨sê</td>
<td>ʰqɨ̨sê</td>
<td>*hʷq(i?)</td>
</tr>
<tr>
<td>goose</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>*qʰwqD</td>
</tr>
<tr>
<td>blue, green</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>kʰɨ̨</td>
<td>*kʰwqD</td>
</tr>
</tbody>
</table>

<sup>19</sup>This is a curious stem. Synchronically in Kiowa and Tiwa, it differs from the semantically related stem meaning *skin* only in nasalization of the vowel and, in Southern Tiwa, in having a central vowel (cf. *skin* Ki kʰɨ̨y; RGT khōwā; AT kʰowā; Ta xāy; Pi xāy; ST khāy; To hāê).
In these sets we see the same correspondences in Tiwa and in the one set for which I have a Towa cognate. We also find the expected low vowel in Kiowa and Tewa where definite cognates have been identified, but with no apparent reflex of labialization. Of course, since Southern Tiwa has a monophthong /ɨ̨/ and not a diphthong /ɨ̨ą/, there may not be any reason to expect the same motivations at play. This Southern Tiwa diphthong may be undergoing monophthongization much as oral /iə/ is becoming /i/ before approximant codas (cf. section 8.7.2). Frantz (n.d.) does also report a diphthong pronunciation of ST kɨ̨ ~ kɨ̨ą bury (inc), but this is the only evidence for an alternation between the nasal central diphthong and the monophthong that I have seen to date. The correspondences in the other Tiwa languages (and in Kiowa, Tewa, and Towa) do all suggest that the same vowel is at play historically.

The correspondences among stem-final consonants and a few of the synchronic forms indicate that these vowel correspondences may have occurred in an open syllable. This is in contrast to the set in Table 8-22 with the Southern Tiwa diphthong realization, where there is the suggestion that the vowels occurred in a closed syllables. However, there is no trace of labialization outside of the vowel reflexes in Southern Tiwa and (ambiguously) Towa, which undermines certainty in this proposed scenario.

Evidence for labialization may come from one extremely questionable cognate with one of the above forms. The Towa morpheme for hunger is vĩ-. There are two issues with this form as a potential cognate with the Tewa and Tiwa morphemes above: the vowel quality and the initial consonant. We do see /i/ appear as an allophone of /ɨ̨/, the expected Towa correspondent here, when following a synchronically palatalized consonant. While I find no attested instance of a /vɨ̨/ sequence in the language, we do find
/vi/ in a handful of morphemes, indicating that /v/ does not (always) provide a palatalization context synchronically.

Furthermore, I do not have a clear understanding of Towa /v/ in Kiowa-Tanoan context, it being a fairly uncommon phoneme in morpheme-initial position as well as word-internally. There are a couple of alternations and at least one plausible cognate that suggest a relationship with /p/, but little else. Considering some of the issues with bilabials that will be addressed in chapter 9.2, it is possible that /v/ could derive from certain labialized segments. That is, this combined with the /h/ of the Tewa and Tiwa forms for hunger could suggest a historical stem-initial consonant */hʷ/.

I raise this Towa case as something to look into as possible evidence for labialization. Otherwise, the evidence requires either that we simply stipulate a labialized consonant on the basis of the Southern Tiwa vowel /ɨ̨/ (< /ɨ̨ą/), as indicated in the reconstructed forms in Table 8-22 above, or that another explanation be found for the vowel.

An in-between case is the following cognate set in Table 8-24, where Southern Tiwa shows a monophthong /ɨ̨/ and Kiowa and Tewa show a back rounded vowel reflex. Taos and Picuris Tiwa and Towa have the usual correspondences.

Table 8-24: Low Nasal Vowel Cognate Set, KT *under*

<table>
<thead>
<tr>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMBER</td>
<td>U</td>
<td>U</td>
<td>qed</td>
<td>q</td>
<td>j</td>
<td>j</td>
<td>*q</td>
</tr>
<tr>
<td>under,</td>
<td>dü̞</td>
<td>nū'</td>
<td>nū'ü</td>
<td>nə̞</td>
<td>nə̞</td>
<td>ṇ</td>
<td>nj́</td>
</tr>
</tbody>
</table>
The absence of a diphthong in Southern Tiwa can probably simply be attributed to the coda sonorant following the vowel in the modern language, a context in which the Southern Tiwa central diphthongs tend to monophthongize. The Kiowa, Tewa, and Towa vowels indicate either labialization plus low vowel */q/ or an original high back vowel */u/. I interpret it as the former, however, on the basis of the Tiwa reflexes.

Finally, I point out the following cognate set in which Southern Tiwa has a monophthongal /i/. However, we do not find the same correspondences as we did above and I suggest that this does not descend from a */C*q/* sequence.

Table 8-25: Nasalized Central Vowel, KT *nose*

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>Ta</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>nose</td>
<td>a</td>
<td>ū</td>
<td>ū</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>o</td>
<td>*i</td>
</tr>
</tbody>
</table>

We find back rounded vowels in Kiowa, Tewa, and Towa and central vowels in all of the Tiwa languages. This central vowel is nasal /i/ in Picuris Tiwa, but oral /i/ in Taos Tiwa (Taos does not have any instances of a nasal central vowel). Nasalization is curiously variable throughout the family in this cognate set. The vowel is oral /o/ in Towa and /u/ in Arizona Tewa. In Rio Grande Tewa there is dialect and speaker variation between a nasal and oral pronunciation while Harrington (1928) variably transcribes the vowel in *pʰo* ~ *pʰq* *nose* (although more often nasal). Whether this is due to typos, assimilation to the following nasal vowel of *q* *bleed*, or represents actual variation is not clear.

The variation may represent an ongoing denasalization process in this stem, or it could demonstrate a nasalization process, perhaps as an iconic association between the meaning *nose* and nasalization. If the nasalization was original to the stem, the vowel
correspondence reflexes are highly unusual. I tentatively reconstruct this form with a high front (oral) vowel */i/ preceded by a labialized stop (see chapter 9.5.3 on the stem-initial consonant correspondence here).

8.4.3 Summary of Low Vowels

In summary, Proto-Kiowa-Tanoan is proposed to have had two low vowels, one oral, */ɑ/, and one nasal, */ɑ̨/. Both vowels are relatively stable in the family, undergoing relatively few changes motivated by phonological environment.

The low oral vowel shows the greatest allophony in Towa, where labialization may cause it to be produced farther back than the basic reflex while palatalization may lead it to be raised. Labialization and palatalization influence the vowel only rarely in the other branches.

The low nasal vowel varies less in Towa than does the oral vowel, having two reflexes of apparently unequal distribution. However, following labialization, we get a distinct vowel reflex not only in Towa, but also in Southern Tiwa and, in closed syllables, in Kiowa and Tewa as well.

Table 8-26 summarizes the regular reflexes of the proposed PKT low vowels in the modern languages.
Table 8-26: Summary: Low Vowel Correspondences

<table>
<thead>
<tr>
<th>*PKT</th>
<th>*C&lt;sup&gt;ʷ&lt;/sup&gt;</th>
<th>*C&lt;sup&gt;i&lt;/sup&gt;&lt;sub&gt;_&lt;/sub&gt;, *C&lt;sup&gt; yOffset&lt;/sup&gt;</th>
<th>ELSEWHERE</th>
</tr>
</thead>
<tbody>
<tr>
<td>*ɑ</td>
<td>α̨ (?) ✸&lt;sub&gt;ˀ&lt;/sub&gt;, ˀ&lt;sub&gt;d̰&lt;/sub&gt;</td>
<td>α̨ (?)&lt;sub&gt;m̰&lt;/sub&gt;</td>
<td>ELSEWHERE</td>
</tr>
<tr>
<td>*q</td>
<td>α̨ (?)&lt;sub&gt;ˀ&lt;/sub&gt;, d̰&lt;sub&gt;_&lt;/sub&gt;</td>
<td>α̨ (?)&lt;sub&gt;m̰&lt;/sub&gt;</td>
<td>ELSEWHERE</td>
</tr>
</tbody>
</table>

As per common linguistic conventions, C = consonant, V = vowel, # = word or syllable boundary, period . = (word-internal) syllable boundary. The underscore indicates the position of the vowel in question. In this work, C<sup>ʷ</sup> indicates a labialized consonant, C<sup>i</sup> indicates a palatalized (front velar) consonant in Proto-Kiowa-Tanoan, and C<sup>y</sup> here indicates a palatalized consonant in modern Towa. These conventions will be used in summary tables through this and the next two chapters.

### 8.5 High Back Vowels

In comparison to the low vowels of the previous section and the high front vowels of section 8.6, the PKT high back vowels have undergone relatively few changes. As with the low vowels, I propose that there were two high back vowels, one oral and one nasal. It is not clear how rounded, back, or high these vowels were, but I opt to reconstruct them as */u/ and */∀/ on typological grounds, to anchor the contrast to the other two proposed vowels.
8.5.1 Oral High Back Vowel

Hale (1967) identified one cognate set that has reflexes as higher oral, usually rounded, vowels. His *V₆, given in Table 8-27, shows a higher back monophthongal vowel in all but Tewa.

Table 8-27: Hale's High Back Oral Vowel Correspondence Set

<table>
<thead>
<tr>
<th>*HALE</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>*V₆</td>
<td>o</td>
<td>e</td>
<td>e</td>
<td>u</td>
<td>o</td>
<td>u</td>
<td>i</td>
</tr>
</tbody>
</table>

This vowel is rounded in Kiowa and Tiwa, usually unrounded in Towa, is relatively high back in Taos Tiwa, is mid back in Kiowa and Picuris, and is somewhere in between in Southern Tiwa. The Tewa correspondence is quite divergent, being a mid front unrounded vowel.

This correspondence set is amply attested. We can probably reasonably reconstruct the vowel as having a relatively high and back prototype, given the reflexes in all but the Tewa branch. Considering the curious Tewa reflex—as well as taking into account the unrounded Towa reflex—the vowel may have been unrounded in at least some contexts. That is, much like the modern Towa reflex, it may have been rounded under coarticulation with certain consonants (e.g. bilabials), but rounding may not have been a strong phonetic component. Given its distribution, especially with respect to labialized consonants, however, I will reconstruct the vowel as high back rounded */u/.

Examples of this correspondence set appear in Table 8-28.
Table 8-28: High Back Oral Vowel Cognate Sets

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>structure</td>
<td>tó́</td>
<td>te</td>
<td>te</td>
<td>tu</td>
<td>to</td>
<td>tu</td>
<td>tí́</td>
<td>*tu</td>
</tr>
<tr>
<td>kill</td>
<td>hól</td>
<td>heˈ</td>
<td>hey</td>
<td>hu</td>
<td>ho</td>
<td>hu</td>
<td>hĩ́</td>
<td>*huT</td>
</tr>
<tr>
<td>fall, descend (P), rain</td>
<td>sëp</td>
<td>ū́l</td>
<td>ū́l</td>
<td>ū́r</td>
<td>ū́</td>
<td>ū́</td>
<td>tí́</td>
<td>*k/udV</td>
</tr>
<tr>
<td>louse</td>
<td>pʰó́</td>
<td>pʰé</td>
<td>kʰe-pʰu</td>
<td>pʰa- phu</td>
<td>φí́</td>
<td>*pʰu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cottonwood, tree</td>
<td>tól</td>
<td>té</td>
<td>té</td>
<td>tu</td>
<td>to</td>
<td>tu</td>
<td>tî-dabî</td>
<td>*tu(C?)</td>
</tr>
<tr>
<td>jar, round object</td>
<td>pótka</td>
<td>bé</td>
<td>méle</td>
<td>mûlu</td>
<td>mọlo</td>
<td>buru</td>
<td>pî li</td>
<td>*budu</td>
</tr>
<tr>
<td>bright</td>
<td>the'</td>
<td>tʰele</td>
<td>tʰul</td>
<td>tʰol</td>
<td>thur</td>
<td>sun</td>
<td>*tʰudV</td>
<td></td>
</tr>
<tr>
<td>seven</td>
<td>cê</td>
<td>cê</td>
<td>cu</td>
<td>co'o</td>
<td>šu</td>
<td>si(t)</td>
<td>*k/u(C?)</td>
<td></td>
</tr>
<tr>
<td>bluebird</td>
<td>se'</td>
<td>sul</td>
<td>sol</td>
<td>šî</td>
<td>*k/udV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pour</td>
<td>ū́p</td>
<td>ū́we</td>
<td>ū-pʰu</td>
<td>ū-pʰu</td>
<td>ū; ū-pho</td>
<td>ūlè</td>
<td>*uC(V?)</td>
<td></td>
</tr>
<tr>
<td>Jump, throw</td>
<td>ū́l</td>
<td>ū́</td>
<td>ū́le</td>
<td>ūrì</td>
<td>ūli</td>
<td>*udi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>spoon, ladle</td>
<td>k'éré</td>
<td>k'utu</td>
<td>k'olo</td>
<td>k'uru</td>
<td>*q'utu</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

20 I am not entirely certain at present whether this Kiowa root is cognate to these given Tiwa and Towa verbs, which mean fall (P), if it is cognate to the Tiwa verb meaning descend, TA liw, or if it is related to both. The vowel change /o/ > /e/ found in the perfective does suggest that it is more related to liw descend than to the fall set, although it cannot be ruled out that the two sets are actually cognate in Kiowa-Tanoan.
Diachronically, this vowel seems to be fairly invariant in each language, not showing any major allophony. It appears to remain unaltered whether the original syllable was open or closed or when it was preceded by any type of consonant.

One open question is whether this vowel could ever be preceded by a labialized consonant. In the modern languages, syllables of the form /wu/ or /Cʷu/ are not permitted. This would suggest that */wu/ and */Cʷu/ were also not permitted in Proto-Kiowa-Tanoan, which is so far supported insofar as I have found no affirmative (or negative) evidence for syllables of this type.

There are only minor, and idiosyncratic, instances of the reflexes of this vowel appearing in different correspondence sets. The cognates presented in Table 8-29 illustrate the extent of the complexity.

Table 8-29: High Back Vowel, KT flute

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>flute, tube</td>
<td>tô -bá</td>
<td>teŋ</td>
<td>tub</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*tu(N?)p(V) (?)</td>
</tr>
</tbody>
</table>

The correspondence between Tewa and Tiwa suggests an original oral vowel, but Kiowa and Towa both show a nasal vowel. There appear to be two probable explanations. One is that the vowel was oral, but it was followed by a nasal consonant. This consonant elided across the board, nasalizing the vowel in Kiowa and Towa, but leaving no trace in Tewa
and Tiwa. The other possibility is that the vowel was originally nasalized. However, it
lost its nasalization at an early point in Tewa and Tiwa (retaining it in Kiowa and Towa).
This account necessitates that the change must have happened before oral high back
vowels had fronted to /e/ in Tewa. The latter possibility seems the more likely insofar as
we maintain a simpler syllable structure in PKT. The former possibility requires us to
posit word-internal or final consonant clusters, but it cannot be ruled out.

With regard to the Tewa reflex of the high back vowel, Harrington (1916) takes
note of a handful of lexical pairs in Rio Grande Tewa in which one form has a vowel /e/
and another a vowel /u/. The pairs are reportedly sound symbolic, the front vowel /e/
representing a relatively small instance of the concept while the high back vowel
represents a relatively large instance, as in (1).

(1) Rio Grande Tewa Sound Symbolism

\begin{tabular}{ll}
be\textsuperscript{e} & small roundish dell \\
he\textsuperscript{e} & small arroyo \\
\text{degi} & small and pointed \\
\end{tabular}

\begin{tabular}{ll}
bu\textsuperscript{u} & large roundish dell \\
hu\textsuperscript{u} & large arroyo \\
dugi & large and pointed \\
\end{tabular}

The first of these seems to be related to the cognate set RGT be\textsuperscript{e}, AT me\textsuperscript{le}, Ta mulu, Pi
molo, ST buru, To p\textsuperscript{i}HI round object, jar while the second seems to be cognate with
Taos hi\textsuperscript{lu} arroyo, gulch, p\textsc{a-h}ER-na ditch (where the usual expected Tewa
correspondence to Taos Tiwa /iɔ / is /e/, cf. section 8.7.2). I have not yet found a cognate
for the third. Significantly, for those where a cognate is available, the alternation reflects
one of the high back exponents: */u/ or the labialization of the preceding consonant,
*/C\textsuperscript{w}V/ (see section 8.7). In other words despite Tewa’s regular mid front reflex /e/, the
language does show a high back reflex corresponding to that seen in the other languages
in at least a few cases. In the above examples, a sound symbolic interpretation may have
developed during a period of variation when the Tewa vowel was changing from high back to mid front, the iconicity of the meaning leading both forms to be preserved.

Another possible cognate set below that shows another instance of a high back reflex in Tewa is presented in Table 8-30.

Table 8-30: High Back Vowel, KT *backside

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pl</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>backside</td>
<td>tʼél</td>
<td>tʼú</td>
<td>tʼú</td>
<td>tʼud</td>
<td>tʼon</td>
<td></td>
<td></td>
<td>*kʼut</td>
</tr>
</tbody>
</table>

Here we see a high back /u/ in Tewa corresponding to a /u, o/ in Tiwa where Tewa /e/ would otherwise be expected. Kiowa shows /e/ rather than the expected /o/, which appears to be a reflex of palatalization (indicating the original stem-initial consonant was */kʼ/ rather than */t'/). The preservation of the high back vowel in Tewa, however, is anomalous.

A similar interaction between palatalization and the high back vowel may be behind the set meaning *child in Table 8-31.

Table 8-31: High Back Vowel, KT child

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pl</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>child, DIMINUTIVE</td>
<td>ɻʼ</td>
<td>ɻʼ</td>
<td>ɻʼ</td>
<td>ɻʼ</td>
<td>ɻʼ</td>
<td>-i</td>
<td>ɻʼ</td>
<td>-y (?)</td>
</tr>
</tbody>
</table>

We find the expected reflexes of high back */u/ throughout Tewa, Tiwa, and Towa, but in Kiowa we find a high front /i/. If these forms are all cognate, then we can suspect that this set comes from a high back vowel preceded by a palatal glide—of which there is next to no evidence in the language, cf. chapter 9.8—or that there was a labiovelar glide followed by a high front vowel. In the former case, the palatal glide would have been lost
in Tanoan but would have been coarticulated with the high back vowel in Kiowa to give /i/, just as in the backside set above. (The reflex /i/ rather than /e/ may then be attributed to syllable structure, the former arising from an open syllable, the latter from a closed syllable.) Under the derivation from *wi, the initial glide must have been lost in Kiowa, while the labialization became coarticulated with the vowel in Tanoan to give high back vowel reflexes (subsequently fronting in Tewa). It will be seen in section 9.8, however, that a reconstructed *wi form descends with different behavior indicating here that something along the lines of the *yu reconstruction may be the better analysis.

Unfortunately, there are not enough morphemes of the appropriate form to confirm the full motivation here.

In summary, the high back oral vowel has been extremely stable in Kiowa-Tanoan. The most extreme change is a lowering and fronting (and possibly unrounding) in the Tewa branch. This is not a phonologically restricted change, however.

8.5.2 Nasal High Back Vowels

Hale (1967) defines two correspondence sets that appear to reflect a nasal high back vowel, his sets *V₂ and *V₆, although it will be suggested that the latter may not actually descend from */u/. These two sets differ only in the Towa reflexes, as seen in Table 8-32.

Table 8-32: Hale's High Back Nasal Vowel Correspondence Sets

<table>
<thead>
<tr>
<th>*Hale</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>Ta</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>*V₂</td>
<td>∅</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>∅</td>
<td>u</td>
<td>i</td>
</tr>
<tr>
<td>*V₆</td>
<td>∅</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>∅</td>
<td>u</td>
<td>∅</td>
</tr>
</tbody>
</table>
The sets are the same except that *V₂ has a Towa reflex /ɨ/ while *V₆ has a Towa reflex /ǫ/. The two do not occur with equal frequency nor is there any apparent evidence of one set deriving from the other in a specific phonological environment.

The first of the correspondence sets, where Towa has /ɨ/, is the more common, appearing in Table 8-33.

Table 8-33: High Back Nasal Vowel Cognate Sets

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>q</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>q</td>
<td>u</td>
<td>j</td>
<td>*u</td>
<td></td>
</tr>
<tr>
<td>say</td>
<td>tøy (&lt; tø' (ROOT))</td>
<td>tū</td>
<td>tū</td>
<td>tū</td>
<td>tø</td>
<td>tū</td>
<td>tį</td>
<td>*tų(C?)</td>
</tr>
<tr>
<td>drink</td>
<td>tʰóm (&lt; tʰ' (ROOT))</td>
<td>suwa</td>
<td>suŋ</td>
<td>suŋ</td>
<td>son</td>
<td>suŋ</td>
<td>šį</td>
<td>*tʰum(V?)</td>
</tr>
<tr>
<td>see</td>
<td>bø̂</td>
<td>mûʔ</td>
<td>mûŋ</td>
<td>mû</td>
<td>mû</td>
<td>mû</td>
<td>mį</td>
<td>*bų(C?)</td>
</tr>
<tr>
<td>seek, look for</td>
<td>dôn</td>
<td>nuwa</td>
<td>nuwe</td>
<td>nû</td>
<td>non</td>
<td>nû</td>
<td>nį</td>
<td>*dûn(V?)</td>
</tr>
<tr>
<td>juniper, cedar</td>
<td>hû́</td>
<td>hû́</td>
<td>hû</td>
<td>hû</td>
<td>hû-la</td>
<td>hį</td>
<td>*hû</td>
<td></td>
</tr>
<tr>
<td>be</td>
<td>mû́</td>
<td>mû</td>
<td>mû</td>
<td>mû</td>
<td>mû</td>
<td>mį́</td>
<td>*bų</td>
<td></td>
</tr>
<tr>
<td>dark</td>
<td>kʰ-gyá</td>
<td>khų́</td>
<td>kʰ-</td>
<td>hį́</td>
<td>*qʰu(QV)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rotten</td>
<td>bôn-</td>
<td>t'o-mû moist, damp</td>
<td>mûl</td>
<td>mûr</td>
<td>mį́ tʰį́</td>
<td>*bydV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>stretch</td>
<td>kyóy tall (S)</td>
<td>tûwa</td>
<td>tûki</td>
<td>tûki</td>
<td>tį́</td>
<td>*kʰqi</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Like the oral high back vowel, nasal */u/ occurs above in both closed and open syllables and following a small variety of consonants. Also like its oral counterpart, there is no evidence that it could occur following a labialized consonant or labiovelar. The only major development is the fronting of the vowel to /ɨ/ following modern palatalized consonants. Otherwise, the vowel has a high back reflex in all of the branches.
The other correspondence set mentioned above has the same reflexes except that Towa shows /ǫ/. This would normally suggest that some factor motivated a split of a single vowel. However, an analysis of the cognate sets in which the correspondences actually occur indicate that it may actually derive from a different vowel. These cognate sets are given in Table 8-34.

Table 8-34: Apparent High Back Nasal Vowel Cognate Sets, Towa /ǫ/

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TÀ</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>lower leg</td>
<td>ǫ</td>
<td>ų</td>
<td>ų</td>
<td>ų</td>
<td>ǫ</td>
<td>ų</td>
<td>ǫ</td>
<td>*ʒ</td>
</tr>
<tr>
<td>bone ( ROOT)</td>
<td>tʰó̃</td>
<td>kʰú</td>
<td>kʰú</td>
<td>xų</td>
<td>xǫ</td>
<td>kʰú</td>
<td>hó̃</td>
<td>*qʰj</td>
</tr>
<tr>
<td>bone, awl</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
<td>ʰ</td>
</tr>
<tr>
<td>fly (n.)</td>
<td>pʰų</td>
<td>pʰų</td>
<td>pʰų</td>
<td>pʰų</td>
<td>pʰų</td>
<td>pʰų</td>
<td>pʰų</td>
<td>*pʰją</td>
</tr>
</tbody>
</table>

Every language shows higher back vowel reflexes, but there are a couple of other interesting anomalies. The most outstanding is the correspondence in the stem-initial consonants of lower leg and bone: Kiowa has /tʰ/ where Tanoan has reflexes of /kʰ/.

Elsewhere we see that this seems to represent a fronting of */qʰ/ in Kiowa preceding a high front vowel. That this fronting does not occur before a high back vowel is bolstered here by the (near) minimal pair kʰó̃gyá dark (from Table 8-33) versus tʰó̃ lower leg.

Another suggestion of a high front vowel is the Towa word for fly, ɸí'yá, which contains a high front vowel. It is not clear which of the two Towa terms given is actually related to
the Tewa and Tiwa cognates (both terms might be related) and the lack of nasalization in \( \phi \text{iy} \) gives pause. However, it otherwise does look close enough to the Tewa and Tiwa forms to suspect a relationship.

Given this evidence, I reconstruct the vowel as */j/ here, the high back reflexes coming from labialization on the preceding consonant. That we get these rather than the reflexes we will see in section 8.7 may be attributable to syllable structure, although it is not clear from the above cognate sets what the syllable structures may have been. This question notwithstanding, it does appear that this correspondence set should not be attributed to the high back nasal vowel */u/ unless further evidence surfaces to suggest it.

### 8.5.3 Summary of High Back Vowel

The oral and nasal high back vowels have developed along relatively straightforward lines. They remain largely unaltered in all but the Tewa languages, where the oral high back vowel */u/ is fronted to /e/. A summary of the reflexes of PKT high back vowels */u/ and */u/ appears in Table 8-35.

Table 8-35: Summary: High Back Vowel Correspondences

<table>
<thead>
<tr>
<th>PKT</th>
<th>CONTEXT</th>
<th>K</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>P1</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>*u</td>
<td>EVERYWHERE</td>
<td>o</td>
<td>e</td>
<td>e</td>
<td>u</td>
<td>o</td>
<td>u</td>
<td>i</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(&gt; i / Cy_)</td>
</tr>
<tr>
<td>*u</td>
<td>EVERYWHERE</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>i</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(&gt; i / Cy_)</td>
</tr>
</tbody>
</table>

In addition to these sets which actually descend from high back vowels in PKT, it does appear that many instances of high back vowels in the modern languages actually
descend from the labialization of a preceding stem-initial consonant coarticulated with the vowel.

8.6 *High Front Vowels*

The most complex developments in Kiowa-Tanoan all appear to involve palatalization and/or the high front vowel. However, like with the preceding two reconstructed vowels, I propose that all of this complexity ultimately stems from just one oral and one nasal vowel. The oral vowel can be notated as */i/* and the nasal vowel as */i̯/*, but their actual articulation may have been more involved. It actually appears that the high front vowels may have been articulated as diphthongs *[ia]* and *[i̯a]*, beginning from a high vowel and ending in a lower mid-to-low front-to-central vowel. This has precedence within the modern languages: Harrington (1928) and other early accounts of Kiowa consistently represent what is today a high front vowel /i/ as a diphthong "ia". Watkins (1984: 16-19) discusses alternations in modern Kiowa between /i/ and /ya/ in a few morphemes. This does lead her to posit an underlying (historical) vowel */ia/* to account for these alternations. I propose that not only these alternating forms, but indeed high front vowels more generally in Kiowa-Tanoan descend from PKT diphthongs *[ia]* and *[i̯a]*.

However, while these high front vowels may have been phonetically diphthongs at the time that the Kiowa-Tanoan languages began separating, they were "in essence" high front vowels. That is, these diphthongs themselves probably derived from high front vowels */i, i̯/* sometime before the final stages of Proto-Kiowa-Tanoan. Indeed, there very well may have been predictable or relatively free variation in at least some
morphemes between a monophthongal and diphthongal pronunciation (as we see in some modern Kiowa forms). Given this probable historical source, and to be able to represent the single vowels with single symbols, I will opt for the present dissertation to represent the PKT vowels as */i/ and */í/. The reader should keep in mind the vowel's tendency to diphthongize as an explanation for the different (high and low vowel) reflexes we see across the different languages.

8.6.1 Oral Front Vowel

8.6.1.1 Primary Correspondences, */í/

Some of the most basic correspondence sets reflecting the high front oral vowel are the two sets that Hale (1967) labels *V₄ and *V₉. These are given in Table 8-36.

Table 8-36: Hale's High Front Oral Monophthong Correspondence Sets

<table>
<thead>
<tr>
<th>*Hale</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>*V₄</td>
<td>a</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td>i</td>
<td>e (&gt; i / W_)</td>
</tr>
<tr>
<td>*V₉</td>
<td>e</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td>i</td>
<td>i</td>
</tr>
</tbody>
</table>

These two sets are identical in Tewa and Tiwa, but differ in Kiowa and Towa. We could posit more than one vowel as a source, which then merged in Tewa and Tiwa. However, it will turn out that an account where a single vowel was split in Towa and Kiowa proves the more streamlined. Hale already notes that in set *V₄, Towa is predicted to show a high back vowel following a historically labiovelar consonant. That is, the rounding on the labiovelar leads the vowel to be backed. Adding to this the further understanding that Towa /í/ tends to be fronted to /i/ following synchronically palatalized consonants (cf. chapter 6.7), and we can account for all of the Towa reflexes as coming from a single
vowel. The Kiowa reflexes are not as readily explained from previous studies, but promising patterns can be distinguished. As it turns out, however, Hale’s *V₉ does not actually occur as such.

Cognate sets illustrating the major correspondences are given in Table 8-37.

Table 8-37: High Front Oral Monophthong Cognate Sets I

<table>
<thead>
<tr>
<th></th>
<th>K₁</th>
<th>RGT</th>
<th>AT</th>
<th>Tₐ</th>
<th>P₁</th>
<th>ST</th>
<th>Tₒ</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>eye</td>
<td>a</td>
<td>t̂a-</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td>i</td>
<td>e (&gt; i)</td>
</tr>
<tr>
<td>prairie</td>
<td>cá-</td>
<td>kí-</td>
<td>ci</td>
<td>ce</td>
<td>ši</td>
<td>sé-</td>
<td>*k̂i</td>
<td></td>
</tr>
<tr>
<td>dog</td>
<td>cá-</td>
<td>kíra</td>
<td>ke</td>
<td>ki-</td>
<td>*qi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>smoke</td>
<td>t̂á-</td>
<td>-ĝya</td>
<td>n̂a-</td>
<td>*i(CV)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fry,</td>
<td>t̂á-</td>
<td>ciwe</td>
<td>ci</td>
<td>ši</td>
<td>sê</td>
<td>*k̂i(CV)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cook</td>
<td></td>
<td>ciwe</td>
<td>ci</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hot</td>
<td>ŝá</td>
<td>ŝi-p’o</td>
<td>li-</td>
<td>lel-</td>
<td>lir-</td>
<td>t’ílæ</td>
<td>be hot to touch</td>
<td>*k̂id(V) (?)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>sweat (?)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*tid(V)</td>
</tr>
<tr>
<td>cry</td>
<td>ŝi</td>
<td>ŝi</td>
<td>si</td>
<td>se</td>
<td>si</td>
<td>šil</td>
<td>*ti(l) (?)</td>
<td>*k̂b̂i(l)</td>
</tr>
<tr>
<td>close</td>
<td>k̂i-</td>
<td>k̂el</td>
<td>x̂ir</td>
<td>gîlé</td>
<td>*q̂i(l)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(v.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tewa and Tiwa share a high front monophthong reflex in these examples. Towa shows /e/ except following a synchronically palatalized consonant, in which case the reflex is high front /ɨ/. The same reflex surfaces in close where the labialization of the labiovelar consonant caused the vowel to be backed to /ɨ/, which is then fronted in modern Towa following the palatalized velar stop /g/ [g’]. In Kiowa it is the low portion of the PKT diphthong */i/ = *[ia] which is reflected in the modern language. The prevailing syllable structure appears to be open.
There are a couple of (uncertain) cognate sets in which a low vowel reflex is 
found in Tewa, shown in Table 8-38.

Table 8-38: High Front Oral Monophthong Cognate Sets, Tewa /a/

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pl</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>dress (TR)</td>
<td>'awi (TR)</td>
<td>&gt; kawe (INC)</td>
<td></td>
<td></td>
<td></td>
<td>&gt; iwi</td>
<td>&gt; ki clothing</td>
<td>*iWi (&gt; qi(Wi))</td>
</tr>
<tr>
<td>sun</td>
<td>pây</td>
<td>pâ'âge sunny place ; pq'yo summer, year</td>
<td>pil summer, year</td>
<td>pel summer, year</td>
<td>pé sun ; pé summer, year</td>
<td>*piC ; *piCV</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is not apparent if the sun set consists of two PKT stems or one. The two forms in Towa suggest that there were two, one for sun and one for summer. In any case Tewa shows a vowel /a/ following a bilabial stop and following a glottal stop. The base roots may have consisted of closed syllables, but this is uncertain. The final vowel in dress is probably the same transitive suffix -e/-i which occurs commonly in the family, but it is still not apparent whether the preceding /w/ is a reflex of a stem-final consonant or an affix-initial consonant. In the sun set, the Kiowa form suggests an original CVC form, but the stem-final consonant of the Tiwa summer word possibly indicates a CVCV form (cf. chapter 10). With only two sets of uncertain cognates, it is unclear if historical syllable structure is the determining factor here. We will see further low vowel reflexes of */i/ in section 8.6.1.3 below.

In another group of potential cognates, we find a high front vowel reflex in Kiowa corresponding to the regular reflexes in the Tanoan languages. These are given in Table 8-39.
Table 8-39: High Front Oral Monophthong Cognate Sets, Kiowa /i/

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>wipe, clean</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td>i</td>
<td>e (&gt;) i</td>
<td>*i</td>
</tr>
<tr>
<td>wipe</td>
<td>pʰɨt (&lt; pʰɨl (ROOT)) (?)</td>
<td>píɾi</td>
<td>píɾi</td>
<td>píɾi</td>
<td>píɾi</td>
<td>pɨɾi</td>
<td>pɨɾi</td>
<td>*pɨɾi</td>
</tr>
<tr>
<td>two</td>
<td>yi</td>
<td>wé-</td>
<td>wiye</td>
<td>wiye</td>
<td>wiye</td>
<td>wiye</td>
<td>wiye</td>
<td>wiye</td>
</tr>
<tr>
<td>chicken, fowl</td>
<td>tʰá-kîl (prairie chicken (?))</td>
<td>di</td>
<td>nɨ li</td>
<td>lɨlu</td>
<td>lelo</td>
<td>diru</td>
<td>déll</td>
<td>*didu</td>
</tr>
</tbody>
</table>

Admittedly there are questionable aspects to all three of these cognate sets with respect to the Kiowa forms. Assuming they are cognates, however, we can note that the syllables are reconstructed as open. As we look at further correspondence sets in the coming sections, however, it will also become apparent that the preceding as well as the following consonant may play a role in determining the reflexes of the high vowel. Bilabials as in *wipe, for instance, appear to be followed by a high vowel reflex in Kiowa in historically open syllables. There is less data regarding glides, like that reconstructed in *two, or voiced stops in an oral vowel context, as in *chicken, but here as well, we get /i/.

These can be contrasted with the cognate sets in Table 8-37 above, which showed a Kiowa reflex /a/, where the vowels in open syllables followed historically velar and alveolar stops.

There is then one attested set so far where we see both a high front vowel reflex in Kiowa and a low vowel reflex in Tewa. This is the *throw away* set that appears in Table 8-40.
Unfortunately I have yet to find any clear Tiwa cognates. The source of the nasalization in Towa is also unclear, if that stem is cognate, but the vowel quality is otherwise as expected. Otherwise, it appears that we can say the high vowel */i/ is realized as /i/ in an open syllable following this ejective velar in Kiowa, much as in the sets in Table 8-39. In Tewa, on the other hand, it is the low portion of the historical diphthong *[ia] which is preserved as the syllable nucleus. The high front portion appears then to have been reinterpreted as palatalization of the preceding consonant.

As mentioned at the beginning of this section, the correspondence set that Hale (1967) calls *V₉ is not really attested. The reflexes he identifies on which he bases the set do descend from the PKT high front vowel */i/, but they actually fall into different correspondence series. Further reflexes of the high front vowel will be covered in the following sections.

### 8.6.1.2 Front Diphthong

Hale (1967) posits another vowel correspondence set which is also reconstructable as a high front vowel. This is Hale’s set which he labels *V₈, given in Table 8-41.
Table 8-41: Hale’s High Front Oral Vowel Correspondence, Tiwa /ia/

<table>
<thead>
<tr>
<th>*Hale</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>Ta</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>*V₈</td>
<td>e</td>
<td>i</td>
<td>i</td>
<td>ia</td>
<td>i</td>
<td>ia</td>
<td>e</td>
</tr>
</tbody>
</table>

The reflexes in Kiowa, Tewa, and Towa are akin to those we saw the correspondence sets of the previous section except that Kiowa is only reported as showing mid vowel /e/ and Picuris Tiwa has high vowel /i/. While these languages have monophthongs, note that Taos Tiwa and Southern Tiwa both retain the proposed diphthongal pronunciation of the PKT vowel */i/. I indeed suggest that the set descends from this same high front diphthongized oral vowel.

Table 8-42 provide one of the primary correspondences for this series, illustrating Hale’s *V₈ set.
Table 8-42: High Front Vowel Cognate Sets, Tiwa /ia/, Kiowa /e/

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pl</th>
<th>ST</th>
<th>To</th>
<th>PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>sit upright (S/D); set (S/D)²¹</td>
<td>cél ; cé (&gt; cé 1 (IPF.STEM)) set (S/D)</td>
<td>čá ~ čá (&lt; ñq ; kíri (&gt; kí (INC)) set (S/D)</td>
<td>k’qNy</td>
<td>ki ; ki set (S/D)</td>
<td>kiay ; kiay set (S/D)</td>
<td>e</td>
<td>*qikį &gt; *qikį</td>
<td></td>
</tr>
<tr>
<td>tear, break</td>
<td>sá (&gt; sá¹l- (IPF)) (?) ; sé bé prick (?)</td>
<td>sive</td>
<td>siw</td>
<td>liapi ; liab crack (ITR)</td>
<td>liapi ; liap crack (ITR)</td>
<td>šew (?)</td>
<td>*tip(i)</td>
<td></td>
</tr>
<tr>
<td>talk, speak</td>
<td>tét (&lt; té 1 (ROOT))</td>
<td>cia (&gt; ciati (NEG) ; ciaya (INC)</td>
<td>šía (&gt; šiate (PASS))</td>
<td>šè</td>
<td>*kIIt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flint, knife</td>
<td>sé se arrowhead</td>
<td>ci’ flint ; ciyó knife</td>
<td>cia ciyó knife</td>
<td>cia ci</td>
<td>šía</td>
<td>tį arrowhead</td>
<td>*kI(C?)</td>
<td></td>
</tr>
<tr>
<td>fear</td>
<td>pe (&gt; pétt’d (IPF) , pé gù (NEG))</td>
<td>píhač’</td>
<td>pía</td>
<td>pía</td>
<td>pè</td>
<td>*pI(C?)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above sets largely follow the series identified by Hale. The Towa reflex /e/ is raised to /i/ following a synchronically palatalized consonant in the language, just like in the previous correspondence set, as can be seen in arrowhead. In Tewa the vowel is still realized as /i/. However, in the historically closed syllable form of sit upright, the low part of the PKT diphthong is realized as the nucleus while the high part is coarticulated.

²¹ It appears that Northern Tiwa does not permit closed syllables with the rime /iay/. These sequences are contracted to /i/, explaining the correspondence between TA and Pl ki set and ST kiay.
with the stem-initial consonant as palatalization. It is in Kiowa and Tiwa where we see distinctive reflexes. Here Tiwa shows what appears to be a preservation of the original diphthong (except in Picuris Tiwa, where it has apparently monophthongized to /i/). In Kiowa the reflex is /e/, as in Towa, a reflex midway between the high and low portion of the original diphthong.

If this correspondence set descends from PKT */i/, then the question is when do we get these “diphthongal” reflexes (to identify the series by the prominent Tiwa reflexes). This is not entirely obvious from the synchronic forms of the cognates, but it appears that they may occur when there was a historical stem-final consonant. This may mean that the diphthong was preserved in closed syllables. However, we still find the same vocalic reflexes in forms where the transitivizing suffix is attached, which appears to have the form -e/-i, as in set upright (in RGT, at least) and tear. If this suffix did consist of only a vowel, then it would have had the effect of changing a CVC stem with a closed syllable to a CVCV form with an open syllable. In this case the vowels may have been preserved by analogy with the stem lacking the suffix. Alternatively, the suffix may have had an onset consonant by which a CVC stem with the suffix may have been interpreted as CVC.CV, retaining a closed syllable. The suffix’s onset consonant must have been elided or coarticulated with the stem-final consonant to produce the modern forms.

Evidence for a stem-final consonant in some stems is very subtle and questionable, however. Since all branches of the family have lost some set of original stem-final consonants, they often only appear in certain morphological constructions.

---

22 I hold off reconstructing the details of stem-final morphology in this work until further research can be done. I have seen suggestions in certain data, however, that the suffix may have had the form */wi/ or */yu/.
These lost consonants are therefore more likely to show up in some form with morphologically rich verbs rather than with nouns. Moreover, when they occur, they are not actually in coda position. Thus we see stem-final consonants in *talk*, *flint*, and *fear*, but only when we consider multiple constructions across all languages. Finding greater security in these final consonants will necessitate further research into the morphology.

The above is not the only correspondence set we see that involves these vowel reflexes. Table 8-43 presents cognate sets in which the reflexes are the same as above in all but Kiowa.

Table 8-43: High Front Oral Vowel Cognate Sets, Tiwa /ia/, Kiowa /a/

<table>
<thead>
<tr>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>i</td>
<td>i</td>
<td>ia</td>
<td>i</td>
<td>ia</td>
<td>e</td>
<td>*i</td>
</tr>
</tbody>
</table>

*mountain* | my-p’âl rubbish pile | p‘iŋ | p‘iŋ | p‘ian | p‘in | p‘ian | p‘ê (> p’êteš (l)) | *p‘id |

*heart* | píŋ heart ; píŋge middle | píŋ heart ; píŋge middle | pia heart | pia heart ; píŋge middle | pê‘ | *píd(?) |

*tie* | t’á dú block, stop up (?)²³ | c’iŋ | c’iaki (> ci (INC)) | c’ike | č’iaki (> šiay (INC)) | t’ê sê (> sêse (INC)) | *k’i(m) (> *gim) |

*walk* | c’ě (INC) (< zê m (ROOT) (?) | c’ě (INC) (< yî (ST)) | (yî) | cia (INC) (< yia (ST)) | či | šia (INC) (< čia (ST)) | *k’i(m) (< *gim) |

Here Kiowa presents its low front vowel reflex of */i/. Once again we appear to be able to reconstruct a stem-final consonant, which may have been in coda position. The

²³ Laurel Watkins (p.c.) suggests Kiowa t’e-dá- splice, tie together as a more plausible alternative cognate.
distinctive Kiowa reflex here appears to be stimulated by the stem-initial consonant. In the two most promising cognates, *mountain* and *tie*, the low Kiowa reflex follows an ejective. More appears to be going on in *walk*, where the low vowel is also nasalized, apparently a reflex of the stem-final nasal consonant. In yet another set of divergences, we find a Kiowa nasal vowel /ɛ/ corresponding to the Tiwa diphthong correspondence in Table 8-44. Tewa also shows an unusual reflex in *sleep* and Towa irregularities in both *ice* and *sleep*.

Table 8-44: High Front Oral Vowel Cognate Sets, Kiowa Nasal Reflex

<table>
<thead>
<tr>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>e</td>
<td>i</td>
<td>i</td>
<td>ia</td>
<td>i</td>
<td>ia</td>
<td>e</td>
<td>*i</td>
</tr>
<tr>
<td>walk</td>
<td>zɛ’mə</td>
<td>yi̞</td>
<td>yia</td>
<td>ċi</td>
<td>ćia</td>
<td>*g/jm</td>
<td>(&gt; k̂i(m))</td>
</tr>
<tr>
<td>ice</td>
<td>tɛ’-gya</td>
<td>’o’-yi̞</td>
<td>’o’-yi̞</td>
<td>p’a-čia</td>
<td>p’a-čia</td>
<td>wâ’-sq</td>
<td>*k̂iM</td>
</tr>
<tr>
<td>sleep</td>
<td>dɛ’</td>
<td>yô</td>
<td>yóh</td>
<td>yia</td>
<td>ci</td>
<td>ćia</td>
<td>di’</td>
</tr>
</tbody>
</table>

In the *walk* and *ice* sets, it appears that the Kiowa vowel has simply been nasalized by a stem-final consonant, still apparent in the imperfective form of *walk*. Such a lost nasal also seems to be behind the nasal vowel of *sleep*. However, the rest of the vowel correspondences do not fit any of the regular sets we see elsewhere. I suggest here that the original nucleus may actually have been the high back vowel */u/ preceded by a palatalized front velar. The high back vowel is preserved as such only in Towa. In Kiowa and Tiwa the palatalization would have had to have been coarticulated with the high back vowel leading to vowel qualities that have merged with the reflexes of */i/, cf. the Kiowa

---

24 The stem-initial consonant does not show the regular correspondence: Kiowa /c/ usually corresponds to Tanoan /k/, cf. chapter 9.5.2. This nominal-incorporative stem in Kiowa may actually be suppletive, coming from the ablauted nominal-incorporative stem of *’iq* *come*, cf. RGT *’æ’ come (PF) > kæ’æ’ come (INC).
reflex *kʷut back in section 8.5.1. In Tewa the combination has merged with the regular low vowel reflex /o/. This stem in particular requires further consideration.

Interaction between secondary articulation on a consonant and the actual vowel nucleus appears to be behind the cognate sets of Table 8-45.

Table 8-45: High Front Oral Vowel Cognate Sets, Labialization I

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>onion</td>
<td>o</td>
<td>i, e</td>
<td>i, e</td>
<td>iw</td>
<td>iw</td>
<td>iw</td>
<td>i, e</td>
<td>*iʔ, *u</td>
</tr>
<tr>
<td></td>
<td>sôl</td>
<td>sî̂</td>
<td>sîyã</td>
<td>liw</td>
<td>liw</td>
<td>liw</td>
<td>tîwé</td>
<td>*kʷil</td>
</tr>
<tr>
<td></td>
<td>eagle</td>
<td>ce’</td>
<td>ce’</td>
<td>ciw</td>
<td>ciw</td>
<td>šiw ~ šu</td>
<td>sê’</td>
<td>*kʷu (?)</td>
</tr>
</tbody>
</table>

In both of these sets, we see a monophthongal high front vowel /i/ in all three Tiwa languages, a realization found only before stem-final /w/, as pointed out in Trager (1942). This corresponds to /i/ in Tewa and Towa in onion and /e/ in those same languages in the eagle set. The Kiowa cognate to onion contains the vowel /o/, implying either a high back vowel */u/ or labialization coarticulated with a vowel. The stem-final /w/ in Tiwa in both of these forms does seem to indicate a stem-initial labialized consonant, although the particulars of this reflex is not clear yet. From these observations, it appears that labialization was retained in onion in the /o/ in Kiowa and perhaps also in the /i/ (and the /w/) in Towa. In Tiwa it is preserved only in the stem-final consonant, which has become /w/. In Rio Grande Tewa the labialization is lost entirely while in Arizona Tewa it may be:

---

25 I hypothesize that a stem-final */l/, or another sonorant consonant, became labialized to /w/ in Tiwa by assimilation to a preceding stem-initial labialized consonant. This could explain such correspondences between /l/ in Kiowa and /w/ in Tiwa as we see in onion. Alternatively, the consonants may not be directly cognate: the */l/ reflected as /l/ in Kiowa may have simply elided in Tiwa while the Tiwa /w/ may represent an original coda /w/.
retained in the vowel of the second syllable\(^{26}\). In *eagle*, on the other hand the labialization is coarticulated with the vowel in Tewa, causing the verb to merge with reflexes of */u/* which has fronted to */e/*. In Towa the labialization is lost entirely and in Tiwa it is preserved only in the stem-final consonant.

By another account, the syllable nucleus may have been the high back vowel */u/* preceded by a palatalized consonant. The palatalization was then reanalyzed as the syllable nucleus while the original vowel gave rise to the Tiwa coda */w/* and the Kiowa vowel */o/*. Note that under either hypothesis, these two stems are reconstructed to be nearly homophonous. They may have differed in number of syllables or syllable structure.

Finally, labialization appears to be behind the vowel correspondences we see in the sets in Table 8-46.

Table 8-46: High Front Oral Vowel Cognate Sets, Labialization II

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>die,</td>
<td>pè</td>
<td>ču</td>
<td>k'ù</td>
<td>piw</td>
<td>piw</td>
<td>piaw</td>
<td>pë</td>
<td>*pʷi(C?)</td>
</tr>
<tr>
<td>dead</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flea,</td>
<td>šuwa</td>
<td>kʰuwa</td>
<td>pʰiaya</td>
<td>pʰiči</td>
<td>phiače</td>
<td>*pʰhig(V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>louse(^{27})</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>wing</td>
<td>c'ól</td>
<td>k'uŋ</td>
<td>k'ुŋ</td>
<td>k'iawa</td>
<td>k'i aw</td>
<td>k'ìawa</td>
<td>k'á: tů</td>
<td><em>qʰ</em>id(V)</td>
</tr>
</tbody>
</table>

---

\(^{26}\) It is not apparent how this Arizona Tewa form has developed in comparison to its cognates. The status of nasalization in this stem is also not transparent.

\(^{27}\) Possibly related to this word is the semantically similar form *pʰu louse, flea seen in the following cognate set: Ki pʰó (> pʰóy lice), RGT pʰe, Ta k'ę-pʰu bedbug, To phì.
Labialization surfaces as the Tewa vowel reflexes in all three sets and as the Kiowa vowel in *wing*. In Tiwa *die* it also appears to be reflected in the coda consonant /w/\(^{28}\). Otherwise, labialization is lost before the high front vowel\(^{29}\). The nuclear high vowel is retained as a vowel in Tiwa and partly in Towa, although the vowel reflex in Towa *die* previews a change we will see in the next section. In Tewa *die* and *flea* and the Kiowa word for *wing*, however, it is also retained as the palatalization and/or affrication of the stem-initial consonant.

The above section has addressed those cases where the PKT high front oral vowel */i/* typically surfaces as some kind of high vowel. The next section will examine cases where the low vowel portion of the historical high vowel diphthong is the dominant reflex.

### 8.6.1.3 Oral High Front Vowel Lowering

As yet another reflex of the high front diphthongized PKT vowel */i/*, there is also the set roughly equivalent to Hale’s (1967) *V\(_7\)*. Specifically, he proposes the correspondence set in Table 8-47, which display lower vowels, usually fronted, across the board.

Table 8-47: Hale’s Low Front Oral Vowel Correspondences

<table>
<thead>
<tr>
<th><em>Hale</em></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>V(_7)</em></td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>ia</td>
<td>e</td>
<td>æ</td>
</tr>
</tbody>
</table>

\(^{28}\) I am not sure if Tiwa *kʼiawɔ* *wing* is monomorphemic or if it is a compound *kʼi-a-wɔ* feather-stem. If it is monomorphemic, then the /w/ here may reflect an originally labialized stem-initial consonant.

\(^{29}\) The labialization is lost, that is, if the original stem-initial consonant was a bilabial in *die* and *flea*. If it was originally a velar (cf. chapter 9.5.3), then the labialization is preserved in Kiowa, Tiwa, and Towa in the initial bilabial stop.
However, further inspection reveals that Hale’s Kiowa correspondence is not amply attested. His published article provides only a single cognate set supporting Kiowa /a/, which does not include a Tiwa reflex (the set is\[^{30}\text{K}s\text{á} \text{coy} \text{urine, RGT s\text{á} \text{feces, To t\text{á} \text{excrement}}\] and one other set that supports the Tanoan correspondences (RGT t\'a: dry, thin, TA t\'a dry, thin, To t\'á: dry, thin). The Tanoan correspondences occur frequently enough to support that portion of the correspondence set, but Kiowa cognates with /a/ as correspondence are in short order.

In fact, it appears that even the correspondence set(s) among the Tanoan languages is relatively uncommon. This is particularly noticeable from the perspective of the Tiwa languages where the vowels TA /a/, Pt /ia/, ST /e/ seem to reflect only the proto-language vowel behind the above correspondence. The lower front vowels in each of these languages occurs relatively infrequently in the stressed syllable of lexical morphemes compared to low back, higher front, or high back vowels. A comparable distribution is not as immediately obvious for the /a/ of Kiowa, the /a/ of Towa, or the /æ/ of Towa since each of these modern vowels appear in multiple correspondence sets\[^{31}\]. This lower type frequency turns out to be a reflection of its origin as a historically derived vowel. The correspondence sets to be described appear to originate by retaining the lower portion of the diphthong *[ia]* pronunciation of */i/*.

\[^{30}\text{Furthermore, there is a question of whether the Kiowa word for } \text{urine} \text{ is directly cognate with the Tanoan word for } \text{feces (RGT sú; TA la feces; la-p\'s diarrhea; Pt lia; ST le; To t\text{á}); or is it rather cognate with the similar Tanoan morpheme for } \text{urine (RGT so\text{y/o; TA lb, Pt la, ST la})}.\]

\[^{31}\text{We already saw Towa /æ/ as a reflex of */a/; corresponding with low back vowels of the other languages. Kiowa /a/ was already seen in section 8.6.1.1 to correspond to high vowels in Tanoan. Tewa /a/ will also correspond to the Tiwa central vowel /i/ in section 8.6.1.4. It does turn out that all of these Kiowa and Tewa low front reflexes do indeed usually descend from a single high vowel source, despite the various correspondence sets.}\]
There are various pieces of evidence suggesting that the low front reflexes in the modern languages\textsuperscript{32} represented in Hale’s correspondence set are indeed derived from or otherwise related to */i/.

In Kiowa, velars are always palatalized before a low front vowel /a/. This is a phonological regularity in the language. Palatalization (or, tautosyllabic velar-palatal glide sequences, to be non-committal) before any other vowel is rare, sporadic, and lexically specific. One could argue that this is simply a synchronic rule that palatalizes velars before front vowels. After all, there is no palatalization contrast in the language before high front vowels and mid front vowels do not occur following velars. However, correspondences quickly indicate a relationship with high front vowel reflexes.

Another piece of evidence is the diphthong reflex /ia/ we see in Picuris Northern Tiwa. The diphthongs that we find in Taos Northern Tiwa and Southern Tiwa all correspond to monophthongs in Picuris. Trager (1942) suggests that Picuris lost the older Tiwa diphthongs. However, despite this loss, Picuris in its turn shows a diphthong where Taos and Southern Tiwa have a monophthong. Namely, it has /ia/ regularly corresponding to Taos /a/ and Southern Tiwa /e/. Assuming this were originally simply a low front vowel equal to any other vowel that could occur in any phonological environment, there is the question of why it would develop into a diphthong—and moreover, into the specific diphthong /ia/. Under the analysis here, the development of this diphthong becomes more transparent: Picuris is the more conservative Tiwa language

\textsuperscript{32} The Tewa reflex /a/ is not actually pronounced as front, so this description is being used as a short-hand way of discussing the apparent historical change. The Tewa oral low front vowel /æ/ is rare and seems to occur only by denasalization of /æ/ in the language. It appears that there was a shift in Proto-Tewa that raised the low back reflex of */a/ to modern /o/ while the reflex */[a] of the PKT high vowel was backed to low back /a/. 
here, preserving the original diphthongal pronunciation of PKT */i/. Taos Tiwa and Southern Tiwa then lost any direct reflex of the high part of the diphthong, only Southern Tiwa partially preserving it in its mid vowel reflex /e/.

The reconstruction of the source vowel as a high front diphthong *[ia], notated here as */i/, helps to explain the correspondence sets we see below. In these sets, the Tanoan languages always have a (front) low vowel while the Kiowa cognates have either a high front vowel or a low vowel in the different sets. This can be contrasted with the correspondence sets in sections 8.6.1.1 and 8.6.1.2 above where Kiowa has a mid or low front reflex and Tanoan languages higher reflexes even though all of these sets are proposed to descend from the same PKT vowel */i/. As in the previous sections, the different reflexes and correspondence sets can be attributed to the influence of adjacent consonants.

For the most part, the Tanoan reflexes are consistent, matching the expansion of Hale’s *V7 correspondence set given at the beginning of this section. Kiowa, on the other hand, shows some variability in how the vowel surfaces. One reflex is /i/, where the high portion of the diphthong tends to be preserved, although some constructions may lead the low portion of the diphthong to surface even in the modern language. Examples of cognates involving this correspondence set are given in Table 8-48.
The Kiowa morpheme for *fire* is realized as *pʰyá*- or *pʰyá*- in a small set of compounds, overtly realizing the high-low sequence of the original diphthong *[ia]*. Similarly, the inverse number form of *sister* is *pʼyóy*, where the low portion of the vowel appears and is raised and rounded to /o/ when followed by the inverse suffix -y[^33]. As noted above, Watkins (1984: 16-19) provides a good discussion of the synchronic variation of /i ~ ya/ and of contrasting morpheme forms that show the alternation. In his vocabulary of Kiowa, Harrington (1928) consistently writes the high front vowel as a diphthong /ia/. It is not clear if this consistency was a standardization on Harrington’s part, was an idiolectal (but conservative) feature of the speech of his consultants, or was generally true of Kiowa speakers in the early 20th century. In any case the diphthongal pronunciation had largely given way to a monophthongal /i/ by the latter half of the 20th century when the next linguistic research was done. This suggests that the full raising to /i/ in such examples was not accomplished until relatively recently[^34].

[^33]: Published synchronic analyses of Kiowa have proposed that the suffix is -oy, occurring as it does with a few other /i/-final words. Watkins (1984: 81) gives two /o, ǫ/-final words that just take -y, with an accompanying change in tone. Seeking a coherent diachronic analysis, it is probable that these cases all ultimately reflect a single inverse suffix. The suggestion here, however, is that the modern Kiowa /o/ may reflect the low vowel component of the original stem diphthong.

[^34]: Note what the present proposal also indicates about the change. The vowel is proposed to have been originally */i/, which subsequently took on articulation as a diphthong *[ia]* in many if not all
We can note in these examples that this correspondence set occurs in a diachronically open syllable following bilabial stops, particularly the ejective and aspirated bilabial stops. In closed syllables, the low reflex /a/ is preferred in Kiowa and higher vowel reflexes in the other languages (section 8.6.1.1). Note that in the Kiowa compound and inverse forms of the words given, it appears that the vowel did end up in a closed syllable, perhaps helping to explain why the diphthong quality was retained in these environments.

In addition to the correspondence sets above, consider the cognate set for *person* given in Table 8-49.

Table 8-49: High Front or Low Oral Vowel Cognate Set, KT *person*

<table>
<thead>
<tr>
<th></th>
<th>Kt</th>
<th>RGT</th>
<th>AT</th>
<th>Tá</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>person</em></td>
<td>k’i’ (&gt; k’ya’- (COMP)) man ; k’i’ (&gt; k’yóy (i)) husband</td>
<td>t’owa</td>
<td>t’owa</td>
<td>t’oy</td>
<td>t’ay</td>
<td>t’ay</td>
<td>t’ê</td>
<td>*t’ig(V) (?) *k’ag(V) (?)</td>
</tr>
</tbody>
</table>

Kiowa here shows the same high front reflex (alternating with a /ya/ sequence in morphologically complex constructions, e.g. *k’yá’-hî* man (male-real), *k’yóy* husbands (i)). The Tanoan languages, on the other hand, show low back vowel reflexes rather than the expected low front forms (except in Towa where the vowel is ambiguous, /æ/ being a reflex of both PKT low vowel */a/ and of lowered */i/). It appears that the coda environments. Where the low portion of the diphthong is not preserved, as in the above examples, the vowel has returned to a high front realization as [i]. It gives the appearance that a change in progress was aborted and "retreated" to the original form in at least some environments.
consonant */g/ caused the lowered reflex of */i/ to be backed in at least Tewa and Tiwa\(^{35}\). Alternatively, the vowel may have originally been a low vowel */\(\alpha/\) that has been raised and fronted by palatalization of a preceding */k\(\stackrel{\cdot}{i}/\), perhaps applying here because of a closed syllable or other motivating factors.

The above correspondence sets seem to be restricted to certain classes of consonants, namely aspirated and ejective bilabials and ejective velar stops, although examples are few. Following unaspirated and aspirated alveolar, front velar, and back velar stops in open syllables, the Kiowa reflex is a low back vowel, corresponding to the low front vowels of the Tanoan languages. That is, not only is the high portion of the PKT diphthong lost, but the low portion is backed to */\(\alpha/\) in Kiowa.

Table 8-50: High Front Oral Vowel Cognate Sets, Kiowa */\(\alpha/\), Tanoan Low Front Vowels

<table>
<thead>
<tr>
<th>set, serve</th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>sō’ (&gt; tʰɔ’-</td>
<td>c</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>ia</td>
<td>e</td>
<td>æ</td>
<td>*i</td>
</tr>
<tr>
<td>sit, serve (INC))</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tobacco</td>
<td>sō’-top pipe</td>
<td>sā’</td>
<td>sa’</td>
<td>sa</td>
<td>sia</td>
<td>se (&gt; seke (PASS))</td>
<td>šā’</td>
<td>*tʰi(C?)</td>
</tr>
<tr>
<td>feces</td>
<td>sō’-gya</td>
<td>sā’</td>
<td>sa’</td>
<td>la</td>
<td>lia</td>
<td>le</td>
<td>t’ːô’yē</td>
<td>*ti(y?)</td>
</tr>
<tr>
<td>mother</td>
<td>kō’ (VOC) ; cō’ (1/3 POSS)</td>
<td>ka</td>
<td>kia</td>
<td>ke</td>
<td></td>
<td></td>
<td>*qi(C?)</td>
<td></td>
</tr>
</tbody>
</table>
All of the Tanoan languages show their usual vowel reflexes, except the Towa word for tobacco which shows nasal /q/ rather than the expected /æ/. It is uncertain what is occurring in this form. In all of these sets, the Kiowa vowel reflex is low and back.

Notice that in all of these sets, there is a stem-initial consonant that is synchronically alveolar, the only exception being certain velar-initial forms of mother. It is difficult to tell whether there was originally a stem-final consonant in these forms, although there are hints in set, tobacco, and feces that there was.

We find the same low back Kiowa reflex in the following set in Table 8-51 where it corresponds to high front vowels in the other languages.

Table 8-51: High Front Oral Vowel Cognate Set, KT six

<table>
<thead>
<tr>
<th>KT</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>P1</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>six</td>
<td>mɔ̨-sɔ̨</td>
<td>sì</td>
<td>sì</td>
<td>mɔ̨-lì</td>
<td>mə-ɬe</td>
<td>mə-ɬi</td>
<td>mɬ-ɬi</td>
</tr>
</tbody>
</table>

There is no evidence that the syllable was closed, if this is relevant to the reflex of this vowel. The Kiowa vowel may simply be assimilation to the vowel of the preceding syllable (nasalization notwithstanding), or it may be the most regular reflex of */i/ following a historically alveolar consonant. In this latter case, we would have to determine how we get Kiowa /sa/ sequences, cf. section 8.6.1.1.

A correspondence set which may be particularly interesting—depending on what the valid Kiowa cognate is—is Hale’s (1967) set for dry. Hale does not posit any Kiowa cognate. Table 8-52 below posits two possibilities, as well as expanding the Tewa, Tiwa, and Towa data.
The most plausible Kiowa cognate to the Tanoan forms is the morpheme that actually means *dry in Kiowa, tʰáp. If this is a valid cognate, it shows the sporadic change in laryngeal feature of palatalized stops discussed in chapter 9.1.3 (namely */t'/ > /tʰ/). The reflex of the vowel is the low front /a/ when followed by coda /p/, but is low back /ɔ/ when followed by /l/. Accounting for the vocalic difference appears to depend on the analysis of the stem-final consonants. That these two Kiowa words are related is suggested by the Tewa and Tiwa words for *dry, which have an additional meaning of thin, skinny describing human beings36. The common /tʰ/ onset of Kiowa tʰáp *dry and tʰót *thin suggests the words share an etymology.

There are finally a couple of correspondence sets in Table 8-53 which show the regular low front vowel reflex of */i/, but do not necessarily belong with any of the discussions above.

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36 The Towa cognate does not have this additional meaning, at least not as recorded in my database. However, Hale (1956-1957) gives the form meaning be skinny as hó-mi, a compound that appears to be morphologically composed as bone-be. In other words, a similar metaphor to that used in Tewa and Tiwa appears to be in operation: skinness as dryness and desiccation.
In the *make* set, I have yet to identify a Kiowa cognate and the Tanoan cognates have the regular low front vowel sound correspondence. In the *laugh* set, we see the same correspondence among vowels in Tanoan plus a mid vowel /e/ in Kiowa. In both cases we find stem-initial bilabial consonants, which tend to be followed by the low vowel reflex of */i/*, depending on the phonotactic structure of the morpheme. It is not presently clear in either of these cognate sets whether to reconstruct a stem-final consonant—it would probably be a highly sonorant sound, like a glide, given the limited representation of any consonant in the modern languages—or whether it formed a closed or open syllable. Based on the preceding discussion, I would predict that a coda consonant should be reconstructed to both of these sets.

While low vowel reflexes of */i/* are not entirely uncommon in individual languages, it is relatively infrequent that they correspond as above. A more frequent group of correspondence sets that seems to reflect an original high front vowel is discussed in the next section.

### 8.6.1.4 Origin of the Tiwa Central Vowel and Correspondences

One of the most unique vowels in family-internal comparative perspective, is the Tiwa central vowel /ɨ/. This Tiwa vowel shows correspondence with vowels in the other languages that otherwise occur in different correspondence sets. Hale’s (1967) proposed correspondence is labeled *V₃, given in Table 8-54.

Table 8-54: Hale's Central Vowel Correspondence Sets

<table>
<thead>
<tr>
<th>*Hale</th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>*V₃</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>o</td>
</tr>
</tbody>
</table>
Note that Kiowa and Tewa show their low front vowel, proposed in section 8.6.1.3 to descend from high front */i/, while Towa shows a mid back rounded vowel, the same as is seen corresponding to the Tiwa diphthong /iɔ, ia/ (section 8.7 below). The Tewa-Tiwa-Towa correspondence is amply demonstrated, but Kiowa shows a small variety in its correspondences. Importantly, this is the same variety as is seen with the reflexes of */i/ in the previous sections.

I do find difficulty in arriving at a full account of this vowel set given the modern reflexes and the cognate sets in which they appear. There is thus the suggestion that it may be reconstructable as a fully independent phonemic vowel of Proto-Kiowa-Tanoan (which we could label */a/ as a median exponent of its various realizations). However, there are curious features of the cognate sets in which it appears which lead me to think that the vowel does ultimately derive from one of the three proposed PKT vowels. I will provide my thoughts and observations on the matter and reconstruct this vowel series as a reflex of the proposed three-vowel system, but the reader should recognize that this analysis is tentative at the moment. In the proposed reconstruction columns of the following tables, I will therefore mark the vowel as */ı/. This symbol stands not only for the vowel itself, but also to potential secondary articulation features on the surrounding consonants.

Cognate sets involving correspondences with Tiwa /i/ appear to reflect both what I am reconstructing as a high vowel and what I am reconstructing as labialization or a high back vowel. This can already be seen in Hale’s proposed correspondence above, taking into consideration my analysis in other sections of this chapter: Kiowa and Tewa have a corresponding low front vowel, typically reflecting PKT */i/, and Towa has a
corresponding higher back rounded vowel, as occurs in labialization contexts. This will be further supported as we see that the Kiowa reflex is often also a high front /i/.

Aside from the Towa vowel, the Tiwa vowel suggests labialization following the analysis of the diphthong /ɨɔ, ia/ to be presented in section 8.7. There is an articulatory relationship as illustrated by the use of the same transcription symbol /i/ for both the central monophthong and the diphthong. Also, it will be seen that in Southern Tiwa /ia/ is becoming /i/ before a liquid /r/, indicating at least some relationship between the vowels. At the same time, we can see that Picuris Tiwa has the same vowel /i/ in both correspondence sets, monophthongization of the diphthong already having happened (or there simply was never a difference).37

Example cognate sets that illustrate the correspondence above appear in Table 8-55.

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37 If this is the case, that there was no diphthong when Picuris Tiwa separated from the other Tiwa languages, it would indicate that Taos Northern Tiwa and Southern Tiwa form a subgroup as opposed to Picuris Tiwa, having a shared innovation of diphthongization. There is not much evidence for this beyond the shared diphthongs.
Table 8-55: High Front Vowel Cognate Sets, Tiwa /i/, Kiowa /a/

<table>
<thead>
<tr>
<th></th>
<th>Kí</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>toe</td>
<td>ʔn³ ál</td>
<td>ʔŋkhá·</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>o</td>
<td>*iʔ</td>
</tr>
<tr>
<td>grow</td>
<td>ʔá·</td>
<td>ʔá·-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ō</td>
<td>*ʔd-qʰIL</td>
</tr>
<tr>
<td>branch</td>
<td>ʔá· (&gt;</td>
<td>ʔá dɔ (l))</td>
<td>ʔá bow</td>
<td>ʔi</td>
<td>ną-í (w)</td>
<td>ną-í (w) leaf</td>
<td>ō (&gt; ʔteš (l))</td>
<td>*ʔIC</td>
</tr>
<tr>
<td>female-in-law</td>
<td>tʰá· (&gt;</td>
<td>tʰê· (l))</td>
<td>ʔa’e ~ sa’i</td>
<td>sa’i</td>
<td>siyí daughter-in-law</td>
<td>sīi</td>
<td>*kʰbI(?i)</td>
<td></td>
</tr>
<tr>
<td>write, paint</td>
<td>tʰá</td>
<td>ta</td>
<td>ti</td>
<td>ti</td>
<td>ti</td>
<td>tô ·</td>
<td>*tlm(?)</td>
<td></td>
</tr>
<tr>
<td>thread, string, rope</td>
<td>ph²átkyá fabric, dry</td>
<td>ph₄-mų’ yucca</td>
<td>ph³alų yucca</td>
<td>pʰi</td>
<td>phi wire</td>
<td>fó · rope</td>
<td>*pʰIL</td>
<td></td>
</tr>
</tbody>
</table>

We do almost always find some consonant following the vowel when viewed comparatively, but whether this was a coda or the onset of another syllable is unclear.

Interestingly in the grow and branch sets we do find a labiovelar glide in Tiwa (and Arizona Tewa) while in female-in-law, the Taos Tiwa form has a diphthong /ɨɔ/, suggesting a labiovelar consonant onset, as per section 8.7. Note also that the correspondence of the stem-initial aspirated consonants in toe indicate a back velar stop preceding a high front vowel (cf. chapter 9.4.1).
A labial environment is also suggested by the Arizona Tewa cognates in a few sets. This language shows a coda /w/ following its low vowel reflex, as seen in Table 8-56.

Table 8-56: High Front Oral Vowel Cognate Sets, Tiwa /ɨ/, Tewa /aw/

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>day</td>
<td>kʰi</td>
<td>thá</td>
<td>tʰaw</td>
<td>tʰi</td>
<td>tʰi</td>
<td>thi</td>
<td>šó</td>
<td>*kʰI(C?) (?)</td>
</tr>
<tr>
<td></td>
<td>(&lt; kʰi· (ROOT))</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*tʰI(C)</td>
<td></td>
</tr>
<tr>
<td>fish</td>
<td>pu'</td>
<td>paw</td>
<td>pi</td>
<td>pi</td>
<td>pi</td>
<td>pó</td>
<td></td>
<td>*pI(C?)</td>
</tr>
<tr>
<td>burst, rough</td>
<td>pʰá'</td>
<td>pʰaw</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pʰ'aw grind (?)</td>
<td>pʰ'á'</td>
</tr>
<tr>
<td>roll</td>
<td>dawé</td>
<td>lile</td>
<td>diri</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*dlI</td>
</tr>
</tbody>
</table>

The Arizona Tewa labiovelar in day, fish, and burst does not apparently correspond with a consonant in any of the other languages. In roll we do seem to find Rio Grande Tewa intervocalic /w/ corresponding to a Tiwa lateral/rhotic /l, r/. It can also be seen that the Kiowa cognate of day here shows a high front vowel reflex /i/.

A labialized environment is further suggested by the Kiowa forms in the following cognate sets in Table 8-57.

Table 8-57: High Front Oral Vowel Cognate Sets, Tiwa /ɨ/, Kiowa Labial?

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>heavy</td>
<td>pʰí</td>
<td>khá</td>
<td>kʰala</td>
<td>xil</td>
<td>xil</td>
<td>khir</td>
<td>hólé</td>
<td><em>q(</em>)I(Id(V))</td>
</tr>
<tr>
<td>kernel</td>
<td>pʰa·syān</td>
<td>khe· kernel ;</td>
<td>pʰa·ʔom</td>
<td>kʰili</td>
<td>xi</td>
<td>xi</td>
<td>kʰi</td>
<td>wó·ho star</td>
</tr>
<tr>
<td></td>
<td>small ;</td>
<td>ʔo·gá</td>
<td>grind up</td>
<td>fine (?)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>shell (water-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

560
The Kiowa words have an initial bilabial stop where the Tanoan languages show a reflex of a velar consonant, although the cognate status of the Kiowa forms is not at all certain. See chapter 9.5.3 for further examples of bilabial-velar correspondences in Kiowa-Tanoan.

Finally, as an association with labialization and high back vowels, we find the following semantically related pairs language internally in Table 8-58. In each of these pairs, one stem comes from the correspondence series of the present section (involving the central vowel in the Tiwa cognate) while the other comes from the primary series reconstructed as descending from the PKT high back vowel */u/.

Table 8-58: Relationship between Central Vowel /ɨ/ and High Back Vowel Correspondences

<table>
<thead>
<tr>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>day, sun; bright, shine</td>
<td>kʰi-dá</td>
<td>th-k'íw</td>
<td>tʰaw</td>
<td>tʰi</td>
<td>thi</td>
<td>šó</td>
</tr>
<tr>
<td>sun</td>
<td>thq'</td>
<td>tʰul</td>
<td>sun</td>
<td>day</td>
<td>day</td>
<td></td>
</tr>
<tr>
<td>the</td>
<td>b'le</td>
<td>sun,</td>
<td>thele</td>
<td>b'le</td>
<td>sun,</td>
<td>thele</td>
</tr>
<tr>
<td>bright, shine</td>
<td>shine</td>
<td>shine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Tewa and Tiwa, there is a conspicuous formal similarity between semantically related *day, sun, and bright*, although whether there is an actual derivational relationship among these stems reconstructable to Proto-Kiowa-Tanoan remains uncertain. We will see additional pairs suggesting a relationship between apparent reflexes of */u/ and cognate correspondences showing the Tiwa central diphthong /ɨɔ, ia/ in section 8.7.2.

Additional correspondence sets that involve Tiwa /ɨ/ appear in Table 8-59, although these present us with the same range of factors as presented above.
The Kiowa cognates of *dwell* and *breast* both suggest a high front vowel given the stem-initial consonant correspondences. These data otherwise add to the previous sets in illustrating the range of environments in which the correspondence set is attested.

Considering all of the above apparent patterns, the question then arises as to what the reconstruction should be. Under the three-vowel proposal here, there is evidence associating it with the high back vowel and with the high front vowel. This two-way tug could itself be support for reconstructing this series as a fourth phonemic oral vowel.

Proposing a central vowel */ə/ would put the vowel in a position to be dragged forward, e.g. by palatalization, or back by labialization. This possibility can be further investigated in future work.

For the present, I tentatively make the somewhat more radical proposal that the correspondence series above derive from the PKT high vowel */i/ when in the presence of labialization. The particular details of the environment in which these correspondences arise are still elusive, especially in keeping a coherent account with respect to other

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38 A possible Kiowa cognate that matches with sound correspondences is kí *meat*. The odd semantic correspondence has precedence in Hale’s (1962) proposal that Kiowa *pë* *food* is cognate with Tanoan *deer* RGT *pë*, Ta *pë*, Pi *pë*, ST *pë*, To *pë*. (Cf. also Kiowa *fish* *-pë* analyzed as “water-food”). I find both of these proposals dubious, but not impossible.
reflexes of */i/*. Support for this hypothesis appears to require further resolution of the stem-final consonants than is accomplished in chapter 10.

### 8.6.2 Nasal High Front Vowels

The high front nasal vowel */i/* appears to have a somewhat simpler development between Proto-Kiowa-Tanoan and the modern Kiowa-Tanoan languages than does its oral counterpart */i/*. However, it still does end up with more complications than the other nasal vowels. Hale (1967) illustrates the most basic correspondence set reflecting a PKT high vowel */i/*, the set he labels *V₃. This set is shown in Table 8-60.

Table 8-60: Hale's High Front Nasal Vowel Correspondence Set

<table>
<thead>
<tr>
<th>*Hale</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>*V₃</td>
<td>ą</td>
<td>ø̞</td>
<td>ɛ̞</td>
<td>ɛ̞</td>
<td>ɛ̞</td>
<td>ıt</td>
<td>ø̞</td>
</tr>
</tbody>
</table>

What we find is that only Southern Tiwa has a high vowel reflex. The other languages all show low front vowel forms. This could at first suggest a low vowel origin. However, typologically it is not uncommon for nasalization to cause vowels to lower (Whalen and Beddor 1989) and front vowels may be particularly prone to this. The low front vowels we see may represent such a lowering process. Indeed, the fact that we see low vowels in all four main branches of the family may suggest that the PKT nasal vowel */i/* itself had already begun to lower in most phonological contexts. If this is the case, then Southern Tiwa may have undergone a subsequent change which caused the vowel to raise again (as has happened to the nasal low vowel in Towa, cf. section 8.4.1 above). It is also possible that the PKT vowel may have been pronounced as a diphthong *[ıa]*, although this has produced far less variation than the oral vowel of the previous section.
8.6.2.1 Primary Correspondence, */i/

Table 8-61 illustrates what could be considered the primary correspondence set reflecting */i/, the same set as given by Hale.

Table 8-61: High Front Nasal Vowel Cognate Sets

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ten</td>
<td>tʰ̣qˑ̣</td>
<td>tæ̣</td>
<td>tɛ̣</td>
<td>tɛ̣</td>
<td>t外籍</td>
<td>t外籍</td>
<td>t外籍</td>
<td>t外籍</td>
</tr>
<tr>
<td>come</td>
<td>ṇ̌</td>
<td>ṇ̌ &gt; ṇ̌ n (IPF.STEM)</td>
<td>ṇ̌</td>
<td>ṇ̌</td>
<td>ṇ̌</td>
<td>ṇ̌</td>
<td>ṇ̌</td>
<td>ṇ̌ (IPF)</td>
</tr>
<tr>
<td>mountain</td>
<td>tʰ̣amdel (?)</td>
<td>khɛŋ</td>
<td>kʰɛŋ</td>
<td>xɛ̣m</td>
<td>x外籍</td>
<td>kʰim</td>
<td>ṇ̌ɛ̣ṭa</td>
<td>*qʰ̣ib</td>
</tr>
<tr>
<td>give, feed</td>
<td>mạ́gɔ</td>
<td>mạ́gi</td>
<td>mɛ̣ki</td>
<td>mɛ̣ke</td>
<td>mʲki</td>
<td>mʲ</td>
<td>mʲ</td>
<td>*mʲqi</td>
</tr>
<tr>
<td>cloud</td>
<td>pʰ̣ṇ</td>
<td>pʰ̣ẹ</td>
<td>pʰ̣ẹ</td>
<td>pʰ̣</td>
<td>pʰ̣</td>
<td>pʰ̣</td>
<td>*pʰ̣in</td>
<td></td>
</tr>
<tr>
<td>thorn</td>
<td>wʰ̣̣</td>
<td>ẉ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>kʰ̣</td>
<td>*kʰ̣̣</td>
</tr>
<tr>
<td>sew</td>
<td>p̣ẹ̣</td>
<td>p̣ẹ̣</td>
<td>p̣ẹ</td>
<td>p̣</td>
<td>p̣</td>
<td>p̣</td>
<td>p̣</td>
<td>*p̣dV</td>
</tr>
<tr>
<td>snake</td>
<td>p̣ẹ̣ ỵ</td>
<td>p̣ẹ̣</td>
<td>p̣ẹ̣</td>
<td>p̣̣ṛ</td>
<td>p̣̣ṛ</td>
<td>p̣̣ỵ̣</td>
<td>*p̣̣ḳ̣</td>
<td>worm</td>
</tr>
<tr>
<td>help</td>
<td>tʰ̣̣</td>
<td>khɛ̣̣</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ṇ̣ -ṣ̣̌</td>
<td>*kʰ̣̣̣(CV)</td>
</tr>
</tbody>
</table>

As can be seen here, all languages except Southern Tiwa typically have a low front vowel reflex. One exception is seen in the Kiowa word for ten, kʰ̣̣ kʰ̣̣, the second syllable of which appears to be cognate both language-internally to -tʰ̣qˑ̣ teen as well as cross-linguistically. The motivation for the different vowel reflex is not presently apparent.

The cognate set in Table 8-62 shows the same correspondences as the above, but the vowel in Kiowa is oral rather than nasal.
As argued in Watkins (1984: 202, fn. 51), this appears to be a case of denasalization. A formerly nasalized vowel */ą/ in Proto-Kiowa became oral /a/ in developing to the modern language. Kiowa-internal morphology, however, still shows the allomorphy associated with nasal vowels, e.g. an imperfective stem suffix -n.

A similar case of denasalization seems to be at play in the cognate set in Table 8-63. This time, however, it is Towa which has seen denasalization of the vowel. Accompanying this denasalization, the vowel appears to have been raised from /æ̞/ to /e/.

We can note that /e/ is the Towa reflex expected of the oral counterpart to PKT */i/ as discussed in section 8.6.1. This may not be of particular significance, but it could also suggest that this vowel was denasalized fairly early in the development of Towa.

Denasalizing the vowel at an earlier point may have led it to merge with reflexes of oral */i/ and share in their subsequent development into modern Towa /e/.

Hale (1962, 1967) proposes the following cognate set for deer. The Tanoan languages all show the regular correspondences, but the purported Kiowa cognate is anomalous in both the vowel correspondence and the semantics.
Table 8-64: High Front Nasal Vowel Cognate Set, KT deer

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*P KT</th>
</tr>
</thead>
<tbody>
<tr>
<td>deer</td>
<td>pʰɪ́-food (?)</td>
<td>pʰɛ́</td>
<td>pʰɛ́</td>
<td>pɛ́</td>
<td>pɪ́</td>
<td>pɛ́</td>
<td>pʰɛ́</td>
<td>*pʰɪ́</td>
</tr>
</tbody>
</table>

These anomalies probably indicate that the Kiowa word is simply not cognate with the Tanoan word (although I have not yet found any Kiowa word to propose as cognate to the Tanoan deer word). There is one instance below of a Kiowa correspondence of /ɪ/, which does appear in the context of a labialized consonant (cf. the bilabial consonant in the above set). This is not enough to support this food morpheme pʰɛ́ as cognate with Tanoan deer.

There are a number of seeming anomalies that appear in the following cognate sets of Table 8-65.

Table 8-65: High Front Nasal Vowel Cognate Sets, Apparent Anomalies

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*P KT</th>
</tr>
</thead>
<tbody>
<tr>
<td>new</td>
<td>kʰɔm (&gt; kʰɔ bɔ (I)) old (?)</td>
<td>cʰɛ́bi̇</td>
<td>cʰɛ́</td>
<td>cʰɛ́ma</td>
<td>cʰɛ́mia</td>
<td>cʰɪ́be</td>
<td>tʰɪ́ (&gt; tʰɪ́ mɪ́ʃ (I))</td>
<td>*kʰʷɪ́b(i)</td>
</tr>
<tr>
<td>pine</td>
<td>zón</td>
<td>wɛ́ŋ</td>
<td>wɛ́</td>
<td>wɛ́</td>
<td>wɛ́-la</td>
<td>kʷɛ́</td>
<td>*ɡʷɛ́n</td>
<td></td>
</tr>
<tr>
<td>tail</td>
<td>tʰón (&gt; tʰón- (INC))</td>
<td>xʰɛ́ŋ</td>
<td>kʰɛ́ŋ</td>
<td>xʰɛ́</td>
<td>xʰɛ́</td>
<td>kʰẉ</td>
<td>ḥ́</td>
<td>*qʷḥ́n</td>
</tr>
<tr>
<td>dig</td>
<td>ḥ́n (&gt; tʰón- (INC))</td>
<td>yə́ ~ šə́</td>
<td>kʰɛ́ľę</td>
<td>wɛ́l (&gt; xʷɛ́l (INC))</td>
<td>wɛ́l (&gt; xʷɛ́l (INC))</td>
<td>ẉ́r</td>
<td>ḥ́ó ḷ́é (?)</td>
<td>*ḥ́d(V) (&gt; *qʷḥ́d(V))</td>
</tr>
</tbody>
</table>

In these sets we find a back rounded vowel /q/ showing up in Kiowa, as well as other more individualized quirks. These developments all correspond to hints of a labialized consonant preceding the vowel. This is clearest in pine and tail, where labiovelar
consonants appear as such in Tewa and Tiwa (and in the Towa word for *pine*). The labiovelar also appears in the Tiwa reflex of *dig*. In the Kiowa cognates to these words, the labialization is always realized as a back rounded vowel following the historically labialized consonant. In *dig*, the rounding is only found in the ablauted nominal-incorporated form *ṭqūn* while the non-ablaut stem form retains the high front vowel and the labialization disappears (although it may contribute to the high front vowel reflex in *hīn*). Similarly, the labialization is retained in the vowel of the Towa reflex of *tail*, *hį́*; which shows a high back vowel where a front vowel is the correspondence in non-labialized contexts. The possible Towa cognate of *dig* also shows a back rounded reflex */o/, but the vowel apparently lacks nasalization and I have too little information on this Towa verb to be certain of its ciliate status.

The cognate set for *new* presents other challenges. The Tewa and Towa reflexes would otherwise suggest an origin as a low vowel */ɑ̨/ if not for the Tiwa cognates that show reflexes of the high vowel */į̄/ instead. The proposed Kiowa cognate is divergent enough in meaning to call it into question, *old* in Kiowa corresponding to *new* in Tanoan, although it is at least within the general semantic domain of age. If the Kiowa form is cognate, the */q/ vowel we see there suggests that the initial consonant was labialized, while the reflexes of the initial consonant in the Tanoan languages indicate it was a front velar. The combination of labialization and the high front vowel appear to have resulted in the low vowel forms in Tewa (and Towa), although there are not enough other comparable cognates from which to generalize the developments here.

In the cognate set in Table 8-66, we find */ɛ̄/ in Kiowa corresponding to the regular reflexes of */į̄/ in the other languages.
The cognate status of Kiowa pê' *turkey with Tanoan grouse is uncertain. The expected Kiowa reflex, the vowel /q/, seems rarely to occur following /p/ or /s/. The mid vowel /ε/ may simply be determined by the preceding consonant, although two cognate sets do not provide the most robust of support.

We find another apparent correspondence set among the cognates in Table 8-67.

In both of these cognate sets, Kiowa has a high front nasal vowel /i/ corresponding to high back vowels in at least Tewa and Tiwa. If the Towa example in the bag set is indeed cognate—the second half of the Towa word, that is—then we also find an unexpected low back vowel there. Taking into account both the vowel and the consonant reflexes, these sets may actually represent two different configurations. In bag the high back reflex of the vowel in Tewa and Tiwa may derive from labialization on the bilabial stop being coarticulated with the high front vowel */i/ (see chapter 9.2.3 for discussion of labialized bilabial stops). Conversely in Kiowa, the labialization is lost and the high vowel
preserved, perhaps stimulated by the closed syllable environment. In Towa the labialization and vowel may have resolved as /q/ by the same process we will see in section 8.4.1.1.

In night, however, the consonant reflexes do not indicate a high front vowel. Instead, the vowel may have been high back */ʊ/. The high front vowel of the Kiowa cognate then descends from the palatalization on the front velar */ɡ/, which is coarticulated with the vowel. The secondary articulation of the consonant may take precedence over the vowel quality here in an open syllable. Meanwhile in the Tanoan languages, the front velar is fronted to an alveolar stop which is then nasalized preceding the nasal vowel. The vowel itself, however, remains unaltered in quality.

These are the only two cognate sets with such correspondences that I have identified so far. The above account is therefore unfortunately speculative. However, the next section will illustrate the further complexity in the development of the high front nasal vowel */i/ based on phonological contextual factors.

8.6.2.2 Tiwa Front Nasal Diphthongs

There does seem to be a separate major development which has affected the realization of PKT */i/ as the modern languages evolved. Hale (1967) reports two correspondence sets that show partial overlap with both the primary low vowel and primary high vowel sets, namely his *V₅ₐ and *V₅₉. Hale's sets are shown in Table 8-68.

Table 8-68: Hale's High Front Nasal Diphthong Correspondence Sets

<table>
<thead>
<tr>
<th>*Hale</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>*V₅ₐ</td>
<td>q' (?)</td>
<td>æ</td>
<td>ɛ</td>
<td>iɛ</td>
<td>i</td>
<td>ɛ</td>
<td>ø</td>
</tr>
<tr>
<td>*V₅₉</td>
<td>q</td>
<td>q</td>
<td>q</td>
<td>iɛ</td>
<td>i</td>
<td>ɛ</td>
<td>ø</td>
</tr>
</tbody>
</table>
The sets differ from each other only in Tewa and Kiowa, although Hale was not certain of the regular Kiowa correspondence in set *Y₅ᵃ. In set *Y₅ᵇ, Kiowa, Tewa, and Towa all show reflexes identical to those seen as descending from the low vowel */q/ in section 8.4.1 above. The Tewa correspondences in *Y₅ᵃ are identical to those seen as reflexes of the high vowel */i/ in the preceding section. The Tiwa languages, on the other hand, all have higher front vowels in both sets, with Taos Tiwa even showing a diphthong, /iɛ/. These Tiwa reflexes are similar, but not identical, to those that descend from the high front vowel */i/ in the preceding section, so the question becomes whether this set descends from a low vowel */q/ or high vowel */i/. I will submit that both sets descend from the high vowel */i/.

Table 8-69 presents cognate sets showing Hale’s *Y₅ᵃ series.

Table 8-69: High Front Nasal Vowel Cognate Sets, Taos /iɛ/, Tewa /æ̨/
The Tewa correspondents remain the same as above. In Kiowa we find /q/ in a labialized context. In stomach and tall, stretch we have /q/ in closed syllables and /i/ in open syllables. In Towa the primary reflex seems to be /q/, except in nine where the labialization and vowel have merged to high back /i/, and run where denasalization results in the mid vowel /e/. These reflexes seem to appear when followed by a stem-final consonant, although it is not apparent if this consonant was a coda or an onset to a following syllable.

Table 8-70 illustrates Hale's *Y₅b series. The Tiwa and Towa reflexes remain the same as in the preceding table, but the Kiowa and Tewa reflexes are different.

Table 8-70: High Front Nasal Vowel Cognate Sets, Taos /i/, Mixed Low Vowel Sets

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>foot</td>
<td>ʔ̣nsó</td>
<td>ʔ̣ŋ</td>
<td>ʔ̣ŋ</td>
<td>ʔ̣ŋ</td>
<td>ʔ̣ŋ~</td>
<td>ʔ̣ŋ</td>
<td>ʔ̣ŋ</td>
<td>ʔ̣ŋ</td>
</tr>
<tr>
<td>road</td>
<td>ʔ̣n</td>
<td>p’ô’</td>
<td>p’o lo</td>
<td>p’je</td>
<td>p’i</td>
<td>p’e</td>
<td>p’ê</td>
<td>p’ô</td>
</tr>
<tr>
<td>bed, mattress</td>
<td>pál</td>
<td>pq’</td>
<td>pje’</td>
<td>pe</td>
<td>pê</td>
<td>pô</td>
<td>*pîl(V?)</td>
<td></td>
</tr>
<tr>
<td>dirty</td>
<td>kh’’</td>
<td>k̡ªla</td>
<td>xič</td>
<td>khî</td>
<td>hô’</td>
<td>*q’îl(V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>basket, dish</td>
<td>t’u-ŋ</td>
<td>t’i</td>
<td>t’i</td>
<td>t’i</td>
<td>t’i</td>
<td>t’i</td>
<td>*kʷ’i(C)</td>
<td></td>
</tr>
</tbody>
</table>

Significantly, the words for dirty and road show an intervocalic /l/ in Arizona Tewa not directly apparent in any of the other languages, reflecting a stem-final consonant.

However, it is not clear if the stem-final consonants reconstructed for these sets was a coda or intervocalic. Also, nasalization aside, it can also be noticed that the major Tewa and Towa reflexes, /q/ and /q/, have the same vowel quality as we saw in section 8.6.1.4,
where these vowels corresponded to the Tiwa central vowel /i/, which suggests this nasal vowel correspondence set may have arisen in a similar environment.

It should be noted here that there are two Taos Tiwa stems that show an alternation between a diphthong /iɛ/ and monophthong /ɛ/, the latter occurring in the more morphologically complex construction (a compound or with derivational morphology). These examples are shown for Taos Tiwa with their Southern Tiwa cognates in (2).

(2) Taos Tiwa Nasal Vowel Alternation

<table>
<thead>
<tr>
<th>Taos Tiwa</th>
<th>Southern Tiwa</th>
</tr>
</thead>
<tbody>
<tr>
<td>nɔ̄-piɛ</td>
<td>learn</td>
</tr>
<tr>
<td>t'iɛ</td>
<td>dish</td>
</tr>
<tr>
<td>teach</td>
<td>piwi</td>
</tr>
</tbody>
</table>

The basis for this Tiwa alternation is not clear at the moment. We can notice that the old causative derivational morpheme -ɛ in teach is following a /w/, either a reflex of a stem-final consonant or a reflex of an onset consonant of the suffix. It is in the context of this /w/ where we find the monophthong reflex. If this consonant is involved in the vowel alternation, then it could be that the labiovelar’s overt realization in teach is changing the syllable structure of the word.

In the word for basket, there is not so ready a motivation. However, we can compare the Rio Grande Tewa words for basket and pot given in Table 8-70. The former has a coda consonant /ŋ/ and the latter of which—a compound nŋ-t'úŋ(ŋ)39 earth-basket—lacks a coda. This suggests again that changing the configuration of the syllable has led to different vowel reflexes.

39 It is not apparent what motivates the absence of the coda /ŋ/ in nŋt'úŋ pot, or its presence in t'úŋ basket.
Finally, there is a small number of stems where Southern Tiwa shows a diphthong \(/i\varepsilon/ while Taos and Picuris Tiwa have their primary monophthongal mid vowel reflexes of \(*/\acute{i}/. Such correspondences are given in Table 8-71.

Table 8-71: High Front Nasal Vowel Cognate Sets, Southern Tiwa \(/i\varepsilon/ 

<table>
<thead>
<tr>
<th></th>
<th>Kí</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>hit</td>
<td>e</td>
<td>ãe</td>
<td>e</td>
<td>e</td>
<td>e</td>
<td>jε</td>
<td>j</td>
<td>*j</td>
</tr>
<tr>
<td>with</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

|       |   |     |      |    |    |    |     |     |
| sinew | tê  | cû  | e  | ñëç | sjë | zî | *k*î |

| secretly | sêm- | sañ- | lê- | lê- | lê- | lê- | tî- | *tìm |

Note that Kiowa here shows its rarer mid vowel reflex \(/æ/ while Towa shows an anomalous high vowel reflex \(/\acute{i}/ rather than the expected \(/\acute{a}/. In Towa beat the vowel is \(/\acute{q}/ as in the correspondences in Table 8-70. Tewa appears to shows the expected reflex \(/\acute{a}/ except in the word for sinew, muscle where the reflex is low \(/\acute{q}/. It is possible that this vowel is preceded by a labialized consonant. The voicing of the Towa \(/z/ is unexpected. As with other diphthongs, it appears that this set may be motivated by a stem-final consonant, which here occurs in coda position. If the PKT vowel was originally a diphthong, this environment has had a preservative effect.

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40 Laurel Watkins (p.c.) suggests a possible Kiowa cognate mât’ìgyá get squeezed, pinched, pressed between.
8.6.3 Interim Summary of High Front Vowels

The above sections cover the primary reflexes of the high front oral vowel */i/*, probably actually pronounced as a diphthong *[ia]*, and the nasal vowel */i/*, which was probably either a diphthong *[iæ] or phonetically lowered to *[e] or *[æ] even at the PKT stage. The correspondence sets above are summarized in Table 8-72.

**Table 8-72: Summary of High Front Vowel Correspondences**

<table>
<thead>
<tr>
<th>*PKT</th>
<th>K</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>i</em></td>
<td>a</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td>i</td>
<td>e (&gt; i)</td>
</tr>
<tr>
<td></td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td>i</td>
<td>e (&gt; i)</td>
</tr>
<tr>
<td></td>
<td>e</td>
<td>i</td>
<td>i</td>
<td>ia</td>
<td>i</td>
<td>ia</td>
<td>e</td>
</tr>
<tr>
<td></td>
<td>a</td>
<td>i</td>
<td>i</td>
<td>ia</td>
<td>i</td>
<td>ia</td>
<td>e</td>
</tr>
<tr>
<td></td>
<td>i</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>ia</td>
<td>e</td>
<td>æ</td>
</tr>
<tr>
<td></td>
<td>o</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>ia</td>
<td>e</td>
<td>æ</td>
</tr>
<tr>
<td></td>
<td>a</td>
<td>a</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>o</td>
</tr>
</tbody>
</table>

There are numerous aspects of the distribution of these sets which are still unclear. While it is possible that one or more of them may be ultimately reconstructed as distinctive vowels, the similarities among the sets strongly encourages an interpretation whereby they all descend from the two vowels given.

It will be seen in the next section that the (oral) PKT high vowel has also participated in the evolution of another set of correspondences, interacting with preceding labialization.
8.7  Labialization, the Tiwa Rounded Diphthongs and their Correspondences

Part of the complexity of cracking the vowel correspondences and proto-vowel system of Kiowa-Tanoan is the handful of diphthongs we find in Taos Northern Tiwa and Southern Tiwa. The high front diphthong /ia/ and nasal /je/ have been addressed above in section 8.6. However, there are two other diphthongs of Tiwa that also must be considered: a high back rounded diphthong TA /uɔ/ and ST /oa/ and a central diphthong TA /io/, ST /ia/. As with the proliferation of vowels we see above, I will suggest that these diphthongs are in fact historically derived from the proposed three-vowel system. In particular they come from low or lowered vowels preceded by labialization.

8.7.1  Back Rounded Diphthong

The primary correspondence set involving the Tiwa high back rounded diphthong is represented by Hale’s *V_{10}, shown in Table 8-73.

Table 8-73: Hale’s High Back Rounded Diphthong Correspondence Set

<table>
<thead>
<tr>
<th>*Hale</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>Ta</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>V_{10}</td>
<td>o</td>
<td>u</td>
<td>u</td>
<td>uɔ</td>
<td>u</td>
<td>oa</td>
<td>a</td>
</tr>
</tbody>
</table>

Here we find a vowel that consistently has a higher back rounded component in all but Towa, which shows a low back vowel (which is often somewhat rounded). Kiowa shows the same vowel that it does in correspondence set *V_{6} (from */u/) while the Tewa languages have a high back rounded vowel, as does Picuris Tiwa. The diphthongs in Taos Tiwa and Southern Tiwa begin in the high back range and end in the lower back range, losing a fair amount of rounding in the transition.
I propose that this series descends from the high front vowel */i/, namely in its diphthongized realization *[ia], when preceded by a labialized consonant, i.e. */Cʷi/, or rather *[Cʷia]. This derivation is suggested by the following forms which do not fit the regular correspondence from Hale just mentioned.

Table 8-74: Evidence of Labialization and High Front Vowels

<table>
<thead>
<tr>
<th></th>
<th>K₁</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>lay (S/D)</td>
<td>o</td>
<td>u</td>
<td>u</td>
<td>o</td>
<td>u</td>
<td>o</td>
<td>a</td>
<td>*Cʷi</td>
</tr>
<tr>
<td>c’ép (&gt; c’ó (ROOT))</td>
<td>k'û</td>
<td>kʷi'</td>
<td>k'ùo (&gt; kuy (INC))</td>
<td>k'oa (&gt; koy (INC))</td>
<td>k'â</td>
<td><em>qʷ</em>i(CV?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>eat (ITR)</td>
<td>hú’y质押</td>
<td>hí’y质押</td>
<td>hí’y质押</td>
<td>hi’-</td>
<td>*hʷig/V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>turn</td>
<td>bǫ̂n</td>
<td>bî</td>
<td>mî’li</td>
<td>mûl</td>
<td>mûl</td>
<td>mâ-bor turn (ITR)</td>
<td>*bʷid(V)</td>
<td></td>
</tr>
<tr>
<td>bend</td>
<td>buŋ</td>
<td>return ; cf. mulu circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bend (TR)</td>
<td>hê</td>
<td>ho (&gt; hûy质押 (IPF), khuʷwa (INC))</td>
<td>ho</td>
<td>hû (&gt; huy (NEG))</td>
<td>hî (&gt; huy (NEG))</td>
<td>hʷea ~ hʷey</td>
<td>hú</td>
<td><em>hʷig</em>(V)</td>
</tr>
<tr>
<td>take away</td>
<td>hê (&lt; hí (ROOT))</td>
<td>ho</td>
<td>hû (&gt; huy (NEG))</td>
<td>hû (&gt; huy (NEG))</td>
<td>hû (&gt; huy (NEG))</td>
<td>hî (&gt; huy (NEG))</td>
<td>hú</td>
<td>*hʷi</td>
</tr>
<tr>
<td>from (direction)</td>
<td>hû-</td>
<td>hû-</td>
<td>hʷe-</td>
<td>*hʷi</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

41 It is not clear if the Towa form is cognate here. The initial /h/ of Towa normally has a correspondence of /kʰ/ in Tewa. Also, while the vowel /i/ is expected as the product of labialization + vowel in some cases, it is not clear here why we find /î/ and not the normal reflex /a/, although the fact that the Towa stem is bound may present a certain type of phonological environment that does not give the /a/ reflex. Lacking a Tiwa cognate, it's hard to say whether this set even belongs with these others, but the correspondence between the two Tewa languages at least suggests a comparison. Note as well the Towa form hǫ́gí food, meal and the fluctuating nasalization of the vowel on eat in Rio Grande Tewa. It is not clear how all of this plays into the comparison.
In Arizona Tewa in the *lay (s/d) cognate set and in both Tewa languages in the *turn set, we find a high front vowel (specifically following a labialized velar in AT kʷ’í: lay; hʷí yqq eat). These correspond to the regular /uɔ/ correspondence set of the other languages. Notice too the alternation in the Taos and Southern Tiwa *lay stem between the diphthong /uɔ, oa/ and the rounded-high sequence /uy, oy/ found in the ablaut form.

While these might all be ruled out as anomalies or the product of old morphology, *take away and from* both present us with interesting Tiwa-internal correspondences. Where Taos Tiwa has the diphthong /uɔ/ and Picuris the regular correspondence /u/, we find a labiovelar consonant in Southern Tiwa followed by /e/, the reflex of a lowered front vowel */ia/ (cf. section 8.6.1 above). The rare Southern Tiwa diphthong /ea/ regularly corresponds with /a/ in Taos Tiwa and /ia/ in Picuris Tiwa42.

Further support for this account might also be found in the Kiowa cognate of *take away*. The stem form is hí’, but in the perfective we find the low vowel /ɔ/ in hɔ’, an otherwise irregular alternation in the language. However, it may be explained if we propose that the perfective retains the low portion of the PKT diphthong *[ia] which is backed by the labialization of the consonant, although /ɔ/ is not usually the product of labialization in other contexts. Note too the Tewa forms, where we find the stem to be usually hu- (the regular correspondence to Tiwa /uɔ/) in most grammatical stem forms, but ho’ in the perfective, where /ɔ/ is regularly the Tewa reflex of a low vowel. The Towa cognate is ambiguous, /a/ being a regular correspondence of Tiwa /uɔ/ as well as being a regular reflex of the low vowel.

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42 Cf. the Tiwa cognate set for want: Ta maw, Pi miaw, ST beaw.
In short we have suggestions of labialization, suggestions of a high front vowel (in Kiowa hiˑ and the Tewa forms mentioned above), and suggestions of a low vowel, one of the reflexes of the PKT high vowel */i/. Putting these together, it seems reasonable to suggest that this correspondence set may be at least partially the result of a PKT sequence */Cʷi/. The labialization combined with the low portion of the PKT diphthongal high vowel results in the back rounded-to-low diphthong of Taos Tiwa and Southern Tiwa. Picuris Tiwa probably simplified an original Tiwa diphthong */ua/ as a monophthong /u/. Kiowa shows variable reflexes, which will be addressed below. Towa seems to have primarily retained the low vowel portion only slightly colored to back semi-rounded /ɑ/ by the labialization which otherwise disappeared. Tewa appears to have preserved the rounding of the labialization in its vowel /u/. That this vowel does not have the fronting to /e/ that the reflexes of other labialization-like structures in Tewa do could perhaps be attributed to the contrast between the rounding of the labialization and the very unrounded *[ia]. As the labial portion was coarticulated with the second half of this sequence, it might have been rendered more salient by the absence of rounding on the *[ia], helping to preserve the labial quality. Or, the change from *[CʷV] to [Cu] happened after other instances of Proto-Tewa */u/ (< PKT */u/) had fronted to /e/.

With this proposal in place, Table 8-75 present the more regular correspondence among cognate sets.

43 Cf. the Tewa reflex of */u/ in section 8.5.1 and the regular Tewa correspondence of the set presented in section 8.7.2 below, which also involves labialization.
### Table 8-75: High Back Rounded Diphthong Cognate Sets

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>o</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>oa</td>
<td>a</td>
<td>*Cʷi</td>
</tr>
<tr>
<td><strong>rock</strong></td>
<td>c’ó’</td>
<td>k’u’</td>
<td>k’u</td>
<td>k’u-til</td>
<td>xʷj-k’oa</td>
<td>k’u’</td>
<td><em>qʷ</em>i</td>
<td></td>
</tr>
<tr>
<td><strong>root, stem</strong></td>
<td>pú’</td>
<td>pú’</td>
<td>li-a-pu’</td>
<td>poa</td>
<td>*pʷi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>arrow</strong></td>
<td>sú</td>
<td>sú</td>
<td>lu</td>
<td>lu</td>
<td>loa</td>
<td>t’ú’</td>
<td>*kʷi</td>
<td></td>
</tr>
<tr>
<td><strong>warm</strong></td>
<td>súwá</td>
<td>súwá</td>
<td>lu</td>
<td>lum</td>
<td>*kʷib(V)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>sheep, goat</strong></td>
<td>k’úwá</td>
<td>k’u</td>
<td>k’u</td>
<td>k’oa</td>
<td>k’â’</td>
<td><em>qʷ</em>i(CV)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>bite</strong></td>
<td>khu’gi’</td>
<td>kʰųŋ</td>
<td>xuy</td>
<td>khoay</td>
<td>há’se</td>
<td>*qʷiqí</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>become</strong></td>
<td>pó’</td>
<td>po</td>
<td>pu</td>
<td>pu</td>
<td>poa</td>
<td>pú</td>
<td>*pʷi(CV)</td>
<td></td>
</tr>
</tbody>
</table>

It has actually been difficult to find Kiowa cognates to stems with these correspondences.

However, in the one secure cognate in Table 8-75, we see that the back velar stop */qʷ*/ has been fronted and spirantized to an affricate /c’/ in Kiowa. This is regularly an indication that the consonant was followed by a high front vowel.

One feature that may come out of the reconstruction is that this correspondence set seems perhaps to arise in open syllables, both in monosyllabic forms and in disyllabic.

Given that some of the stem-final consonant and vowel configurations are still poorly understood, it is difficult to be secure in this.
8.7.2 Central Diphthong

The other diphthong that we see in the Tiwa languages that point to interesting historical developments is Taos /iɔ/ and corresponding Southern Tiwa /ia/. These begin with a central vowel, akin to the central monophthong /i/ found in these same languages, which then opens to a relatively low central vowel. Hale (1967) gives the correspondence set in Table 8-76 that includes the central diphthong, which he labels *V₅.

Table 8-76: Hale's Central Diphthong Vowel Correspondence Set

<table>
<thead>
<tr>
<th>*HALE</th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>*V₅</td>
<td>o</td>
<td>e</td>
<td>e</td>
<td>iɔ</td>
<td>i</td>
<td>ia</td>
<td>o</td>
</tr>
</tbody>
</table>

The vowel reflexes in Kiowa, Tewa, and Towa are all also found in other correspondence sets. The Kiowa and Tewa vowels are found in the primary correspondence set reflecting the PKT high back vowel */u/, corresponding to Tiwa /u, o/, while the Towa vowel is also found corresponding to the Tiwa monophthong /i/ (compare also Towa nasal /ǫ/ corresponding to Tiwa /ų, ū/). These correspondence overlaps prove to be significant to the reconstruction of the vowel system.

The correspondence set as given by Hale is attested frequently enough, as will be illustrated below, but these are not the cases that provide us with the best clues for the development of the vowels in question. There are a small number of cases where we find either a labial component or a low vowel corresponding to the Tiwa diphthong /iɔ, ia/. These are shown in Table 8-77.
Table 8-77: Cognate Sets, Labialization and Central Diphthong Correspondence

<table>
<thead>
<tr>
<th>K̖</th>
<th>RGT</th>
<th>AT</th>
<th>T̖</th>
<th>P̖</th>
<th>ST</th>
<th>T̖o</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>o</td>
<td>e</td>
<td>e</td>
<td>iɔ</td>
<td>i</td>
<td>ia</td>
<td>o</td>
<td>*Cʷa/i</td>
</tr>
</tbody>
</table>

**neck**
- K̖'ól
- kʷ'ú-á: necklace; k'ė: neck
- K̖'é
- k'iɔ
- k'i
- k'ia
- *qʷ'al

**on top, sharp**
- k'ɛ: knife (??)
- kʷ'úye: on top; k'ɛ: sharp
- K̖'í: sharp on top; k'í셔: sharp
- K̖'í: sharp
- k'íče
- gówa: up; k'í: sharp
- *qʷ'a(gi)

**fold; complete**
- k'ş-bé: tip, fell (??)
- m̖q'k̖'únq: fold; k'ewę: initiate, complete
- K̖'ımę: finish, initiate
- K̖'ımę: initiate, complete
- m̖-k̖'imi: fold; k'ími: initiate, complete
- *qʷ'ub

**fly (v.)**
- šuŋ
- k̖bó: li
- ţišl
- ţiär
- šó: la
- *k̖b̖'ad(V)

**enter; bring in**
- cá: entrance (??)
- c'ú: enter; c'ú: enter; c'ú: bring in
- c'ú: enter; c'ú: de: bring in
- c'ı:ód: enter; c'ı:ístı: (INC) enter; c'ı:ıtı: bring in
- c'ın: enter; c'ı:te: bring in
- c'ı:at: (INC) enter; c'ı:ati: bring in
- t'ö: tö: (< z̖:t: (ROOT))
- *k̖'it: (< kʷ'it); *k̖'itı

**man**
- t'ěal-ı: boy (man-DIM)
- seŋ: man; soŋ: husband (ARCHAIC)
- seŋ
- sion
- sin
- sian
- šó
- *k̖b̖'id

**fresh corn, ripe**
- p̖'į: gya: fresh; ʰ: -p̖'į: gya: baby
- p̖'e: ripe; ʰ: -p̖'e: ripe
- p̖'o: ripe; ʰ: -p̖'o:teš (l) ear of corn; *p̖'o: (V)

---

44 I am not certain that the morphemes for top and sharp are actually historically related. It does not adversely affect the argument if they are not.

45 I am not at all certain that the morphemes meaning fold and complete are indeed related. The proposal is based on the apparent homophony seen in Southern Tiwa (compared to the two stems in Rio Grande Tewa). The necessary semantic relations involved, if valid, are not clear.
The neck cognate set shows the regular correspondence as presented by Hale (and is indeed one of the small set of words on which he bases his *V₅). However, the Tewa word *kʷˈuːˈaˑ neck, beads appears to be a compound. The identity of ˈuˑ clothing, worn item can be relatively certain, but *kʷˈu as such has no immediate etymology in the language…unless we posit a relationship with *kᵉˑ neck. This receives some support in the correspondence set for on top, especially if it is related to the cognate set for sharp since that would illustrate another /kʷˈaˑ ~ kᵉ/ alternation in Tewa. No phonological motivation for the rare preservation of the labialized form as opposed to the /e/ form in Tewa is immediately apparent, but there does appear to be a relationship.

Slightly different clues are provided by the fly and enter/bring in sets. Here we see a high back rounded vowel in at least Rio Grande Tewa corresponding to the central diphthong in Tiwa. The Arizona Tewa cognate of fly, *kʷʰóli, provides us with evidence of a labialized consonant component followed by a Tewa reflex of a low vowel, comparable to the previous cases. Both Tewa languages in the enter/bring in set show a high back vowel, as does the Rio Grande Tewa cognate of fly, šųŋ. I suggest that these cases provide us with a further clue to the developments of this correspondence set: an original sequence of a labialized consonant followed by a low back vowel */Cʷa/ simplified in Tewa in most environments to */Cu/—or to a lowered back vowel */Co/—the labialization being coarticulated with the following vowel. The resulting back vowel then underwent the same fronting process to /e/ as */u/ regularly underwent in Tewa (cf.
The high back reflex is retained in Rio Grande Tewa fly and in both Tewa languages for enter/bring in, perhaps because of the nasalization caused by the coda consonant /ɲ/. (The nasalization was either lost in the transitivized bring in reflexes RGT c’üre, AT c’ú·de, or it was never nasalized and remained high and back by analogy with the intransitive form.) This account would also be supported by the primary reflexes of Kiowa and Towa, /o/: the same simplification of */Cʷɑ/ to */Cu/ or */Co/ occurred, but underwent no further changes.

There are also hints that this vowel was also sometimes derived from labialization preceding a high front vowel */Cʷi/, probably in closed syllables (where the high portion of the diphthong *[ia] is lost). The evidence is not the strongest, but the affrication of the front velar in Tewa and Tiwa enter, the low front vowel in Kiowa tʰaliˑ boy, and the different vowels in the two stems of ripe, newborn. A relationship between these stems is suggested by Kiowa, where the same morpheme is used for ripe (of fruit) as for baby. Even though Tewa and Tiwa have distinctive forms for these two meanings, it is striking that they express infant with a construction so formally similar to that in Kiowa without them being related.

Because of these data, I will reconstruct the series with a low vowel */ɑ/ unless there are clues to propose a high vowel instead. Further study may reveal that all cases do indeed descend from a single common vowel, but for now the data suggesting a high vowel must be accommodated somehow.

Comparable examples were seen with nasal vowels in section 8.4.2.3, where the association of Southern Tiwa central diphthong /ja/ with labialization is even more transparent.
Reflexes in Table 8-77 also appear to support this argument, but from the opposite direction. The Kiowa reflexes, as well as the archaic Tewa word soŋ husband, all seem to retain the low vowel component of the proposed */Cʷə/ sequence and lose the reflex of the labialization component\(^{46}\) (see too the Kiowa word k’š: knife in Table 8-77, if it is indeed cognate with the sharp set). The motivation for this is not entirely certain at this point, although it seems to be that labialization was simply lost from certain original labialized consonants, especially as they moved away from a velar place of articulation.

A question that arises under this proposal is why the labialized consonant-low vowel sequence that we see pop up in Tewa is /Cʷə/ rather than /Cʷo/, /o/ being the regular low vowel reflex of PKT */a/. We do indeed see /o/ in the Arizona Tewa word kwóli fly already mentioned. The only other major candidate where we find a labialized velar stop followed by /o/ in Tewa is the stem be lying/sitting (p.) RGT kw’ô ~ kw’ô ~ kw’ôŋ, AT kw’ôŋ, Ki k’úl, To gó’. However, here we are missing a direct Tiwa cognate to be able to see how this plays out with respect to the correspondence sets in question. The Tewa back vowel /o/ in these cases may be attributable to the following consonant while the /ə/ of the above /Cʷə/ sequences may be the regular reflex in these structures. Or, it could be the case that Tewa /ə/ descends from PKT */i/ as it does elsewhere and that the correspondence sets involving Tiwa /iə, ia/ actually descend from both */Cʷə/ and certain */Cʷi/ sequences, as mentioned above.

Finally, there also appear to be a handful of cases where we have two stems within a single language that are semantically closely related and formally similar, but

\(^{46}\) It could be suggested that Tewa soŋ husband retains the intermediate stage where */Cʷə/ > */Co/ by coarticulation before the vowel fronted to /e/. While not implausible, modern Tewa /o/ is never regularly found as a reflex of a high back vowel, only as a reflex of the PKT low vowel */a/.
distinct enough that no derivational relationship has ever been proposed. Notably, the difference in a subset of these possibly related forms is that in Tiwa, one of the forms has TA /ɨɔ/, PI /ɨ/, ST /ia/, i⁴⁷ and the other has a high back rounded vowel /u, o/ in Tiwa.

Such pairs are given in Table 8-78.

Table 8-78: Comparison of Central Diphthong and High Back Vowel

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>sick, hurt</em></td>
<td>hôl</td>
<td>hîl</td>
<td>hîl</td>
<td>hil</td>
<td>hil</td>
<td>hîl</td>
<td>hîl</td>
</tr>
<tr>
<td>kill</td>
<td>hîl</td>
<td>hîl</td>
<td>hîl</td>
<td>hîl</td>
<td>hîl</td>
<td>hîl</td>
<td>hîl</td>
</tr>
<tr>
<td><em>fall</em></td>
<td>tôô dé</td>
<td>siôl</td>
<td>síl</td>
<td>sir</td>
<td>šî</td>
<td>šî (INC)</td>
<td>šî (INC)</td>
</tr>
<tr>
<td>: (S/D)</td>
<td>leave behind</td>
<td>fall (S/D)</td>
<td>fall (S/D)</td>
<td>fall (S/D)</td>
<td><em>fall (S/D)</em></td>
<td><em>fall (S/D)</em></td>
<td><em>fall (S/D)</em></td>
</tr>
<tr>
<td>; fall (P), rain</td>
<td>sép</td>
<td>lul</td>
<td>lul</td>
<td>lul</td>
<td>lul</td>
<td>lul</td>
<td>lul</td>
</tr>
<tr>
<td>(&lt; sô (ROOT)) descend, rain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>night</td>
<td>gi’</td>
<td>nú’-khú’</td>
<td>nú’</td>
<td>nú’</td>
<td>nú’</td>
<td>nú’</td>
<td>nú’</td>
</tr>
<tr>
<td>dark</td>
<td></td>
<td>dark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We also saw similar pairs relating Tiwa /i/ to /u, o/ in section 8.6.1.4. In the pair *hurt – kill* here, we find that the stems are virtually identical in Kiowa and Tewa in at least some inflectional forms. The stems are different in Tiwa and Towa. The number-suppletive pair for *fall* also shows a difference in the initial consonant (see chapter 9.6 for discussion of the particular pair of consonants involved), but also show the same vowel contrast. In

⁴⁷Note in Southern Tiwa that the diphthong /ia/ is becoming /i/ before the approximant /r/. Transcriptions from the late 19th century to the modern day show this change in progress.
Towa we actually find the same vowel in each member of the pair, /ɨ/ (which fronts to /i/ following the modern palatalized consonant). Such sets only add to the contention that there is a relationship between the Tiwa diphthong /ɨɔ, ɨa/ and some high back labialized component.

Table 8-79 illustrates further cognate sets for the primary vowel correspondence involving the Tiwa central diphthong.

Table 8-79: Central Oral Diphthong Cognate Sets

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>Ta</th>
<th>Pl</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>face</td>
<td>t'ó</td>
<td>c'e</td>
<td>c'e</td>
<td>c'ıə</td>
<td>c'ı</td>
<td>ěía</td>
<td>t'ò</td>
<td>*kʷi(C?)</td>
</tr>
<tr>
<td>sick</td>
<td>ból</td>
<td>he'</td>
<td>he'</td>
<td>hił</td>
<td>hil</td>
<td>hir</td>
<td>fiò</td>
<td>*hʷad(V)</td>
</tr>
<tr>
<td>bear</td>
<td>kól-</td>
<td>ke'</td>
<td>ke'</td>
<td>kɪɔ</td>
<td>ki</td>
<td>kia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flour</td>
<td>k'ol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ear</td>
<td>(t'ó-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>spruce, evergreen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trap, snare</td>
<td>p'bó</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lose, throw away</td>
<td>p'ó'dé</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pick, gather</td>
<td>sêl</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The above sets illustrate a number of different environments in which this series appears to have occurred. Like the correspondences in section 8.7.1, it is not transparent whether there were any restrictions on the syllable structure or phonotactics that gave rise to this series, but it can be noted that there is a following consonant (in some construction) more often than not.

In summary the relatively frequent central diphthong seen in Tiwa—and the correspondence set to which it is cognate—appears to have derived from labialization followed by a low and/or high vowel. Further details of its development remain to be studied. In particular there is the question of how it might relate to high back vowel reflexes, as discussed with Table 8-78 above, and how it might relate to the Tiwa monophthongal central vowel /ɨ/ correspondence series.

### 8.8 Conclusion

In this chapter I have put forth the proposition that the moderately large array of vowels that we see in the modern languages actually descend from a typologically common three-vowel system. In this proposed Proto-Kiowa-Tanoan system, there were three oral vowels—low */ɑ/, high back */u/, and high front */i/, which was already pronounced as a diphthong *[ıa] when the languages began separating—and three nasal
vowels—low */æ/, high back */ʊ/, and high front */ɨ/, which was probably already a diphthong */[ɛ] or lowered to */[æ] in the proto-language.

This is a fairly radical departure from the few previous attempts at analyzing Kiowa-Tanoan vowels. It crucially depends on the analysis of consonants provided in the next chapter, which include a larger set of labialized consonants as well as palatalized (velar) consonants. Argumentation for these consonants conversely depend to a large extent on the vowel reflexes that we find. Further research may reveal that additional vowel distinctions will need to be made. For instance, rather than proposing that the correspondence sets including the Tiwa diphthongs /ɨɔ/, /ɨa/ and /uɔ/ descend from labialization followed by a low vowel increment, it could be proposed that the labialization we get as evidence for my analysis is actually the reinterpretation of original diphthongs. That is, on top of the proposed three-vowel system, we may add diphthongs to the mix.

Two features that were not addressed here were vowel length and tone. Both of these may have existed in Proto-Kiowa-Tanoan. There are certain complexities to reconstructing these, however. First, as already mentioned, we do not have reliable information on tone in the Tiwa languages. This removes a critical empirical component to understanding the development of tone. Similarly, it is not entirely clear if vowel length might be phonemic in the Tiwa languages, although existing descriptions seem not to think so. Another important factor is arriving at a fuller analysis of stem-final consonants. While I do propose a set of possible codas in chapter 10, that domain is complicated by the probable existence of ancient suffixes. The loss of codas undoubtedly played a role in the specific development of Kiowa-Tanoan tones (coda-loss being a
common source of tonogenesis, cf. Hombert et al. 1979, Hyman 2007) and probably also in the development of vowel length contrasts in Kiowa, Tewa, and Towa by compensatory lengthening. That is, whatever vowel length and tone contrasts may have existed in Proto-Kiowa-Tanoan, these have been at least partly obfuscated by subsequent developments. However, I do believe more careful study from this point may indeed get us at an adequate understanding of these suprasegmental features48.

The following two chapters will further support the vowel proposals of this chapter. In fact, as interdependent as the analysis of consonants and vowels are within this family, the evolution of stem-initial consonants (chapter 9) and stem-final consonants (chapter 10) appears to be highly dependent on the developments of vowels presented above.

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48 Indeed, I'm guessing that proposing vowel length in PKT may help "clean up" the proposed analysis and make some of the resulting differences in correspondences a little clearer.
9 Phonological Reconstruction: Stem-Initial Consonants

9.1 Introduction: Inventory

The complexity of the vowels studied in the preceding chapter turns out to have a strong correlation with the complexity of stem-initial consonants. Under the analysis presented in this dissertation, the vowel system increased in complexity as the consonant system somewhat decreased in complexity.

9.1.1 The Modified Hale Stem-Initial Consonant Reconstruction

As already noted in chapter 0, stem-initial consonants have received more comparative-historical research than any other part of the phonological system of Kiowa-Tanoan. Of course, in publication this research consists of only two papers by Kenneth Hale (1962, 1967) with later addenda by Laurel Watkins (1977, 1978). Chapter 0 summarized the regular correspondence sets presented in Hale (1967), these being repeated here in Table 9-1.
Watkins (1978) refutes the correspondence set Hale reconstructs as */w/ and proposes a segment */y/ based on a handful of correspondences with palatal reflexes. On the basis of these correspondences, we can summarize the previously posited consonant inventory reconstructed for Proto-Kiowa-Tanoan in Table 9-2. This is a modification of the table in Hale (1967: 115).

This Hale-Watkins reconstruction is produced by making as few changes as possible with respect to the attested modern languages (based on one representative from each branch:

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### Table 9-1: Hale's Consonant Correspondences and Reconstructions

<table>
<thead>
<tr>
<th>PKT</th>
<th>Kiowa</th>
<th>Tewa</th>
<th>Taos</th>
<th>Towa</th>
<th>PKT</th>
<th>Kiowa</th>
<th>Tewa</th>
<th>Taos</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td>*p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>*b</td>
<td>b</td>
<td>m</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td>*t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>*d</td>
<td>d</td>
<td>n,d</td>
<td>n,l</td>
<td>n,d</td>
</tr>
<tr>
<td>*k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>*g</td>
<td>g</td>
<td>g</td>
<td>k</td>
<td>k</td>
</tr>
<tr>
<td>*kw</td>
<td>k(u)</td>
<td>k</td>
<td>k</td>
<td>g</td>
<td>*gw</td>
<td>g</td>
<td>w</td>
<td>w</td>
<td>kw</td>
</tr>
<tr>
<td>*ʔ</td>
<td>Ø</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>*c</td>
<td>t</td>
<td>c</td>
<td>c</td>
<td>s</td>
</tr>
<tr>
<td>*p’</td>
<td>p’</td>
<td>p’</td>
<td>p’</td>
<td>p’</td>
<td>*c’</td>
<td>t’</td>
<td>c’</td>
<td>c’</td>
<td>t’</td>
</tr>
<tr>
<td>*t’</td>
<td>t’</td>
<td>t’</td>
<td>t’</td>
<td>t’</td>
<td>*ch</td>
<td>tʰ</td>
<td>s</td>
<td>s</td>
<td>š</td>
</tr>
<tr>
<td>*k’</td>
<td>k’</td>
<td>k’</td>
<td>k’</td>
<td>k’</td>
<td>*s</td>
<td>s</td>
<td>s</td>
<td>l</td>
<td>tʰ</td>
</tr>
<tr>
<td>*kw’</td>
<td>k’(u)</td>
<td>k’</td>
<td>k’</td>
<td>k’</td>
<td>*g</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
</tr>
<tr>
<td>*pʰ</td>
<td>pʰ</td>
<td>pʰ</td>
<td>f</td>
<td>pʰ</td>
<td>*h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>Ø(ʰ)</td>
</tr>
<tr>
<td>*tʰ</td>
<td>tʰ</td>
<td>tʰ</td>
<td>tʰ</td>
<td>tʰ</td>
<td>*m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td>*kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>x</td>
<td>x</td>
<td>*dz</td>
<td>d</td>
<td>y,j</td>
<td>y</td>
<td>z</td>
</tr>
<tr>
<td>*kwʰ</td>
<td>kʰ(u)</td>
<td>kʰ</td>
<td>xʰ</td>
<td>xʰ</td>
<td>*w</td>
<td>y</td>
<td>w</td>
<td>w</td>
<td>w</td>
</tr>
</tbody>
</table>

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### Table 9-2: Hale-Watkins PKT Stem-Initial Consonant Inventory

<table>
<thead>
<tr>
<th></th>
<th>Bilabial</th>
<th>Dental</th>
<th>Alveolar/Palatal</th>
<th>Velar</th>
<th>Labiovelar</th>
<th>Glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiceless</td>
<td>*p</td>
<td>*t</td>
<td>*c</td>
<td>*k</td>
<td>*kʷ</td>
<td>*ʔ</td>
</tr>
<tr>
<td>Ejective</td>
<td>*p’</td>
<td>*t’</td>
<td>*c’</td>
<td>*k’</td>
<td>*kʷ’</td>
<td></td>
</tr>
<tr>
<td>Aspirated</td>
<td>*pʰ</td>
<td>*tʰ</td>
<td>*cʰ</td>
<td>*kʰ</td>
<td>*kʰ’</td>
<td>*kʰʷ</td>
</tr>
<tr>
<td>Voiced</td>
<td>*b</td>
<td>*d</td>
<td>*dz</td>
<td>*g</td>
<td>*gʷ</td>
<td></td>
</tr>
<tr>
<td>Fricative</td>
<td>*ś</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*h</td>
</tr>
<tr>
<td>Nasal</td>
<td>*m</td>
<td>*n</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glide</td>
<td></td>
<td>*y</td>
<td>*(y)</td>
<td></td>
<td></td>
<td>*(w)</td>
</tr>
</tbody>
</table>

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Kiowa, Towa, Santa Clara Rio Grande Tewa, and Taos Northern Tiwa) and by making those changes that seem to be necessary follow the principle of parsimony. That is, certain sounds are reconstructed from the regular correspondence sets to fit apparent gaps within the above tabular representation.

Correlating the proposed reconstruction with the sound correspondences it’s based on, we can recognize the following developments within the language family. Plain voiceless stops, ejective stops, the glottal fricative, and nasal stops have all remained fairly stable throughout the family. Aspirated stops have tended to spirantize in the Tanoan languages (but not at all in Kiowa), this process having gone to various degrees of completion in different branches. Voiced stops have become nasal stops before nasal vowels in the Tanoan languages. The plain unaspirated and ejective affricates have remained unchanged in Tewa and Tiwa, but have merged with alveolar stops in Kiowa while in Towa the ejective has merged with its alveolar stop counterpart while the plain affricate has become a fricative /s/. The labiovelar stops have merged with the velar stops in different ways in Kiowa and Towa, but have remained in Tewa and Tiwa. The only exception is the voiced labiovelar stop */gʷ/, which merged with velar stops in Kiowa—although Watkins (1978) posits there was also a palatalization process that gave rise to Kiowa /z/—became a voiceless labiovelar stop in Towa, and developed into a labiovelar glide in Tewa and Tiwa. The alveolar fricative */s/ became an alveolar lateral fricative /ɬ/ in Tiwa and a palatal stop /tʲ/ in Towa, but did not change in Kiowa and Tewa. The aspirated and voiced affricates did not remain as such in any language: the former merged with the aspirated alveolar stop in Kiowa and became a fricative in the Tanoan languages;
the latter descends as a glide or affricate in Tewa and Tiwa and as voiced stops or fricatives in Kiowa and Towa.

Hale’s reconstruction was undoubtedly never intended to be the final say. The reconstructions and correspondence sets are based on a little more than 200 proposed cognate sets, many not representing every branch of the family, and most of the correspondence sets are supported by only a handful of cognates. Most of Hale’s and Watkins’ correspondences appear to be valid, but they only go so far and fail to catch a large number of cognates. A thorough examination of large word lists from all four branches reveals a number of forms that tease with similarities, but do not fall under one of the proposed correspondence sets. There are also a number of segments in the modern languages that are not accounted for at all in Hale’s analysis, as already mentioned in chapter 0. This suggests that the earlier proposals require some major additions and revisions.

There are also some problems with a few of the reconstructed segments in comparison to the correspondence sets on which they are based when considering phonetic motivation and typological tendencies. Hale’s reconstruction of */s/, a typologically highly unmarked consonant, necessitates positing a change to /ɬ/ in Tiwa and to /tʰ/ in Towa, both of which are more highly marked sounds. Unless one proposes a subgrouping consisting only of the Tiwa and Towa branches, this proposal involves unmarked */s/ changing to two distinct sounds with greater markedness with no apparent phonological catalyst. For a typologically common sound like [s] to undergo one odd change could be an acceptable proposal. For it to undergo two different (non-sequential) odd changes is highly suspect.
As commented in chapter 0, Hale also proposes three reconstructed segments that do not exist in any of the modern languages, */cʰ, dz, gʷ/. The former two are reconstructed from legitimate sound correspondence sets for reasons of parsimony. There is a four-way contrast in stops between voiceless unaspirated, aspirated, ejective, and voiced, but the languages with alveolar affricates only show a two-way distinction between plain unaspirated and ejective. The segments */cʰ, dz/ thus fill out the other two slots to make the affricates comparable to the stops.

The aspirated alveolar affricate */cʰ/ is based on the reflexes of an aspirated alveolar stop /tʰ/ in Kiowa, an alveolar fricative /s/ in Tewa and Tiwa, and a postalveolar fricative /š/ in Towa. There is no affricate reflex, but we do see the potential evolution of the stop component of the affricate, the fricative component, and the aspiration component, so the reconstruction is probably not entirely off-base even if it should be revisited.

The voiced alveolar affricate */dz/ is based on a voiced alveolar stop /d/ in Kiowa, a voiced alveolar fricative /z/ in Towa, a postalveolar affricate in Santa Clara Tewa (but a palatal glide /y/ in all other Tewa dialects), and a palatal glide /y/ in Taos Northern Tiwa (but a voiceless alveolar ~ postalveolar affricate /c ~ č/ in Picuris Northern Tiwa and Southern Tiwa). Again, the proposed reconstructed affricate seems like a legitimate compromise across the reflexes that Hale considered. However, Hale does not look into the different glide ~ affricate reflexes that we see within the Tewa and Tiwa branches and what it would imply for sound change and language relatedness. He also did not have any typological evidence for sound changes at the time that would suggest the likely path of development, e.g. it is far more amply attested that palatal
glides strengthen to affricates than that affricates lenite to palatal glides (Joan Bybee and Shelece Easterday, personal communication, in preparation).

The voiced labiovelar */gʷ/ is also problematic from a typological perspective. It is reconstructed on the basis of voiced velar stop /g/ followed by a rounded vowel in Kiowa, voiceless labiovelar /kʷ/ in Towa, and labiovelar glide /w/ in Tewa and Tiwa. This seems like a legitimate reconstruction until it is considered that Hale does not provide solid evidence for a labiovelar glide */w/ in the proto-language. It is typologically unusual to have labiovelar stops in a language, but not a labiovelar glide (Ian Maddieson, personal communication). This suggests that either Hale’s reconstructed */gʷ/ is erroneous or that there are more correspondence sets to be discovered that would support a */w/ in PKT.

While these criticisms play a role in reshaping the reconstructed consonant system to arrive at the present proposal, most of Hale’s analysis is correct, if incomplete. That is, for the most part I am adding to Hale’s proposal rather than overwriting it.

9.1.2 Proposed Stem-Initial Consonant Inventory

As the reader will have already gathered from the reconstruction of vowels in chapter 0, my hypothesis is that there was a contrast between front and back velar stops, the front velar stops probably bearing a fair amount of palatalization. There were also contrasts between labialized and non-labialized stops in both the bilabial and velar places of articulation. Less apparent from the previous chapter, I have also merged the affricates and fricatives with the proposed stops, giving the inventory in Table 9-3 to be explored in this chapter.
Table 9-3: Reconstructed Proto-Kiowa-Tanoan Stem-Initial Consonant Inventory

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unaspirated</td>
<td>*p</td>
<td>*pʰ</td>
<td>*t</td>
<td>*kʲ</td>
<td>*kʷ</td>
<td>*q</td>
<td>*qʷ</td>
<td>*qʷ</td>
<td>*ʔ</td>
</tr>
<tr>
<td>Ejective</td>
<td>*p'</td>
<td>*pʰ'</td>
<td>*t'</td>
<td>*k'</td>
<td>*k'ʷ</td>
<td>*q'</td>
<td>*q'ʷ</td>
<td>*q'ʷ</td>
<td></td>
</tr>
<tr>
<td>Aspirated</td>
<td>*pʰ</td>
<td>*pʰʷ</td>
<td>*tʰ</td>
<td>*kʰ</td>
<td>*kʰʷ</td>
<td>*qʰ</td>
<td>*qʰʷ</td>
<td>*qʰʷ</td>
<td></td>
</tr>
<tr>
<td>Voiced</td>
<td>*b</td>
<td>*bʰ</td>
<td>*d</td>
<td>*gʲ</td>
<td>*(h)</td>
<td>*gʷ</td>
<td>*(h)</td>
<td></td>
<td>*h</td>
</tr>
<tr>
<td>Fricative</td>
<td></td>
<td>*(h)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*h</td>
</tr>
<tr>
<td>Nasal</td>
<td>*m</td>
<td>*n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*w</td>
</tr>
<tr>
<td>Glide</td>
<td></td>
<td>*(y?)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A couple of segments are only marginally attested or even wholly questionable. Other developments and problematic features will be further addressed in the coming sections.

The following sections of this chapter will provide an analysis of the correspondences on which the above table is based. This analysis will proceed largely in terms of place of articulation. Section 9.2 begins by reviewing the bilabial stops, including the proposed (if questionable) labialized bilabial stops. Section 9.3 will begin the discussion of alveolar stops, although most reflexes of alveolars must be taken up later, in section 9.6, because of their involvement in the development of fricatives and apparent merger with front velar stops. Following this, section 9.4 delves into the velar and labiovelar consonants, which provide some of the most intricate developments in the family. Such developments are seen in particular in section 9.5, wherein it is proposed that the affricates we find in the modern languages all descend from front or back velar stops. Having discussed the major velar reflexes, section 9.6 attacks the problem of fricatives in the family, proposing that they have developed from both front velar and alveolar stops. Section 9.7 completes the survey of places of articulation with the glottal consonants, proposing two new segments that bear secondary articulation (although only
one of these is firmly supported). Finally, section 9.8 addresses the sketchy evidence for glides in the family.

Many of the proposed consonant reconstructions rely heavily on the vowel correspondence reflexes and reconstructions of chapter 0. Some may also depend on developments in stem-final consonants—and the syllable structures these create—although this is an area that requires further investigation. Before getting into the primary discussion of stem-initial consonant correspondences and reconstruction, section 9.1.3 addresses an important factor for identifying cognates amongst the various fluctuations of stem-initial consonants: laryngeal states.

### 9.1.3 Laryngeal States

The laryngeal states—the contrast in stops among voiceless unaspirated, aspirated, ejective, and voiced—appears to have been highly stable in the history of the family since the break-up of Proto-Kiowa-Tanoan. Previous researchers had noted that voiced stops have become nasal stops in the overwhelming majority of cases in Tewa, Tiwa, and Towa, and verb stem-initial consonant ablaut is realized as an alternation between voiced or ejective stops and their voiceless unaspirated counterparts. The latter has been decreasing in productivity through the course of language change, leading to one or the other of the ablaut alternates to be preserved. However, otherwise a consonant of a particular laryngeal state in one language will have a cognate stop with the same laryngeal state (or some regular development from that stop) in the other languages.

The stability of laryngeal states is a huge boon to cognate identification given the largely monosyllabic CV or CVC forms of Kiowa-Tanoan stems. As we’ll see throughout
this chapter, other features of consonants change quite readily. Place of articulation is extremely slippery: velar consonants correspond to labiovelars; labiovelars correspond to velars; alveolars correspond to velars; velars correspond to bilabials. Manner of articulation also cannot be relied upon: stops correspond to affricates and fricatives, oral stops to nasal stops, glides correspond to fricatives. Except when the laryngeal state is obscured by a change in manner, unaspirated, ejective, and aspirated stops tend to retain these states. If all else changes, laryngeal state will provide a key to picking up on cognates, at least when meaning and/or the rest of the form do not diverge too much.

That being said, laryngeal state is not impervious to the changes that have swept through the family. Indeed, there are probably a fair number of cognate sets in which one or more language has undergone a change of state. It is difficult yet to say how commonly such change occurs since it undermines one of the most reliable means of spotting related items. Examples of mismatches in laryngeal state are provided in Table 9-4.
### Table 9-4: Stem-Initial Consonant Laryngeal State Mismatches

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>lion</td>
<td>t’awmdel</td>
<td>kʰɛŋ</td>
<td>kʰɛŋ</td>
<td>xɛm</td>
<td>xɛn</td>
<td>khim</td>
<td>šɛt’a</td>
<td>*t’i(b) (?)</td>
</tr>
<tr>
<td>wipe</td>
<td>pʰit (&lt; pʰi’l (ROOT))</td>
<td>píri</td>
<td>pídí</td>
<td>pici</td>
<td>piči</td>
<td>piši</td>
<td></td>
<td>*piši (?)</td>
</tr>
<tr>
<td>ten</td>
<td>kʰ’-kʰj</td>
<td>tɕʰ</td>
<td>tɕʰ</td>
<td>tɕʰ</td>
<td>tɕʰ</td>
<td>tɕʰ</td>
<td>tɕʰ</td>
<td>*kʰj (?:)</td>
</tr>
<tr>
<td>grous e</td>
<td>pê</td>
<td>ŝæ’</td>
<td>pʰɛ</td>
<td>pʰɛ</td>
<td>pʰɛ</td>
<td>pʰɛ</td>
<td>pʰɛ</td>
<td>*pʰɛ (?:)</td>
</tr>
<tr>
<td>dry, thin</td>
<td>tʰáp</td>
<td>t’a’v</td>
<td>t’a’v</td>
<td>t’a’v</td>
<td>t’a’v</td>
<td>t’a’v</td>
<td>t’a’v</td>
<td>t’a’v</td>
</tr>
<tr>
<td>dwell</td>
<td>kíl</td>
<td>tha’</td>
<td>tʰal’</td>
<td>tʰi</td>
<td>tʰi</td>
<td>tʰi</td>
<td>tʰi</td>
<td>tʰi</td>
</tr>
</tbody>
</table>

Sometimes there is only a difference in laryngeal state, as in the wipe, dry, ten, and grouse sets (notwithstanding the Tewa cognate in that last). Sometimes there is also a difference in place of articulation, as in lion, ten, and dwell. In either case the difference in laryngeal state creates a problem. Not only is it difficult to determine a reconstruction for the PKT consonant involved, it is difficult to decide whether or not the stems with different laryngeal states are even cognate!

So far as I’ve noted to date, cognates with different states always or almost always occur before reflexes of the high front vowel */i/. Since this is a context for a variety of changes in the languages, it is perhaps not surprising to find laryngeal
alternations in this environment as well. The cases have so far been sporadic and I am so far uncertain if there is an actual pattern to their occurrence.

Within these reconstruction chapters, I treat identified forms with laryngeal differences as potential cognates, marked with a question mark (?). They play some small role in discussing sound changes with respect to place or with respect to vowels, but the reader should recognize their questionable status until further research provides some way of being more certain of their relationships.

9.2 Bilabial Consonants

Hale (1967) reports the bilabial consonants to be fairly stable in the modern Kiowa-Tanoan languages. The unaspirated and ejective stops */p/ and */p’/ and the nasal stop */m/ remain unaltered across the languages. The aspirated stop */pʰ/ has remained as such in Kiowa, the Northern Tiwa languages, and Arizona Tewa, has spirantized to /ɸ/ in Towa, and is variably a stop /pʰ/ or fricative /ɸ ~ ɹ/ in Southern Tiwa and the Rio Grande Tewa dialects. The voiced stop */b/ has nasalized to /m/ in the Tanoan languages before a nasal vowel, but remains an oral stop in Kiowa. The development of voiced bilabial oral and nasal stops will be addressed in section 9.2.2. A new feature that is being proposed here, although tentatively, is a series of labialized bilabial stops. These cases are problematic and will be discussed separately in section 9.2.3. The first section will focus on the other bilabial stops: voiceless, ejective, and aspirated.
9.2.1 Non-Voiced Bilabial Stops

Hale’s description of the evolution of bilabial stops */p/, */pʰ/, and */pʼ/ in the modern Kiowa-Tanoan languages accounts for the majority of cases. A particular development of ejective */pʼ/ which seems to be limited to compounds will be discussed in chapter 10.1.1. Otherwise, Table 9-5-Table 9-7 illustrate the primary correspondences.

First, there is the plain voiceless unaspirated bilabial stop, shown in Table 9-5.

Table 9-5: Cognate Sets, PKT */p/

<table>
<thead>
<tr>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>*p</td>
</tr>
</tbody>
</table>

- **fear**: pe | pîhæ: | pia (> pi (NEG), piya (INC)) | pia (> piače (ST)) | pê | *piC
- **flower**: póvi | pobi | páb | pam | pap | pâ (> pâpeš (l)) | *pap(V)
- **bed, mattress**: pál | pq? | pié | pê | pô | *pił
- **sew**: pál | pæŋ | pêl | pij | pêŋi | *pidV
- **deer**: pâ: | pê: | pe: | pe | pi | pij | *pidV
- **snake**: pê:yû | pêcu | pêco | piju | pâyû | *piyû
- **heart**: piŋ; piŋge middle | piŋ; piŋge middle | pia; pían middle | pia; pían middle | pê | *pi(d)
- **elder brother**: pa bî | pâhpâ: | pâpa | papa | pê:pi | *pipV
- **fish**: pa: | paw | pí | pí | pô | *pl(C)
- **percussive sound**: pô-y | pû: | pû: | pû | pû | pô | *pû(C)
- **die, dead**: pé: | ču:; pení corpse | kû: | piw | piw | piaw | pê | *p³iC
The plain voiceless bilabial stops above are fairly straightforward and clear, notwithstanding some questionable cognates (Kiowa bed and fish). The cognate set for die does preview a development in Tewa, showing a postalveolar or palatalized velar stop where a bilabial is expected (see section 9.5.3). However, the Rio Grande Tewa word pení corpse, possibly derived from die, does reflect a plain bilabial stop. The above set is enough to posit */p/ in the proto-language.

Aspirated bilabial stops appear to show the same degree of simplicity of correspondence, notwithstanding spirantization in Towa and some varieties of Tewa and Tiwa.

Table 9-6: Cognate Sets, PKT */pʰ/

<table>
<thead>
<tr>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pl</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>pʰ</td>
<td>pʰ~f</td>
<td>pʰ</td>
<td>pʰ</td>
<td>pʰ</td>
<td>pʰ~f</td>
<td>f</td>
<td>*pʰ</td>
</tr>
<tr>
<td>hair</td>
<td>pʰˈgya</td>
<td>phō</td>
<td>pʰó</td>
<td>pʰα</td>
<td>pʰa</td>
<td>pha</td>
<td>φâ</td>
</tr>
<tr>
<td>fire</td>
<td>pʰíˈ</td>
<td>phaː</td>
<td>pʰaː</td>
<td>pʰa</td>
<td>pʰia</td>
<td>pʰa</td>
<td>*pʰi</td>
</tr>
<tr>
<td>smoke</td>
<td>phiˈ</td>
<td>pʰiwe</td>
<td>pʰiwi</td>
<td>pʰewɛn</td>
<td>pʰɛn</td>
<td>pʰɛ</td>
<td>*pʰ(Ci)</td>
</tr>
<tr>
<td>cloud</td>
<td>pʰˈn</td>
<td>pʰɛ</td>
<td>pʰɛ</td>
<td>ph</td>
<td>φɛ</td>
<td>*pʰɛn</td>
<td></td>
</tr>
<tr>
<td>louse, flea</td>
<td>pʰˈ</td>
<td>pʰɛ</td>
<td>kʰɛ-pʰu</td>
<td>pʰa-</td>
<td>pʰa-</td>
<td>pʰa-</td>
<td>*pʰu</td>
</tr>
<tr>
<td>black</td>
<td>phēŋ</td>
<td>pʰɛŋ</td>
<td>pʰun</td>
<td>pʰon</td>
<td>pʰun</td>
<td>pʰun</td>
<td>*pʰud</td>
</tr>
<tr>
<td>blow</td>
<td>pʰˈt</td>
<td>sipheˈgíˈ</td>
<td>pʰucí</td>
<td>pʰuši</td>
<td>pʰiš</td>
<td>*pʰuk(i)</td>
<td></td>
</tr>
<tr>
<td>fly (n.)</td>
<td>phuyʊ</td>
<td>pʰuyʊ</td>
<td>pʰuyʊ</td>
<td>pʰoʊyʊ</td>
<td>pʰoʊyʊ</td>
<td>pʰoʊyʊ</td>
<td>*pʰiyV</td>
</tr>
</tbody>
</table>
We will see some curious correspondences between aspirated bilabial stops and other consonants elsewhere, but the above correspondences do motivate the reconstruction of */pʰ/ in Proto-Kiowa-Tanoan.

Finally, we find a largely one-to-one correspondence between ejective bilabial stop across the modern languages, seen in Table 9-7.

Table 9-7: Cognate Sets, PKT */pʰ/

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>water</td>
<td>p'</td>
<td>p'o</td>
<td>p'o</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'a</td>
</tr>
<tr>
<td>moon</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
</tr>
<tr>
<td>mountain</td>
<td>m'</td>
<td>p'al</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>rubbish</td>
<td>pile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>head</td>
<td>k'yây-</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
</tr>
<tr>
<td></td>
<td>p'én</td>
<td>p'én</td>
<td>p'í</td>
<td>p'í</td>
<td>p'í</td>
<td>p'í</td>
<td>p'í</td>
<td>p'í</td>
</tr>
<tr>
<td>laugh</td>
<td>p'é</td>
<td>p'á</td>
<td>p'á</td>
<td>p'á</td>
<td>p'á</td>
<td>p'á</td>
<td>p'á</td>
<td>p'í</td>
</tr>
<tr>
<td>spin, twist</td>
<td>p'én</td>
<td>p'én</td>
<td>p'í</td>
<td>p'í</td>
<td>p'í</td>
<td>p'í</td>
<td>p'í</td>
<td>p'í</td>
</tr>
<tr>
<td>younger sister</td>
<td>p'í</td>
<td>(a'yú)</td>
<td>(a'yú)</td>
<td>(a'yú)</td>
<td>(a'yú)</td>
<td>(a'yú)</td>
<td>(a'yú)</td>
<td>(a'yú)</td>
</tr>
<tr>
<td>five</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Perhaps the most significant change to affect the ejective bilabial stops is illustrated by the Tewa forms of younger sister and the Kiowa cognates in the five and road sets. Here we see that the bilabial stop has been lost. This change seems to be sporadic amongst monomorphemic words. Chapter 10.1.1, however, will describe a semi-regular environment in which the loss is encountered.
In addition to the above regular and relatively unchanging correspondences, we also find a handful of cases where a bilabial stop shows a correspondence with a palatalized velar stop in Arizona Tewa and a postalveolar affricate or fricative in Rio Grande Tewa. Such cases are seen in Table 9-8.

Table 9-8: Cognate Sets, Bilabial-Front Velar (Tewa) Correspondences

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>grouse</td>
<td>pê</td>
<td>šqê</td>
<td>pʰê</td>
<td>pʰê</td>
<td>pʰê</td>
<td>*pʰį</td>
<td></td>
<td></td>
</tr>
<tr>
<td>louse,</td>
<td>šuwa</td>
<td>kʰuwa</td>
<td>pʰiaya</td>
<td>pʰičić</td>
<td>phiače</td>
<td>φi</td>
<td>*pʰwig/i</td>
<td></td>
</tr>
<tr>
<td>flea</td>
<td>šu ~ šu</td>
<td>pʰiy</td>
<td>pʰiy</td>
<td>pʰiy</td>
<td>φôsê</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nose</td>
<td>pʰʊʔ-ʔu-</td>
<td>šu</td>
<td>kʰu</td>
<td>pʰiy</td>
<td>pʰiy</td>
<td>pʰiy</td>
<td>*pʰIq(V)</td>
<td></td>
</tr>
<tr>
<td>die</td>
<td>pê</td>
<td>ču ~ piw</td>
<td>kʰu</td>
<td>piw</td>
<td>piw</td>
<td>pài</td>
<td>*pʰil</td>
<td></td>
</tr>
<tr>
<td>bloom</td>
<td>pʰq-</td>
<td>šu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>on fruit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These cases will be discussed further in section 9.5.3 along with the more general development of the Tewa palatalized velar series of consonants. That these sets might be comprised of valid cognates is supported by the corresponding laryngeal accompaniment on the stem-initial consonant bolstered by the close semantic correspondence.

9.2.2 Voiced Bilabial Stops and Nasals

Previous descriptions of Kiowa-Tanoan voiced bilabial oral stops (Hale 1962, 1967, Watkins 1977, 1984, Davis 1989, Ortman 2012, Sutton 2009) have pointed out that PKT voiced stops became nasal stops before nasal vowels in the Tanoan languages, but not in Kiowa. That is, */b/ became /m/ in Tanoan, but remained /b/ in Kiowa before a nasal vowel. The PKT nasal stop */m/ did not change in any of the languages, remaining
Taking into account more correspondences, e.g. Trager (1942), we can note that in Northern Tiwa and in Arizona Tewa, all word-initial voiced stops have become nasal stops. The complementary distribution of oral and nasal stops before oral and nasal vowels does appear to largely hold in Rio Grande Tewa, Southern Tiwa, and Towa though. Cognate sets demonstrating voiced bilabial correspondences appear in Table 9-9.

Table 9-9: Cognate Sets, PKT */b/ (Before a Nasal Vowel)

<table>
<thead>
<tr>
<th>Kt</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>go</td>
<td>bá̂ (&gt; bánma (IPF))</td>
<td>mä̂</td>
<td>mč̂</td>
<td>mč̂</td>
<td>mɟ̂</td>
<td>mɢ̂</td>
<td>*bɟ(n)</td>
</tr>
<tr>
<td>bring</td>
<td>bό́ (&gt; bánmc (IPF))</td>
<td>mό̂</td>
<td>mą̂</td>
<td>mą̂</td>
<td>mɀ̂</td>
<td>mɀ̂</td>
<td>*bq(n)</td>
</tr>
<tr>
<td>see</td>
<td>bό́</td>
<td>mύ̂</td>
<td>mύ̂</td>
<td>mύ̂</td>
<td>mό̃</td>
<td>mɀ</td>
<td>mɀ</td>
</tr>
<tr>
<td>rotten</td>
<td>bό̇-moisture, musty</td>
<td>mʊ̂</td>
<td>mʊ̂</td>
<td>mʊ̂</td>
<td>mɀ̂</td>
<td>mɀ’t’ẹ</td>
<td>*budV</td>
</tr>
</tbody>
</table>

The above forms all illustrate stops preceding a nasal vowel. The exception is the Kiowa words for *go* and *bring*, although these appear to be cases of vowel denasalization which has affected a handful of stems in the language (cf. chapter 0). Otherwise, we see a nasal stop in all of the Tanoan languages corresponding to an oral voiced stop in Kiowa.

Table 9-10 illustrates the one (possible) cognate set I have found which could contain an instance of */b/ preceding an oral vowel.
Here we find a nasal stop only in Arizona Tewa and Northern Tiwa, where all word-initial voiced stops have become sonorants, and voiced stops in Rio Grande Tewa and Southern Tiwa. However, in Kiowa and Towa we see a voiceless stop instead. We will see another potential cognate in section 9.2.3 among the labialized stops. However, stem-initial voiced stops are not particularly common in any of the Tanoan languages. With such a limited set of data, it is difficult to be certain of the developments here. It is not clear if this should be reconstructed in Proto-Kiowa-Tanoan as a voiceless or a voiced stop. I tentatively suggest it is a voiced stop, but this requires further study.

Table 9-11 gives cognate sets containing a stem-initial */m/.

<table>
<thead>
<tr>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>*m</td>
</tr>
</tbody>
</table>

**hand**

- mēn
- mąż
- mąż
- män
- män
- män
- mätə (hand)
- mą (finger)

**count**

- maq pa
- maq pa
- mąpi
- mąpi
- mąpə
- mąpə
- mąq (INC)
- mąq (INC)

**give, hand, feed**

- maq go
- maq (PO T), pa (INC)
- męki feed
- męke feed
- męki feed
- mę (INC)
- mę (INC)
- mąqi (?)
- maq (INC)

Table 9-10: Cognate Set, PKT */b/ (Before an Oral Vowel)

<table>
<thead>
<tr>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
<td>b</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>b</td>
<td>p</td>
<td>*b</td>
</tr>
</tbody>
</table>

**jar, round**

- pőtkya
- bę
- mle
- mulu
- molo
- buru
- pi li

*apple, round object*

<table>
<thead>
<tr>
<th>Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>apple</td>
</tr>
<tr>
<td>object</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stem Initial</th>
</tr>
</thead>
<tbody>
<tr>
<td>voiceless stop</td>
</tr>
</tbody>
</table>

Table 9-11 gives cognate sets containing a stem-initial */m/.

<table>
<thead>
<tr>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>*m</td>
</tr>
</tbody>
</table>

**hand**

- męn
- mąż
- mąż
- män
- män
- män
- mätə (hand)
- mą (finger)

**count**

- maq pa
- maq pa
- mąpi
- mąpi
- mąpə
- mąpə
- mąq (INC)
- mąq (INC)

**give, hand, feed**

- maq go
- maq (PO T), pa (INC)
- męki feed
- męke feed
- męki feed
- mę (INC)
- mę (INC)
- mąqi (?)
- maq (INC)

Table 9-11 gives cognate sets containing a stem-initial */m/.
The first two sets may actually begin with the same morpheme. The Tanoan word for *count* appears that it could be a compound containing the morpheme meaning *hand*, although the second member of the compound is not apparent. The Tewa and Towa forms suggest the second member could be *pi make* (Te *pa*; To *pá*), but the Tiwa reflex of *make* are Ta *pa*, Pi *pia*, ST *pe*, not the /pi/ we see in *count*¹. If this word is a compound, then we find only two stems reflecting nasal stop */m/.

However, in *give* it should be noted that, even though all languages show a word-initial /m/, the stem undergoes consonant ablaut of /m/ to /p/ in Rio Grande Tewa. This alternation is typically associated with /m/’s that descend from PKT */b/*, suggesting either that this stem should be reconstructed with */b/* and the Kiowa cognate has (aberrantly?) nasalized to /m/ or that there may have been a reanalysis in Rio Grande Tewa that has innovated the ablaut in this case on analogy with other stems showing /m ~ p/ alternations.

The above sets should highlight certain salient restrictions we find in an evaluation of cognates across Kiowa-Tanoan languages. First, there is only a couple of secure cognate set where we find a stem-initial /m/ across the modern languages, and thus only one or two morphemes that are reconstructed with stem-initial */m/*. Other stem-initial /m/’s that we find in the modern languages and that have identified cognates in the other languages all seem to descend from nasalization of */b/*. Second, the only confirmed instances of stem-initial */b/* for which we find cognates across the modern languages all precede a nasal vowel (thus showing nasalization in the Tanoan languages). We do find /b/ before oral vowels corresponding in Tewa and Tiwa in at least one stem,

¹ Considering the reconstruction of this stem with a high vowel, however, the Tiwa word for *count* may actually preserve the original form even though the independent stem underwent a vowel change.
but the cognates in Kiowa and Towa have a voiceless stop. The limited distribution of these voiced bilabial sounds is troubling for a reconstruction of a voiced series of stops in Proto-Kiowa-Tanoan.

I do not have an answer for these restricted distributions at the moment. One possibility is that the voiced bilabial oral and nasal stops were simply rare segments stem-initially. Thus the paucity of cognate sets could partly just be a product of insufficient documentation of the languages and further fieldwork could turn up more. Another possibility, not mutually exclusive with the previous, is that the voiced bilabial stops developed relatively late in the development of Proto-Kiowa-Tanoan. While they may have existed by the time the proto-language began separating into its daughter languages, future research may uncover evidence that they evolved shortly before from some other consonants, e.g. from non-voiced bilabial stops (nasal vowels following plain unaspirated, aspirated, and ejective bilabial stops are not among the highly frequent CV sequences in any of the modern languages). I leave this question open for further research.

9.2.3 Labialized Bilabial Consonants?

The weakest and most tentative part of the reconstructed consonant inventory proposed here is the series of labialized bilabial stops: */pʷ, pʷ’, pʷʰ, bʷ/. While such segments are found among the world’s languages, they are not all that common,
especially in North or Central America. The reason for proposing them goes along with
the analysis of the Tiwa diphthongs /ɨo, ɨa/ and /uɔ, oa/ in chapter 8.7, both of which are
analyzed here as the results of labialized consonants preceding a vowel in certain
contexts. Since we do find instances of these vowels—and their correspondences in
Kiowa, Tewa, and Towa—following bilabial stops, this leads to the implication that there
were labialized bilabial consonants.

I will state straight-up that I have strong doubts about the existence of this stop
series as such, at least as enduring phonemic segments. I will use the symbols here
essentially as placeholders until further research can better isolate their approximate
articulation. My guesses about their ultimate resolution are: a) the labialization that leads
to the vowel correspondence sets on which the series is based may be a coarticulatory
effect of the simple bilabial stops in certain phonological environments; b) the labialized
bilabial articulation may have existed as a short-term phonological product as labiovelar
stops developed into bilabial stops in certain contexts; or, c) the labialized bilabial stop
series did exist, although was probably the result of some consonant-vowel coarticulatory
effect in the transition between some earlier Pre-Proto-Kiowa-Tanoan system into the
post-Proto-Kiowa-Tanoan developments (e.g. the remnant of some ancient PPKT
rounded vowel).

I do not know what the phonological motivation for hypothesis (a) would be yet
since we do find simple bilabial stops preceding the same vowels as I propose lead to the
labialization cases. Hypothesis (b) seems possible on the basis of other velar-bilabial
correspondence (cf. section 9.5.3). Also, we find */kʷ/ > /p/ in the nearby (Northern)
Caddoan languages of the Plains. I have yet to identify any evidence that the particular cognate sets in question which show the labialized bilabial stops descend themselves from (labio)velar consonants. Hypothesis (c) accepts that indeed there were labialized bilabial stops in Proto-Kiowa-Tanoan, whether it was an enduring feature or not, but seeks to lay ground for identifying the motivation for such areally and typologically odd segments.

In any case, this series of stops requires further investigation, but I will settle on the labialized bilabial stop representation for now as a way to mark these cases for future research. Table 9-12 present the cognate sets on which the reconstructions are based.

---

3 Compare Kitsai **kʷɑˑtu** to Pawnee **pɑˑtu¹** blood.
Table 9-12: Labialized Bilabial Stop Cognate Sets

<table>
<thead>
<tr>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>Tʌ</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>bag, sack</td>
<td>bım-kʰɔy</td>
<td>mู้</td>
<td>mู้</td>
<td>mŋ</td>
<td>mŋ</td>
<td>φi-mq</td>
<td>*bʰim</td>
</tr>
<tr>
<td></td>
<td>/ só-ɓiʃ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>quiver (arrow-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>bag)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>turn</td>
<td>bɔn</td>
<td>bɨ</td>
<td>mɨli</td>
<td>mɨli</td>
<td>mul</td>
<td>mɨ-hor</td>
<td>*bʰidV</td>
</tr>
<tr>
<td></td>
<td>bend</td>
<td>turn ;</td>
<td>turn,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>buŋ</td>
<td>return ;</td>
<td>mul</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>bęgiŋ</td>
<td>bend (TR)</td>
<td>mulu</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>louse, flea</td>
<td>šuwa</td>
<td>kʰuwa</td>
<td>pʰiay</td>
<td>pʰiɛl</td>
<td>pʰọ</td>
<td>phiače</td>
<td>*pʰhɡ(i)</td>
</tr>
<tr>
<td>nose</td>
<td>pʰʊ-</td>
<td>šu ~ šu</td>
<td>kʰu</td>
<td>pʰi</td>
<td>pʰiy</td>
<td>pʰiy</td>
<td>φôsë</td>
</tr>
<tr>
<td>die</td>
<td>pɛ</td>
<td>ću ;</td>
<td>piw</td>
<td>piw</td>
<td>piaw</td>
<td>piaw</td>
<td>pæ</td>
</tr>
<tr>
<td></td>
<td>ćuń</td>
<td>ćuń ;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pení</td>
<td>corpse</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gopher,</td>
<td>pín</td>
<td>pů</td>
<td>pů</td>
<td>pů</td>
<td>pů</td>
<td>pů</td>
<td>*pʰqn</td>
</tr>
<tr>
<td>groundhog</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dye</td>
<td>čuwe</td>
<td>kʰuwe</td>
<td>piawi</td>
<td>piawi</td>
<td>vë</td>
<td>*pʰi(CV)</td>
<td></td>
</tr>
<tr>
<td>beaver</td>
<td>p’ů</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*pʰ1C</td>
</tr>
<tr>
<td>become</td>
<td>p’ů</td>
<td></td>
<td></td>
<td>po</td>
<td>poa</td>
<td>pâ</td>
<td>*pʰiq</td>
</tr>
<tr>
<td></td>
<td>(&gt; pʰu-ũũ</td>
<td></td>
<td></td>
<td>ũu</td>
<td>ũu</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[IPF])</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fresh, ripe</td>
<td>p’ɛ’-g’a ;</td>
<td>p’e’ ;</td>
<td>p’iɔ ;</td>
<td>p’i</td>
<td>p’i</td>
<td>p’i</td>
<td>*pʰu(ව)</td>
</tr>
<tr>
<td></td>
<td>ʰi p’ɛ’-</td>
<td>ᵇ’-p’i’-</td>
<td>ᵇ’-p’i’-</td>
<td>ᵇ’-p’i’-</td>
<td>ᵇ’-p’i’-</td>
<td>ᵇ’-p’i’-</td>
<td>*pʰu(C)</td>
</tr>
<tr>
<td></td>
<td>baby</td>
<td>infant</td>
<td>baby</td>
<td>baby</td>
<td>baby</td>
<td>baby</td>
<td></td>
</tr>
<tr>
<td>lose, dispose of</td>
<td>p’ɛ’-g’</td>
<td>p’ɛ’-g’</td>
<td>p’iɔ ;</td>
<td>p’i</td>
<td>p’i</td>
<td>p’i</td>
<td>v’o-t’e</td>
</tr>
<tr>
<td></td>
<td>drop, fall</td>
<td>(&gt; p’ɛ’-</td>
<td>ᵇ’-p’i’-</td>
<td>ᵇ’-p’i’-</td>
<td>ᵇ’-p’i’-</td>
<td>ᵇ’-p’i’-</td>
<td>lose</td>
</tr>
<tr>
<td></td>
<td>(&gt; p’ɛ’ni</td>
<td>(&gt; p’ɛ’ni</td>
<td>(NEG))</td>
<td>(NEG))</td>
<td>(NEG))</td>
<td>(NEG))</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(POT), pe</td>
<td>throw</td>
<td>away</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(INC)</td>
<td>(S/D)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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The cognate sets for *bag* and *turn* suggest a voiced labialized bilabial stop */bʷ/. The sets for *louse* and *nose* both suggest the aspirated stop */pʰʷ/. The unaspirated counterpart */pʷ/ is seen in *die*, *gopher*, *dye*, *beaver*, and *become*. Finally, *ripe* and *lose* present a possible ejective */pʷ'/, although the proposed cognates of the *lose* set contain certain irregularities in the stem-final consonant.

As stated, the primary motivation for proposing this series of stops is to account for the vowel correspondences. Sometimes we find rounded/back vowels in one language corresponding to a low or front vowel in another language. Chapter 8.7 presents other evidence that suggests an association between labialized consonants and the Tiwa diphthongs. A different account of the vowels may remove the need for a labialized bilabial stop series. Hopefully the issue can be resolved with further study, but I will leave this marked bilabial series in place for the moment as one way to deal with the consonant and vowel correspondences we find.

### 9.2.4 Summary of Stem-Initial Bilabial Consonants

For the most part, bilabial stops in Kiowa-Tanoan have been relatively well-behaved and stable. More complicated developments of bilabial stops will be covered below, in section 9.5.3 and in chapter 10. Table 9-13 summarizes the basic developments presented above.
Table 9-13: Summary of Correspondences, Stem-Initial Bilabial Stops

<table>
<thead>
<tr>
<th>*PKT</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>*p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
</tr>
<tr>
<td>*p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
<td>p'</td>
</tr>
<tr>
<td>*pʰ</td>
<td>pʰ</td>
<td>pʰ</td>
<td>pʰ</td>
<td>pʰ</td>
<td>pʰ</td>
<td>pʰ</td>
<td>pʰ</td>
</tr>
<tr>
<td>*b</td>
<td>b</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td>*m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
</tr>
</tbody>
</table>

Bilabial stops show perhaps the least complicated developments within the family as a general rule. However, when irregularities crop up, they are quite striking.

In comparison the alveolar stops of the next section ultimately require greater elaboration, the basic correspondence sets proposed by Hale only covering a limited number of cognate sets.

9.3 Alveolar Consonants

The non-voiced alveolar stops of Proto-Kiowa-Tanoan, */t/, */t'/, and */tʰ/, have all remained fairly stable under Hale’s (1967) account of the family. In previous analyses the only interesting development is the spirantization of the aspirated stop in Southern Tiwa, Towa, and some dialects of Rio Grande Tewa. The nasal stop */n/ also remained unchanged while the voiced stop */d/ underwent nasalization comparable to what was reported for the voiced bilabial stop. These latter two voiced segments will be addressed in section 9.3.2 below.

The plain, ejective, and aspirated alveolar stops actually all do show more complexity of development than was conveyed in Hale’s study. These will largely be addressed in section 9.6. First, however, we will survey the simpler correspondences here in section 9.3.1.
9.3.1 Non-Voiced Alveolar Stops

The basic correspondences as presented in Hale (1967), where the alveolar stops have remained largely unchanged across the family, appear in Table 9-14 to Table 9-16 below. It will be seen that there are not many cognate sets showing these simple correspondences.

Table 9-14 begins us with reflexes of the plain unaspirated alveolar stop */t/.

Table 9-14: Cognate Sets, PKT */t/

<table>
<thead>
<tr>
<th></th>
<th>Kt</th>
<th>RGT</th>
<th>AT</th>
<th>Tα</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>say</td>
<td>tṓ</td>
<td>tū́</td>
<td>tū́</td>
<td>tū́</td>
<td>tṓ</td>
<td>tū́</td>
<td>tū́</td>
<td>*tū́(C)</td>
</tr>
<tr>
<td>flute, reed</td>
<td>tṓ-bā</td>
<td>teŋ</td>
<td>tub</td>
<td>tuφ</td>
<td>tį́</td>
<td>*tuφ (?)</td>
<td>*tuNp(V)</td>
<td></td>
</tr>
<tr>
<td>mark, write, paint</td>
<td>tā́m</td>
<td>tṓ</td>
<td>ti</td>
<td>ti</td>
<td>ti</td>
<td>tṓ</td>
<td>*tI</td>
<td></td>
</tr>
<tr>
<td>elk</td>
<td>tá́</td>
<td>ti</td>
<td>ti</td>
<td>ti</td>
<td>ti</td>
<td>tṓ</td>
<td>*tI</td>
<td></td>
</tr>
</tbody>
</table>

There really are few cognate sets that definitely reflect an original unaspirated voiceless alveolar stop */t/. The unaspirated alveolar stops that we see in the modern languages—which are not as common as one might expect anyway—usually do not correspond to each other across all four branches. Indeed, depending on how the vowel correspondences in the sets for mark and elk are resolved, it could suggest that these may not actually represent an original alveolar even though that is what we end up with in the modern languages⁴.

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⁴ That is, if the vowel correspondence set is partly derived from labialization, this would suggest a labialized consonant, i.e. some kind of velar (unless labialized alveolar stops were proposed).
The ejective alveolar stop is not attested all that much more frequently, as illustrated in Table 9-15.

Table 9-15: Cognate Sets, PKT */t'/

<table>
<thead>
<tr>
<th></th>
<th>Kt</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>antelope</td>
<td>t'áp (&gt; t'ɔ- (COMP))</td>
<td>t'ọŋ</td>
<td>t'ọ</td>
<td>t'ọ</td>
<td>t'á</td>
<td>t'ű</td>
<td></td>
<td>*t'áKʷ (?)</td>
</tr>
<tr>
<td>sagebrush</td>
<td>t'ol- k'yaPa· (?</td>
<td>t'óʔ</td>
<td>t'óloʔ</td>
<td>t'ɔwlu</td>
<td>t'awlo</td>
<td></td>
<td>*t'αCIV (?)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*kʷ'alV (?)</td>
</tr>
<tr>
<td>hear</td>
<td>t'ọ́</td>
<td>t'o</td>
<td>t'o</td>
<td>t'ọl</td>
<td>t'ala</td>
<td>t'ara</td>
<td>t'á-řē-ē</td>
<td>*t'α(k/V)</td>
</tr>
<tr>
<td>ear</td>
<td>t'ő́</td>
<td>ʔo-ye</td>
<td>ʔo-ye</td>
<td>t'ə-liə</td>
<td>t'ə-li</td>
<td>t'ə-li</td>
<td>wā-řē</td>
<td>*t'α-kʷi</td>
</tr>
<tr>
<td>do, act</td>
<td>-t'ő́ FUT</td>
<td>-t'ő́ FUT</td>
<td>t'ə do, dance</td>
<td>t'ə do, dance</td>
<td>t'ə do</td>
<td>t'ə</td>
<td></td>
<td>*t'α</td>
</tr>
<tr>
<td>backside</td>
<td>t'él buttocks</td>
<td>t'ű́</td>
<td>t'ű́</td>
<td>t'ud buttocks, behind</td>
<td>t'ən</td>
<td>t'un</td>
<td></td>
<td>*kʷut</td>
</tr>
<tr>
<td>piñon nut,</td>
<td>k'ó́</td>
<td>t'ọ́</td>
<td>t'ów</td>
<td>t'aw</td>
<td>t'aw</td>
<td>t'ā́ (&gt; t'ā təpőš (I))</td>
<td>*t'α(C) (?)</td>
<td></td>
</tr>
<tr>
<td>nut</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*kʷ'al</td>
</tr>
<tr>
<td>cold</td>
<td>t'ọ́</td>
<td>t'ī́</td>
<td>ʔo-t'ī́</td>
<td></td>
<td></td>
<td></td>
<td>wē-řē</td>
<td>*kʷ'ī</td>
</tr>
</tbody>
</table>

As with the previous set, some of the attested alveolar correspondences may actually reflect a front velar stop */kʲ/ or */kʷ/ rather than alveolar */t'/. It is not certain that Kiowa k’ó́ crack is actually cognate with the Tanoan word for piñon nut. Also, the irregular vowel correspondences of backside and cold make it difficult to be certain what is going on in these sets without appealing to secondary articulation on the adjacent consonant. Meanwhile, the ear cognate set illustrates a change comparable to what we find sporadically with the bilabial ejective, wherein the oral stop has been elided in Tewa and Towa. This will be discussed further in chapter 10.1.1.
Finally, the aspirated alveolar stop correspondence also rarely surfaces with all languages showing alveolar stops. Those attested are presented in Table 9-16.

Table 9-16: Cognate Sets, PKT */tʰ/

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>shoot (with an arrow)</td>
<td>tʰşpkyay</td>
<td>thọŋ</td>
<td>tʰóŋ</td>
<td>tʰɔ̃m</td>
<td>tʰan</td>
<td>tham</td>
<td>šấ p-e</td>
<td>*tʰəb(V)</td>
</tr>
<tr>
<td>bright</td>
<td></td>
<td>the·</td>
<td>tʰele</td>
<td>tʰul</td>
<td>tʰol</td>
<td>thur</td>
<td></td>
<td>*tʰudV</td>
</tr>
<tr>
<td>break</td>
<td>tʰēm</td>
<td>thú·</td>
<td>tʰə·</td>
<td>tʰi</td>
<td>tʰi</td>
<td>tʰi</td>
<td>šó</td>
<td>*tʰIm</td>
</tr>
<tr>
<td>stomach</td>
<td>tʰēn</td>
<td></td>
<td>tʰję</td>
<td>tʰį</td>
<td>thę</td>
<td></td>
<td></td>
<td>*tʰı́n</td>
</tr>
<tr>
<td>gypsum</td>
<td>tʰél</td>
<td>thų́y</td>
<td>tʰų́y</td>
<td>white clay</td>
<td>tʰų́y</td>
<td>white clay</td>
<td></td>
<td>*tʰų́C (?) *kʰų́C</td>
</tr>
<tr>
<td></td>
<td>chalk</td>
<td>white clay</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here again we find all languages showing alveolar stops wherever we have a cognate, but this seems more the exception than the rule.

The above correspondences involving unaspirated, aspirated, and ejective alveolar stops are quite limited when comparing the languages. What we find when we expand our horizons is that often when we find an alveolar stop in one language or a set of the languages, another language will have a velar stop, as in the sets given in Table 9-17.
Table 9-17: Cognate Sets, Alveolar-Velar Correspondences

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>person</td>
<td>k’i· (&lt; k’yã·(-) COMP)) man ; k’i· (&gt; k’yóy (i)) husband</td>
<td>t’owá</td>
<td>t’owá</td>
<td>t’øy</td>
<td>t’ay</td>
<td>t’ay</td>
<td>t’æ·</td>
<td>*t’ig(V) (I) *k’ag(V)</td>
</tr>
<tr>
<td>day</td>
<td>k’i·dá (〈 k’i· (ROOT))</td>
<td>thá·</td>
<td>tLIB</td>
<td>tI</td>
<td>thi</td>
<td>šó</td>
<td>*tI(C) (?) *kI(C?)</td>
<td></td>
</tr>
<tr>
<td>fly (V)</td>
<td>šʊŋ</td>
<td>kʰbó·lI</td>
<td>tʰiɔl-</td>
<td>tʰi</td>
<td>tʰa</td>
<td>hĩ</td>
<td>*kʰbI</td>
<td></td>
</tr>
<tr>
<td>flour</td>
<td>khæŋ</td>
<td>kʰčŋ</td>
<td>tʰi</td>
<td>tʰa</td>
<td>hĩ</td>
<td>*kʰbI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tail</td>
<td>tʰóŋ</td>
<td>xʷɛŋ</td>
<td>kʰhɛŋ</td>
<td>xʷɛ</td>
<td>xʷɛ</td>
<td>khį</td>
<td>hĩ</td>
<td>*qʰbI</td>
</tr>
</tbody>
</table>

I am not yet certain whether the person and day sets descend from alveolar stops or front velar stops, although the latter seem the more probable at the moment considering the development of alveolar stops before high front vowels in section 9.6. In the other cases where we see mismatches between alveolar and velar stops, I reconstruct them as front or back velars. Most of the rest of the reflexes of the alveolar stops will be addressed in the discussion of the development of alveolar fricatives in the family. That discussion also requires knowledge of how the front velar series descended in the family, thus I will postpone the description of these developments until section 9.6.

Finally, we do see another small set of correspondences in which all branches show alveolar stops. There are a handful of cognate sets where we find a voiced alveolar stop in Kiowa corresponding to a voiceless alveolar stop in Tanoan. These are given in Table 9-18.
Interestingly in all of these cases, we find a mid back rounded vowel /o/ or /o/ in Kiowa corresponding to a low vowel reflex in the Tanoan languages. By regular vowel correspondences, the Kiowa reflex would be expected to be /ɔ/ and /ɔ/. It could therefore be stipulated that the sequences */tɑ/ and */tɑ̈/ descend in Kiowa as /do/ and /do/ respectively, although the motivation for this change is not apparent. Future investigation of this set, however, may provide us with a clue to further understanding the seemingly limited alveolar series of consonants.

Alternatively, such a set could be reconstructed with a stem-initial voiced stop */d/. We will see in the next section, though, that this would not fit into the account we otherwise develop on the basis of voiced alveolar stops in Kiowa-Tanoan.

### 9.3.2 Voiced Alveolar Stops

The story of the voiced alveolar oral and nasal stops */d/ and */n/ is almost exactly the same as that which we find for the voiced bilabial stops, as reported in Hale (1967). As reflexes of */n/, all languages show /n/. The Tanoan languages have nasal
stops corresponding to Kiowa /d/ before nasal vowels. Ostensibly alveolar stops before oral vowels remained oral stops. We do find oral correspondences before oral vowels among the Tanoan languages—although the Northern Tiwa languages have /l/ corresponding to Rio Grande Tewa, Southern Tiwa, and Towa /d/, the only instances of word-initial /l/ in these languages. There are only a couple of attested examples of this word-initial /l/ in these languages, however. Arizona Tewa has /n/ corresponding to all cases of word-initial /d/, /l/, and /n/ in the other languages. However, I have yet to identify any examples of Tanoan /d/ corresponding to Kiowa /d/ before an oral vowel, the same issue as with the voiced bilabial stops.

Table 9-19 gives the cognate sets illustrating correspondences reflecting */d/.

Table 9-19: Cognate Sets, PKT */d/ (Before a Nasal Vowel)

<table>
<thead>
<tr>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>P1</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>d</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>*d</td>
</tr>
</tbody>
</table>

| Earth      | náŋ | náŋ | náŋ | náŋ | náŋ | náŋ | *dáŋ |
| Aspen      | náŋ | náŋ | náŋ | náŋ | náŋ | náŋ | *dáŋ |
| Seek       | náŋ | náŋ | náŋ | náŋ | náŋ | náŋ | *dáŋ |
| Chicken    | dí   | ní   | líl | lóo | lóo | díl | *dúu |
| Roll       | daw | bend | back | líl | díl | dól | *dIl |
| Under      | dó   | down | nú’í | nú’í | ná̂ | ná̂ | *dú(C) |

---

5 This Tanoan word is actually an old compound: *dáŋpi earth-made.

6 Vowel correspondences suggest that the initial consonant of this stem may actually descend from a front labiovelar.
As expected, we do find a number of correspondences where Kiowa has a voiced stop /d/ before a nasal vowel while Tanoan languages have a nasal stop /n/. The Kiowa word do·be appears to be an exception at first, but there is evidence that the vowel of this stem has undergone denasalization. This was described in chapter 8.4.1. We find only a couple of stems that show a correspondence of */d/ before an oral vowel among the Tanoan languages, but I have found no definite cognates in Kiowa7.

Perhaps even more interesting is the cognate set reflecting PKT */n/, presented in Table 9-20.

Table 9-20: Cognate Set, PKT */n/

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is indep.</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>*n</td>
</tr>
<tr>
<td>pronoun</td>
<td>ñ́</td>
<td>ñ́</td>
<td>ñ́</td>
<td>ñ́</td>
<td>ñ́</td>
<td>ñ́</td>
<td>ñ́</td>
<td>*ñ̄</td>
</tr>
</tbody>
</table>

The uninteresting feature of this set is that all languages show the same nasal stop reflex, suggesting the segment descends from a nasal stop */n/*. The interesting part is that this is the only cognate set I have found that would suggest such a stem-initial alveolar nasal consonant. The only few other stem-initial nasal stops we find in Kiowa belong to highly grammaticalized morphemes. Indeed, it can be noted that the first person pronoun in Table 9-20 above is also a highly grammaticalized morpheme. Many more lexical morphemes with initial /n/ are found in the Tanoan languages, but all of those appear to descend from */d/ by the nasalization process above. Thus it appears that stem-initial */n/

---

7 Recall that possible Kiowa cognates to */b/* before an oral vowel showed a voiceless stop /p/, thus we might expect the Kiowa correspondence to */d/* before an oral vowel to be /t/. Along these lines, the last syllable of ko·p·a·kil prairie chicken (?-fowl?) could be cognate with the Tanoan chicken set. Along different correspondence lines, Kiowa does have a word záy roll which could be related to the Tanoan roll series.
was virtually non-existent in Proto-Kiowa-Tanoan, perhaps found only in highly grammaticalized morphemes.

The status of voiced oral and nasal stops in Proto-Kiowa-Tanoan requires further research. One avenue of investigation that could help to explain the historical distribution of these segments is suggested by the nearby Caddoan languages. In this family, sonorants undergo "hardening" to stops, or at least to more stop-like consonants, when in word-initial position. For example, in Pawnee a labiovelar glide /w/ becomes [p] word-initially. In both Pawnee and Arikara, the alveolar tap /r/ is pronounced as a nasal stop [n] word-initially. Caddo shows even more hardening alternations: /n/ becomes [t], /w/ becomes [p], and /y/ becomes [d] (Melnar 2004: 198). While a comparable process has clearly not been productive within the Kiowa-Tanoan family since the break-up of the proto-language, such a process in a neighboring language family could indicate a similar development at some stage of Pre-Proto-Kiowa-Tanoan. It is suggestive enough to warrant a little investigation for what is otherwise a notable but unexplained phonotactic restriction in Kiowa-Tanoan.

9.3.3 Interim Summary of Stem-Initial Alveolar Stops

We find surprisingly few instances of stem-initial alveolar stops corresponding among the modern Kiowa-Tanoan languages. Table 9-21 summarizes the basic correspondence sets we saw above.

---

8 In modern Arikara, but not in Pawnee, /r/ and /n/ are contrastive word-internally, but the contrast is neutralized at the beginning of words.
Table 9-21: Summary of Alveolar Stop Correspondences

<table>
<thead>
<tr>
<th>*PKT</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>*t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>d</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>*t’</td>
<td>t’</td>
<td>t’</td>
<td>t’</td>
<td>t’</td>
<td>t’</td>
<td>t’</td>
<td>t’</td>
</tr>
<tr>
<td>*tʰ</td>
<td>tʰ</td>
<td>tʰ</td>
<td>tʰ</td>
<td>tʰ</td>
<td>tʰ</td>
<td>tʰ</td>
<td>ř</td>
</tr>
<tr>
<td>*d</td>
<td>d</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>*n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
</tbody>
</table>

Alveolar stops that fit into these correspondence sets have a curiously limited presence in the modern Kiowa-Tanoan languages. The apparent fate of many alveolar stops will be addressed in section 9.6 below, with the development of fricatives. First, however, it will be necessary to acquire a better understanding of velar stops in the family. Section 9.4 will therefore turn to the velar and labiovelar series while section 9.5 will further expand on the evolution of velars before returning to address the history of alveolar fricatives.

### 9.4 Velar and Labiovelar Stops

While Tewa, Tiwa, and Towa all have labiovelar stops distinct from velar stops, from a comparative-historical perspective it proves necessary to treat these series together. This is because many of the modern velar consonants descend from historical labiovelars, the labialization quality having been transferred to the following vowel. This leaves the velar component of the labiovelar in a position to behave akin to the non-labialized velars in their development into the modern languages. This is not to say that labialized and non-labialized velar stops always show the same behavior, but for presentational purposes they act similarly enough to be treated together.

The other major distinction to make among velars—and one being proposed here for Kiowa-Tanoan in print for the first time—is a contrast between front and back velars.
and labiovelar stops. The proposed series of stops thus consists of front velar stops */k\, */k'\, */g\, front labiovelar stops */kʷ\, */kʷ'\, */gʷ\, back velar stops */q\, */q'\, */qʰ\, and back labiovelar stops */qʷ\, */qʷ'\, */gʷ. The distinction among voiced velars and labiovelars is not as clearly established and I have yet to identify any candidates from which to propose voiced back velar */g/. Such a contrast between front and back velar stops does not exist as such among any of the modern languages\(^9\), so there is no family-internal precedent for this proposal or for the articulatory properties of such contrasting series of consonants. The reflexes we see in correspondence sets below suggest that the front velar stops were probably articulated fairly far forward in the oral cavity and may have been palatalized velars or even full palatal stops. How far back the back velars were, on the other hand, is not apparent. I make use of the uvular stop notation */q/, but only to simplify the representation of these series, especially the labiovelar series: */qʷ/ contrasting with */kʷ/ is visually easier to parse than {kʷ} contrasting with {kʷ'\} or {kʷʰ}. There is no synchronic evidence that I have distinguished to suggest that these were actually uvular consonants. Given one of the developments of this series in Kiowa (section 9.5.2) and the palatalization of all velars in modern Towa, these back velar stops may not have been produced all that far back on the velum.

Section 9.4.1 will survey the relatively straightforward primary correspondences involving the (non-voiced) back velar series of stops. The more complex developments of the non-voiced front velars will then be described in section 9.4.2, although the more

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\(^9\) The palatalized velar stops of Arizona Tewa could be considered an example of such a contrast, although these consonants are uncommon in the language and, under the proposal here, do not represent direct descendants of front velars.
intricate correspondences involving back and front velars will be postponed until sections 9.5 and 9.6. The voiced velar stops have undergone some relatively unique changes to be analyzed in section 9.4.3.

9.4.1 Non-Voiced Back Velar Stops

The primary reflexes of the back velar stop series are velars across all branches, although Kiowa does show a major class of exceptions, discussed in section 9.5.2 below. That is, notwithstanding the question of how far back the back velar was produced, this series typically underwent very few changes.

Table 9-22 illustrates the correspondence of the voiceless unaspirated velar and labiovelar stops.

Table 9-22: Cognate Sets, PKT */q, qʷ/

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>P1</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>buffalo</td>
<td>k̓l</td>
<td>k̓ʷ</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
<tr>
<td>bathe,</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
<tr>
<td>swim</td>
<td>(ablaut)</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
<tr>
<td>trade,</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
<tr>
<td>buy</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
<tr>
<td>bring</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
<tr>
<td>dream</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
<tr>
<td>bear,</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
<tr>
<td>strong</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
<tr>
<td>ko dō-</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
<tr>
<td>very</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
<tr>
<td>oak,</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
<tr>
<td>hard</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
<tr>
<td>material</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>k̓</td>
<td>*q̓</td>
</tr>
</tbody>
</table>

10 It is not at all certain that the forms with these meanings are related. The words are homophonous in Rio Grande Tewa and there are suggestive features in the lexical pairs in Arizona Tewa and Northern Tiwa that indicate they could be related.
Both back velars and labiovelars seem to remain unchanged, except in Kiowa and Towa where the labialization often merges with the following vowel into back rounded /o/ and /ɨ/ respectively. Also in Towa, the labiovelar stop becomes a voiced velar stop, at least when preceding a high vowel, as in oak, hard material. However, we can note that the velars in the above table seem only to occur preceding low vowels. This distribution will be important in section 9.5 below.

Ejective back velars and labiovelars similarly show a high degree of stability, at least in certain phonological environments. Cognate sets showing such stable correspondences are given in Table 9-23.

Table 9-23: Cognate Sets, PKT */q', qʷ/

<table>
<thead>
<tr>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>k'</td>
<td>k', kʷ</td>
<td>k'</td>
<td>k'</td>
<td>k'</td>
<td>k'</td>
<td>k', g</td>
<td>*q', *qʷ</td>
</tr>
</tbody>
</table>

- grease: k'į'-gya, k'ągi, k'ąyə, k'į, *q'ąq(V)
- dipper: k'éré, k'utu, k'olo, k'uru, *q'utu
- be lying (S/D): k'ó, k'ó, k'á, *q(ʷ)'
- sharp: k'į-knife, k'e, k'įiyə, k'iče, k'i, *q'ą(CV)
- lay (P): k'ú (> k'óp PF), k'ódi, gósə, *q'ak'i
- jackrabbit: k'ąm-sa, k'ąq, k'ą, k'ą, gó-tev rabbit stick, *q'ąm
- neck: k'ól, k'é; k'iw-throat, k'í, k'ia, *q'ąl
- on top: k'ąye, k'ia, k'ia, gówá, *q'ą(CV)
- sheep: k'úwá, k'u, k'oa, k'ę, *q'iQ(V)
The most notable changes are that both Kiowa and Towa once again have lost labiovelar consonant as such, fusing the labialization with the following vowel. Kiowa, at least, maintains the ejective velar portion, but in Towa the ejective becomes a voiced stop.

We again find non-labialized velars across the board, almost only preceding low vowels and, in all but Kiowa (where I do not have a verified cognate for *dipper*), preceding a high back vowel. The labiovelar ejective stops, on the other hand, are found before low vowels and (potential) high vowels, although the primary high vowel candidate (*goat*) does not appear to have a Kiowa cognate.

Finally the aspirated velar stops are illustrated in Table 9-24.

Table 9-24: Cognate Sets, PKT */qʰ, qʷʰ/

<table>
<thead>
<tr>
<th></th>
<th>Kt</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>skin</td>
<td>kʰ</td>
<td>kʰ</td>
<td>x,</td>
<td>xʰ</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>name</td>
<td>kʰ</td>
<td>kʰ</td>
<td>x</td>
<td>x</td>
<td>kʰ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(upper)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>arm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>roast</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dirty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>heavy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>eight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bite</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tail</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| skin   | kʰɔ́ | kʰowɔ | xay | xay | xay | wæ-hæ | *qʰaq(V) |
| name   | kʰ | kʰɔ́wɛ | kʰɔ́wɛ | xə | xə | kʰæ | hí | *qʰKw(V) |
| (upper)| kʰ  | kʰ  | x  | x  | kʰa  | hæ | *qʰa |
| arm    | kʰ  | kʰ  | x  | x  | kʰa | hæ | *qʰa |
| roast  | kʰ  | kʰ  | x  | x  | kʰa | hæ | *qʰa |
| dirty  | kʰ  | kʰ  | x  | x  | kʰa | hæ | *qʰa |
| dark   | kʰ  | kʰ  | x  | x  | kʰa | hæ | *qʰa |
| heavy  | kʰ  | kʰ  | x  | x  | kʰa | hæ | *qʰa |
| nine   | kʰ  | kʰ  | x  | x  | kʰa | hæ | *qʰa |
| eight  | kʰ  | kʰ  | x  | x  | kʰa | hæ | *qʰa |
| bite   | kʰ  | kʰ  | x  | x  | kʰa | hæ | *qʰa |
| tail   | kʰ  | kʰ  | x  | x  | kʰa | hæ | *qʰa |

As with other aspirated stops, the back velar has undergone spirantization in all varieties of Tiwa), in some dialects of Tewa, and in Towa (although an aspirated stop articulation was attested in the Southern Tiwa dialects well into the 20th century). Lenition has gone even further in Towa, the stop now realized as a glottal fricative. The same lenition is
found with the labiovelar. Also, like the other labiovelars above, the labialization has merged with the following vowel in Kiowa and Towa, leading to a neutralization of the labiovelar and non-labialized velar stops in these two languages.

There are some anomalies that can be seen in the above. The most obvious are two of the Kiowa cognates. In tail Kiowa has an aspirated alveolar stop corresponding to the (labio)velar seen in Tanoan. This appears to be motivated by the following high front vowel */i/*, which has been obscured by the labialization fusing with the original vowel to give modern /q/. In heavy, if we do have a true cognate, we find a bilabial stop in Kiowa corresponding to a velar stop in the Tanoan languages. Based on vowel correspondences, this stem actually appears to derive from a labiovelar, which could explain the Kiowa bilabial: the labialization became coarticulated with the velar stop to give an aspirated bilabial stop.

Less apparent in Table 9-24, as well as among the plain and ejective back velars of Table 9-22 and Table 9-23 respectively, we find that the labialization of labiovelars tends to be lost as an articulatory feature of consonants when preceding a low vowel or high vowel\(^{11}\). It is only preserved as labialization on ejective velars preceding a low vowel in Tewa. Elsewhere the labialization is either lost entirely or is coarticulated with the following vowel (see chapter 0). It is probably due to this process that labiovelar stops show such an uneven distribution in the modern languages.

---

\(^{11}\) I have not found any cognate sets that can be reconstructed with a high back vowel following labiovelar consonants. There is a phonotactic restriction against such sequences in the modern languages, so it may have also held in Proto-Kiowa-Tanoan.
We will see some more regular radical departures of back velar stops in the sections to follow. Before getting into those, it is first necessary to consider the most basic correspondences among the proposed front velar series of stops.

### 9.4.2 Non-Voiced Front Velar Stops

The front velar stops have various realizations depending on their accompanying laryngeal quality, presence or absence of labialization, and the quality of the following vowel. Largely, however, front velar stops are characterized by a great deal of fluctuation and change, where we see different places and manners of articulation across the languages in cognate sets. Such fluctuation is in fact one of the key motivations for proposing a front-back contrast in velar stops. One of the major developments of front velars, affricates in Tewa and Tiwa, will be described in section 9.5.1. They also play a significant role, alongside alveolar stops, in the development of fricatives, analyzed in section 9.6. Indeed, because of all of the major changes that front velar stops have undergone, very few cognate sets can be presented in this section. Most correspondences will therefore be discussed in with the development of affricates and fricatives in those sections. Otherwise, the prevailing trend is that while one or more language shows a velar reflex, one or more others show an alveolar.

The radical developments of front velar stops are affected much more strongly by the accompanying laryngeal feature (aspiration and glottalization) than are other consonants. However, much like the back velar series in the previous section, front velar and labiovelar stops often pattern together. The labialization of the front velars often
influences the following vowel, the stop portion merging with the non-labialized front velars in synchronic perspective.

Table 9-25 presents cognate sets that appear to demonstrate potential reflexes of front velar stops, but do not show as many of the complicated developments of the next sections.

Table 9-25: Cognate Sets, Front Velar Stops

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PT</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>person</td>
<td>k’i’ (&gt; k’ya’- (COMP)) man; k’i’ (&gt; k’yóy (I)) husband</td>
<td>t’ówa</td>
<td>t’ówa</td>
<td>t’ay</td>
<td>t’ay</td>
<td>t’â’</td>
<td>*k’u’agi(V) (I)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*t’ig(V)</td>
</tr>
<tr>
<td>fly (V)</td>
<td>ūŋ</td>
<td>kũbó-li</td>
<td>tũi-</td>
<td>tũiar-</td>
<td>ūl-</td>
<td>*kũb-adV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>eat</td>
<td>k’o’ (&gt; k’o’ (IPF))</td>
<td>k’o’lo’</td>
<td>k’al</td>
<td>k’ar</td>
<td>t’élé ( &gt; séle (INC))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>devour</td>
<td>k’o’ (&gt; k’o’ (IPF))</td>
<td>k’o’lo’</td>
<td>k’al</td>
<td>k’ar</td>
<td>t’élé ( &gt; séle (INC))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>backside</td>
<td>t’él</td>
<td>t’ú’</td>
<td>t’ud</td>
<td>t’on</td>
<td>t’un</td>
<td>*k’ut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nut, nut</td>
<td>k’ó’</td>
<td>t’ó’</td>
<td>t’aw</td>
<td>t’aw</td>
<td>t’á’ (&gt; t’á’ tũōš (I))</td>
<td>*kũw-al (?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>piñón</td>
<td>t’ó’</td>
<td>t’î’</td>
<td>*t’ó-t’î’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*k’w-i</td>
</tr>
<tr>
<td>cold</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>day</td>
<td>k’i’da’ (&lt; k’i’ (ROOT))</td>
<td>tha’</td>
<td>tahu’</td>
<td>thí</td>
<td>thi</td>
<td>sō</td>
<td>*kũbI(C?) (?)</td>
<td></td>
</tr>
<tr>
<td>flour</td>
<td>khæŋ</td>
<td>kũkň</td>
<td>thic</td>
<td>thí</td>
<td>thia</td>
<td>hĩ</td>
<td>*kũb-in</td>
<td></td>
</tr>
</tbody>
</table>

In *person* we find a velar stop in Kiowa corresponding to an alveolar stop in Tanoan. The vowel correspondence of this set is problematic. It is not entirely apparent if this should
be interpreted as an alveolar stop backed to a velar in Kiowa by a following high front vowel or a front velar fronted to an alveolar and followed by a low vowel. The sets *backs*ide, *piñon*, and *day* are comparable in their consonant reflexes (except for the alveolar in Kiowa *t’él buttocks*). The set *cold* also seems like a candidate given the mixed high front vowel and rounded vowel reflexes (suggesting a labialized consonant before a high front vowel.)

In the *fly* cognate set, we get an alveolar aspirated stop in Tiwa, plus its regular correspondence /š/ in Towa, but reflexes of a front velar occurring in Tewa. In particular, the diphthong of Tiwa and the initial consonant in Arizona Tewa indicate that the initial consonant was labiovelar */kʰʷ/. Very similar is the *flour* set, in which Tiwa has alveolars corresponding to velars in Tewa. Here, however, Towa shows more of a velar reflex (in the /h/) than in *fly*, in which /š/ is seemingly more of a reflex of alveolars.

The cognate set for *eat* shows velar reflexes before a low vowel in all but Towa. This would normally indicate a back velar */q’/*. However, the Towa word shows reflexes that suggest a front velar (see section 9.5.1). The two apparent Kiowa cognates *k’šlé* eat and *k’yótkó* devour greedily suggest a possible motivation for this mixed set. Before a historically open syllable (as indicated by the stem-final consonant /l/, cf. chapter 10.2.4), the palatalization tended to be lost before a low vowel in Kiowa, Tewa, and Tiwa. In at least this stem, this led the front velar to merge with the reflexes of back velars. However, the Kiowa form *k’yótkó* suggests that the palatalization may have been preserved in (historically) closed syllables, as indicated by the glide preceding a low back vowel, rare in Kiowa. I have found no reflex of this palatalization in Tewa or Tiwa. In Towa, on the other hand, it appears that the front velar underwent the same development as other front
velars: the ejective */kʲ/ fronted to /t'/ while the unaspirated */kʲ/ of the ablauted stem
fronted and spirantized to /s/.

Such examples appear to be exceptional. Most of the front velar series underwent
changes which have obscured their origin. One of these changes was to develop into
alveolar affricates in Tewa and Tiwa and alveolar stops or fricatives in Kiowa and Towa.
We do also find alveolar affricates in Kiowa which are not typically cognate with the
Tewa and Tiwa affricates. However, these too did develop from velar stops. Furthermore,
we find a set of postalveolar affricates in Rio Grande Tewa which have never been
accounted for in any previous published studies. The derivation of these all of these
affricates will be described in section 9.5.3.

9.4.3 Voiced Velar and Labialized Velar Stops

All branches of Kiowa-Tanoan include a voiced velar stop in their inventory (but
no voiced labiovelar stop). What this listing does not reveal, however, is that the
distribution of this segment is highly restricted in two of those branches. In Tewa and
Tiwa virtually no indigenous lexical items begin with the voiced velar, the only
morphemes that do being highly grammaticalized. Kiowa and Towa, on the other hand,
show a much higher occurrence of their voiced velars, although these are not actually
cognate with one another.

9.4.3.1 Voiced Labiovelar Stops

Hale (1967) had reconstructed a voiced velar stop */g/ in Proto-Kiowa-Tanoan,
but had next to no evidence for it. He reconstructed it primarily to provide a voiced
counterpart to the other reconstructed velar stops. He also reconstructed a voiced
labiovelar stop */gw/, although his reasoning for this segment was more compelling. In fact the correspondence set he identifies, along with his reconstruction, provide the clues as to what the fates of the other voiced velar consonants were. Hale’s correspondence set appears in Table 9-26, along with additions for the languages he does not include in his study.

Table 9-26: Hale's Voiced Labiovelar Stop Correspondence Set

<table>
<thead>
<tr>
<th>*Hale</th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pl</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>*gw</td>
<td>g</td>
<td>z</td>
<td>w</td>
<td>w</td>
<td>w</td>
<td>w</td>
<td>kW</td>
<td>*gw</td>
</tr>
</tbody>
</table>

The second Kiowa correspondence, /z/, is based on Watkins’ (1978b) addendum to Hale’s findings. This voiced alveolar fricative is argued to appear before a high front vowel. Building on this set, the dental-velar switch that Watkins (1984) describes also predicts that the Kiowa reflex might also sometimes be /d/. This would be limited to contexts in which the vowel following an expected /g/ reflex becomes modern Kiowa /e/, motivating the productive /g/ to /d/ change.

Because there are not the tell-tale signs of palatalization that often accompany the front velar series, I reconstruct this consonant as back velar */gw/12. Table 9-27 illustrates the correspondence with the cognate sets in which the above correspondences occur.

12 The spirantization to /z/ in Kiowa also mirrors the development of affricates from back velars described in section 9.5.2.
### Table 9-27: Cognate Sets, PKT */gʷ/

<table>
<thead>
<tr>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>g, z</td>
<td>w</td>
<td>w</td>
<td>w</td>
<td>w</td>
<td>w</td>
<td>kʷ</td>
<td>*gʷ</td>
</tr>
</tbody>
</table>

**medicine, herb**

| | góp | wo̞ | wo̞ lo | wo̞l | wal | war | kʷâ | *gʷadV (?) |

**heal**

| | gũ̞ (> kũ̞ (INC)) | wówáci | wo̞wáci | wo̞ | wa̞ be alive | wawi heal | wa̞ be alive | kʷé-&q | *gʷa(C?) |

**stalk**

| | gómg-yá | wq̞ | wq̞ | w̜ | w̜ | w̜ | kʷj̞ | *gʷqm |

**rib**

| | gũ̞ | wa-khú || kʷâ̞ | *gʷi |

**stand**

| | dé̞ (> dé̞ g̞̜ (NEG)) | wínú (> k̞inú (INC)) stand up ; | wínú be standing ; | wínę (> kʷ̞inę (INC)) stand up ; | kʷen be standing | wín̞i stand up ; | kʷi(b) | *gʷ̞i(C?) (?) | *gʷ̞i(C) (?) |

**breast**

| | zép | wâ̦ | wâ̦ la | wi | wi | wi | kʷ̞ô | *gʷIV |

**tooth**

| | zé̞m (COMP) (> zó̞ (BAS)) | w̜̞c̞ | w̜c̞ | wi̞ | wi̞ | kʷ̞ô̞ | *gʷ̞im |

**pine**

| | zón | wè̞ŋ | wè̞ | w̜̞ | w̜-la | kʷ̞â̞ | *gʷ̞in |

**thorn**

| | w̜̞ | w̜̞ | kʷ̞â̞ | *gʷ̞i |

**deep**

| | zó̞y | wè̞ | wè̞ | w̜̞ | kʷ̞ó t’æ | *gʷ̞iC(V) |

The Tewa and Tiwa reflexes are consistently /w/ while Towa always has /kʷ/. Just as Watkins observed, we do only seem to find the /z/ reflex in Kiowa before front vowel reflexes. This obstruent is followed by a rounded vowel which has conserved the labialization of the original segment */gʷ/* except when the syllable is closed by a bilabial
consonant /m, p/. Before low vowels, the Kiowa reflex is /g/ followed by a rounded vowel.

The exceptions to the above patterns might be found in rib and stand. In both of these we seem to find Kiowa /g/ or /d/ before a high front vowel reflex. Assuming we do have actual cognates in these examples, one possibility is that something about the vocalic context did not motivate the fronting and spirantization of */ɢʷ/ to /z/. Another possibility to explain these is that there was a contrast in PKT between a front labiovelar */ɢʷ/ and a back labiovelar */ɢʷ/, evidence for which has not yet been found. If so, these two consonants may have merged in the Tanoan languages while Kiowa reveals a difference in at least a few lexical items. Unfortunately it has been difficult to identify cognates involving voiced labiovelar reflexes to investigate this issue further so far.

9.4.3.2 Voiced Velar Stops

Another proposal in the literature that may indicate an original voiced velar stop is Hale’s (1967) reconstruction of */dz/ and Watkins’ (1978b) proposal of PKT */y/.

Although supporting Hale’s reconstruction of voiced affricate */dz/, Watkins points to other data from Kiowa and the Tanoan languages that suggest a PKT glide */y/, realized in the correspondence set in Table 9-28.

Table 9-28: Hale-Watkins Palatal Glide/Affricate Correspondence Sets

<table>
<thead>
<tr>
<th>*Hale</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>Ta</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>*dz</td>
<td>d, z</td>
<td>y ~ j</td>
<td>y</td>
<td>y</td>
<td>č</td>
<td>č</td>
<td>d, z</td>
<td>*ğı</td>
</tr>
<tr>
<td>*y</td>
<td>z</td>
<td>y ~ j</td>
<td>y</td>
<td>y</td>
<td>č</td>
<td>č</td>
<td>d, z</td>
<td></td>
</tr>
</tbody>
</table>
The key difference between these two sets is that verbs that have */y/ as their initial consonant show ablaut with an affricate /c/ in both Kiowa and Tewa and Tiwa. This is in fact the one context where affricates in these three branches actually seem to correspond with one another (but see section 9.5.2 below). Watkins’ tentative suggestion is that the two PKT consonants fell together in the evolution of the modern languages, the distinction only (minimally) being retained word-initially in Kiowa.

Recognizing that these two correspondences are virtually identical, I propose instead that they represent a single segment reconstructable to PKT. Moreover, instead of reconstructing it as a palatal glide or alveolar affricate, I reconstruct it as a voiced front velar stop */gʲ/. This is suggested by a number of pieces of evidence. First, the voiced obstruent realization of the PKT segment in Kiowa and Towa must be reconciled with the palatal glide we find in Tewa and Taos Tiwa. We find cross-linguistically that alveolar and postalveolar affricates like Hale’s */dz/ are not expected to lenite to a palatal glide. The direction of change is normally the reverse (Joan Bybee and Shelece Easterday, personal communication, in preparation). This might at first suggest a reconstruction as a glide */y/ with the Kiowa and Towa obstruents developing by glide hardening. However, this is not to say that no obstruents ever lenite to glides. In fact in at least one dialect of modern Rio Grande Tewa, we see the voiced velar stop /g/ leniting to fricative [ɣ] and further to a glide, [y] in the context of a front vowel, [w] in the context of a rounded vowel. Having proposed a front velar series for Proto-Kiowa-Tanoan, a possible voiced counterpart */gʲ/ seems like a good candidate for the correspondence sets in question.

Another piece of evidence is the stem-initial consonant ablaut pointed out by Watkins (1978), which does require explanation. Aside from the change of voicing, the /y
~ c/ alternation we see in modern Tewa and Taos Tiwa, corresponding to /z ~ c/ in Kiowa, does not fall under any of the regular patterns of the morphophonological alternation, i.e. ejectives and voiced or nasal stops alternating with plain voiceless stops. However, if we propose that */gʲ/ lies behind modern /y/ and we see in section 9.5.1 that modern /c/ descends from plain voiceless */kʲ/ (or from */q/ in Kiowa), then this becomes a historically regular instance of the ablaut, showing a simple voicing alternation.

Under this proposal, the front velar */gʲ/ would have fronted to an alveolar obstruent in Kiowa and Towa in the same way that other front velars developed (see section 9.4.2 above). In Tewa and Tiwa, the front velar lenited to a palatal glide /y/ (probably via a sequence like [ɣʲ] > [ʝ] > [y]). The voiced postalveolar affricate /j/ (IPA [dʒ]) that we find in Santa Clara Tewa and the voiceless alveolar ~ postalveolar affricate of Picuris Tiwa and Southern Tiwa must have then developed by glide hardening as a later development, a common change in palatal glides cross-linguistically. It is not unfeasible that this hardening may have begun to develop in these branches of the family before the */gʲ/ had fully lenited to a glide, although it is difficult to say for certain at present. Indeed, the actual phonetic realization of */gʲ/ in the last stages of Proto-Kiowa-Tanoan may have already begun to front and lenite, although it was probably an obstruent in at least some environments given the reflexes in Kiowa and Towa.

The possible cognate sets illustrating a voiced velar segment */gʲ/ are given in Table 9-29.
Table 9-29: Cognate Sets, PKT */gʲ/*

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>d, z</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>č</td>
<td>č</td>
<td>z</td>
<td>*gʲ</td>
</tr>
<tr>
<td>request, command</td>
<td>d刊物</td>
<td>yŋŋ</td>
<td>yŋŋ</td>
<td>yŋŋ</td>
<td>ččččč</td>
<td>ččččč</td>
<td>zå·ýō</td>
<td><em>g/aK</em>(i)</td>
</tr>
<tr>
<td>sing, song</td>
<td>dŋ</td>
<td>yɔ</td>
<td>ċa</td>
<td>ċa</td>
<td>zå·</td>
<td>*g/u</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mother</td>
<td>yiyá</td>
<td>yiyá</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>walk, go about</td>
<td>zè ma (IPF) (&gt; cā' (INC))</td>
<td>yǐ' (&gt; cǐ' (INC))</td>
<td>yǐa (&gt; cia (INC))</td>
<td>ċia (&gt; šia (INC))</td>
<td>*gim</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sleep</td>
<td>dŋ'</td>
<td>yô'</td>
<td>yóh</td>
<td>yia</td>
<td>cǐ</td>
<td>čia</td>
<td>dǐ</td>
<td>*dim (?)</td>
</tr>
</tbody>
</table>

I have not found many cognate sets to fully support a stem-initial voiced velar stop. Moreover, in these few sets, we find two reflexes in Kiowa and two in Towa. Kiowa most regularly shows /d/, but we find one form with /z/. Conversely, Towa most regularly has /z/, but shows /d/ in one form. Interestingly, the divergent forms in the languages correspond to the two cognate sets which have homophonous reflexes in the Tiwa languages: walk and sleep. In Kiowa the different consonants in these two sets are both followed by the same vowel /ę/. In Towa unfortunately I do not have a cognate to compare these two stems.

One possibility is that these sets represent a merger of a front velar */gʲ/* with a voiced alveolar */d/ in certain contexts, particularly before a high front vowel. Such an analysis is suggested for voiceless stops in section 9.6. Under this analysis, walk would contain a front velar, spirantizing before the high front vowel in Kiowa just as the labiovelar stop does in section 9.4.3.1 above. The set meaning sleep may have then been

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13 One possibility is the bound form vĩ - walking. The origin and status of Towa /v/ is still unclear at this juncture to determine whether this form could indeed be cognate.
initialized by a voiced stop */d/, which underwent a lenition to a palatal glide in Tewa and Tiwa—merging with */g/—but remaining a stop in Kiowa and Towa. Something in this process may also explain the strange vowel reflexes we find in Tewa and Towa in *sleep*.\(^{14}\)

Another possibility is that we have contrast between front velar stop */g/ and back velar stop */g/, just as was suggested for labiovelars. Under this proposal, the back velar would likely be the source of the initial consonant in *walk*, the high front vowel motivating the fronting. The other sets would then contain the front velar. The motivation for the Towa */d/ reflex in *sleep* and the odd vowels in Tewa and Towa would still not be explained in this account. We do seem to be missing a back velar voiced stop otherwise. This is not necessarily a problem considering the seemingly rather marginal status of voiced stops in the family anyway coupled with the typological tendency for languages to lack voiced velar stops (if they are going to be missing any).

As with other voiced stops in the family, the velar reflexes are difficult to establish and are not robustly attested. Hopefully further investigation can uncover yet more cognates on which to make further generalizations on the development of these consonants. For the moment we can tentatively claim that there was a voiced front velar stop */g/, but the existence of a back velar counterpart is highly suspect.

### 9.4.4 Interim Summary of Stem-Initial Velar Stops

The richly elaborated velar stop series is highly frequent and well-attested in the family. The above sections have covered the simpler reflexes of the stops, most often

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\(^{14}\) Table 9-29 also shows another possibility, *gum sleep*, where this form did contain a front velar */g/, but this stood before a high back vowel (on the basis of the Towa cognate).
realized before back vowels. In this context back velar stops have changed very little across the languages, except for the voiced stops. Labiovelar stops typically behave just like their non-labialized counterparts. Front velar stops do not show so transparent a pattern and their primary reflexes have still to be introduced. A summary of the simple reflexes of the (mostly back) velar stops appears in Table 9-30.

Table 9-30: Summary of Velar Stop Correspondences

<table>
<thead>
<tr>
<th>*PKT</th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>*q</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
</tr>
<tr>
<td>*qʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
</tr>
<tr>
<td>*qʷ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
<td>kʰ</td>
</tr>
<tr>
<td>*gʰ</td>
<td>g²</td>
<td>g²</td>
<td>g²</td>
<td>g²</td>
<td>g²</td>
<td>g²</td>
<td>g²</td>
</tr>
<tr>
<td>*gʷ</td>
<td>g²</td>
<td>g²</td>
<td>g²</td>
<td>g²</td>
<td>g²</td>
<td>g²</td>
<td>g²</td>
</tr>
</tbody>
</table>

The back velars do undergo certain changes in the context of front vowels in at least one language. These correspondence sets, along with the primary correspondence sets reflecting front velar consonants will be discussed in section 9.5.

**9.5 The Development of Affricates**

In the Kiowa, Tewa, and Tiwa branches we find two alveolar affricates, one plain and one ejective (although in Southern Tiwa the plain affricate has become a postalveolar fricative /š/). Despite this, the Kiowa affricate almost never corresponds to the Tewa and Tiwa affricates, indicating that it must be accounted for separately. On top of these alveolar affricates, Rio Grande Tewa also possesses two postalveolar affricates /č, čʾ/ and...
a postalveolar fricative /š/. Correspondences to these segments outside of the Tewa branch have been elusive up until now.

This section will present the correspondences and reconstructions of all of these affricates. Section 9.5.1 will first analyze the Tewa and Tiwa alveolar affricates. This will be followed with a description of the Kiowa affricates in section 9.5.2. Finally, section 9.5.3 will tackle the Tewa postalveolar series.

9.5.1 Tewa and Tiwa Alveolar Affricates

There are numerous cognates with corresponding affricates among the Tewa and Tiwa languages and Hale (1967) identifies their regular correspondences as alveolar stops and fricatives in Kiowa and Towa. These correspondence sets lead him to reconstruct two alveolar affricates in Proto-Kiowa-Tanoan, based on the correspondence sets in Table 9-31.

Table 9-31: Hale’s Alveolar Affricate Correspondence Sets

<table>
<thead>
<tr>
<th>*HALE</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>*c’</td>
<td>t’</td>
<td>c’</td>
<td>c’</td>
<td>c’</td>
<td>č’</td>
<td>č’</td>
<td>t’</td>
<td>*k’ , *k’</td>
</tr>
<tr>
<td>*c</td>
<td>t</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>č</td>
<td>s</td>
<td>s</td>
<td>*k , *k’</td>
</tr>
</tbody>
</table>

Both of these affricates correspond to an alveolar stop in Kiowa, plain or ejective accordingly. In Towa the correspondence of the ejective is also a stop\textsuperscript{15}, but the correspondence to the plain affricate is a fricative. Note that we also saw these Towa consonants corresponding to a front velar in section 9.4.2, in the cognate set for eat in Table 9-25. While Hale’s account of PKT affricates evolving into these Kiowa and Towa

\textsuperscript{15} Hale (1956-1957) in his field notes indicates that the Towa alveolar ejective /t’/ is sometimes pronounced as an affricate [ts’]. This is also reported in Sprott (1992) and Yumitani (1998) on the basis of Hale, but both authors found the ejective to be articulated as a stop among their consultants.
correspondences is reasonable from a phonetic standpoint, it does not take into account such velar correspondences or certain other distributional facts.

In modern Tewa the distribution of /c'/ is far more restricted than it is in Tiwa. Namely it appears primarily before modern Tewa /e/, /æ̞/, /i/, with only one attested instance each of it appearing before /a/, /ɑ̈/, /u/, and /y/. When we take into account the correspondences and the reconstruction of the vowels of all of these items, we find that these environments precede high vocalic elements: */i/ (> /ɑ̈/, /i/), */į/ (> /æ̞/, plus /ɑ̈/ in the one instance), */u/ (> /e/), and */C'ʷV/ (> /e/, plus the instances of /u/ and /y/). In Tiwa, on the other hand, we find /c’, č’/ before all regularly occurring vowels except /u/, ǫ/ but it is rare before all diphthongs except /iə, ia, i/. It is in fact fairly frequent before the latter.

Cognate sets involving these ejective affricates are seen in Table 9-32.
In both Tewa and Tiwa, the affricate reflexes are most common before high vowels. It was suggested in section 9.4.2 that the palatalization of front velars may have been lost under certain phonological conditions preceding a low vowel */α/. However, we do find at least one cognate set in which the derived affricate precedes a low vowel, cf. liver. I have found no Tewa cognate to this set. I have also not confirmed any Tewa cognates for the other stems in Tiwa in which an ejective affricate is seen preceding a low vowel.

The Kiowa and Towa correspondences are fairly regular, an ejective alveolar stop typically occurring in the cognate. The one exception I have found so far is in the spruce
set where Kiowa and Towa show a velar stop. These velar reflexes may be preserved due to the high back vowel */u/, although lacking secure Tiwa cognates, it is difficult to be certain of the original vowel of this stem.

Given the distributional facts, I propose that Tewa and Tiwa /c'/ evolved from front velar */kʲ/ and front labiovelar */kʷ/'. In Tiwa this change appears to have applied to nearly all instances of these segments. In Tewa the change applied only before high vowels or high vocalic elements. This difference in distribution of the affrication suggests that it continued to be productive in the Tiwa branch after it had separated from Tewa.

The distribution of the plain affricate TE /c/, TA /c/, PI /č/, ST /š/ is somewhat different than its ejective counterpart. In Tewa it is most common before /e/ (< */u/) and /i/ (< */i/), but is also fairly common before /q/ (< */(Cʷ)q/) and is attested before /a/, /æ/, /o/, and /u/. Several of these rarer instances occur only by stem-initial consonant ablaut where /c/ is related in stems to either /c'/ or /y ~ j/. There is a similarly distinctive distribution of /c, č, š/ in the Tiwa languages. It almost never occurs with any diphthong except /ia, i/ (< */i/) with which it is highly frequent. It also occurs commonly with /i, e/ (< */i/) and /u, o/ (< */u/) and sporadically with other vowels. As in Tewa, some of these less frequent occurrences occur only by ablaut that changes a stem-initial consonant to /c, č, š/ from /c', č'/ or /y, č/.

Cognate sets demonstrating the distributions of the plain alveolar affricate in comparative perspective appear in Table 9-33.
Table 9-33: Cognate Sets, PKT */kʲ, kʷ/ (Change to Affricates)

<table>
<thead>
<tr>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>cooked, ripe</td>
<td>tá</td>
<td>ciwe</td>
<td>ciye</td>
<td>ci</td>
<td>ši</td>
<td>sè</td>
<td>*kʲi(C)</td>
</tr>
<tr>
<td>eye</td>
<td>tá⁻</td>
<td>cí</td>
<td>cí</td>
<td>cí</td>
<td>ši</td>
<td>sè</td>
<td>*kʲi</td>
</tr>
<tr>
<td>talk, speak</td>
<td>té'l</td>
<td>cía</td>
<td>či</td>
<td>šia</td>
<td>sè</td>
<td>*kʲil</td>
<td></td>
</tr>
<tr>
<td>flint, knife</td>
<td>cí</td>
<td>cía</td>
<td>či</td>
<td>šia</td>
<td>sè</td>
<td>*kʲi</td>
<td></td>
</tr>
<tr>
<td>eagle</td>
<td>ce</td>
<td>ce</td>
<td>ciw</td>
<td>ciw;</td>
<td>šiw;</td>
<td>šuču</td>
<td>*kʷi(C) (?)*kʲu(C)</td>
</tr>
<tr>
<td>seven</td>
<td>cé</td>
<td>cé</td>
<td>cu</td>
<td>co'o</td>
<td>šu</td>
<td>sí(l)</td>
<td>*kʷu(l)</td>
</tr>
<tr>
<td>hunt</td>
<td>ci-</td>
<td>či</td>
<td>ši</td>
<td>só-</td>
<td>*kʲl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>blue, green</td>
<td>cąwę́</td>
<td>cął</td>
<td>cął</td>
<td>šır</td>
<td>*kʷq(V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>come out</td>
<td>cáń́-west, yesterday</td>
<td>cáń</td>
<td>cáń</td>
<td>šān</td>
<td>*k/qd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sinew</td>
<td>té</td>
<td>cą́</td>
<td>cę</td>
<td>šię</td>
<td>zię</td>
<td>*kʲi</td>
<td></td>
</tr>
</tbody>
</table>

In the confirmed sets attested above, all languages show their expected correspondences given the correspondence set reported by Hale (1967). The affricates are found in particular when preceding a high vowel, but are also found before a low nasal vowel in blue and come out. From these data it appears that in both Tewa and Tiwa, we have front velar */kʲ/ and */kʷ/ affricating before reflexes of high vowels */i/ and */u/ while */kʷ/ also affricated before */q/.

The above correspondences that include alveolar affricates in Tewa and Tiwa can effectively be considered the primary reflexes of the ejective and voiceless unaspirated front velars. Even though their primary reflexes are all alveolars, further motivation for reconstructing these sets as velars will be considered in the next few sections.
9.5.2 Kiowa Alveolar Affricates

The Kiowa affricates /c, c'/ almost never show a correspondence with the affricates in Tewa and Tiwa discussed in the previous section. Hale (1962, 1967) did not attempt to account for these affricates, although Watkins (1978b, 1984) notes that they appear normally to correspond to velar stops in the Tanoan languages. Thus, it appears that we have a fronting and affrication process similar to that which created the Tewa and Tiwa affricates. However, there must be some difference in the environment or in the changing segment which led to the creation of the Kiowa consonants. Otherwise, we would expect the Kiowa affricates to correspond to Tewa and Tiwa affricates.

We already find a pattern in their synchronic distribution. Like other alveolar consonants in Kiowa, the affricates do not occur preceding a high vowel /i, į/ nor do they tend to occur preceding a low back vowel /ɔ, ɔ̃/, only one exception of /c/ preceding /ɔ/ being noted so far, ȼ̃: mother (first or third person possessor). The ejective affricate is also limited and non-occurring before the nasal mid vowels /ǫ, ę/ respectively. Otherwise, the affricates are common enough before low front /a, a/ and mid vowels /e/ and /o/.

Table 9-34 presents cognate sets that show the correspondence of the Kiowa plain affricate /c/.
Table 9-34: Cognate Sets, Kiowa /c/ (< PKT */q, qʷ/)

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>Ta</th>
<th>Pî</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>stand upright</strong> (S/D) (ITR)</td>
<td>cé</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k?</td>
<td>*q, *qʷ</td>
</tr>
<tr>
<td></td>
<td>čå</td>
<td>~ čåŋ</td>
<td>~ čå</td>
<td>k'æŋ</td>
<td>ki</td>
<td>kiy</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>set down</strong> (S/D)</td>
<td>cē</td>
<td>kír</td>
<td>ki</td>
<td>ki</td>
<td>kiy</td>
<td>*qik'i</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>prairie dog</strong></td>
<td>cá</td>
<td>kí</td>
<td>ki</td>
<td>ke</td>
<td>ki</td>
<td></td>
<td>*qi</td>
<td></td>
</tr>
<tr>
<td><strong>mother</strong></td>
<td>cõ</td>
<td>kí</td>
<td>ka</td>
<td>kia</td>
<td>ke</td>
<td></td>
<td>*q'i (?)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p'o-kîŋ</td>
<td>p'o-kîy</td>
<td>p'o-xʷi</td>
<td>p'a-xʷi</td>
<td>p'a-xʷi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>lake (water-?)</td>
<td>lake (water-?)</td>
<td>lake (water-?)</td>
<td>lake (water-?)</td>
<td>lake (water-?)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>liquid</strong></td>
<td>cóy</td>
<td>kú</td>
<td>kú</td>
<td></td>
<td>*qû (?)</td>
<td>*qʷi (?)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When we find cognates in the Tanoan languages, they are always plain velar stops. There does seem to be a correspondence with a Tewa postalveolar consonant in *stand upright*, but this will be shown in section 9.5.3 to also descend from a velar consonant. The cognate set for *liquid* is highly questionable. It is not synchronically transparent what the second part of the Tanoan word for *lake* means. The form does include a labiovelar stop, which could explain the vowel /o/ in Kiowa *cóy*, but otherwise this set remains uncertain.

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16 The correspondence between Tewa /kʷ/ and Tiwa /xʷ/ is also irregular.
In addition to the regular correspondence with velar stops, we also always find the affricate preceding the reflex of a PKT high vowel, usually high front */i/*. The only exception in the above sets is the set for *awl, which appears to contain high back */u/,
although the absence of cognates in Tewa and Towa decreases the certainty of the vowel.

Cognate sets including the Kiowa ejective affricate appear in Table 9-35. They show much the same patterns as the plain affricate correspondences.

Table 9-35: Cognate Sets, Kiowa /c'/ (< PKT */q', qʷ/)

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pl</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>wing</td>
<td>c'ól</td>
<td>k'ųŋ</td>
<td>k'ųŋ</td>
<td>k'ia</td>
<td>k'į</td>
<td>k'iawa</td>
<td>k'ą·tą</td>
<td>*qʷ'ųl</td>
</tr>
<tr>
<td>downy feather</td>
<td>c'ó·</td>
<td>'o-k'ų down feathers</td>
<td>k'ų</td>
<td>k'ia</td>
<td>k'į</td>
<td>k'iawa</td>
<td>k'ą·tą</td>
<td>*qʷ'į (?)</td>
</tr>
<tr>
<td>lay (S/D)</td>
<td>c'ép</td>
<td>k'ų</td>
<td>k'ų (INC)</td>
<td>k'oa (INC)</td>
<td>k'ą (INC)</td>
<td>*qʷ'i(CV?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rock, stone</td>
<td>c'ó·</td>
<td>k'ų</td>
<td>k'ų (INC)</td>
<td>k'ua-til pestle (stone-grind)</td>
<td>xʷj- k'oa money (hard-rock)</td>
<td>k'ą·</td>
<td>*qʷ'i</td>
<td></td>
</tr>
<tr>
<td>thick</td>
<td>c'é·</td>
<td>k'ą·</td>
<td>k'ųa</td>
<td>k'i</td>
<td>k'i</td>
<td>k'ay</td>
<td>*q‘iV</td>
<td></td>
</tr>
</tbody>
</table>

Once again we find the Kiowa affricate regularly corresponding to a velar stop in Tewa, Tiwa, and Towa. The following vowel is always the reflex of a high vowel, usually */i/,
only downy feather being a possible exception. Here more so than in the previous set we see vowel reflexes that indicate a labiovelar consonant.
The above correspondences suggest that Kiowa /c’/ and /c/ developed from the back velar consonants */q’/ and */q/ and their labiovelar counterparts */qʷ’/ and */qʷ/ when these stood before a reflex of high front vowel */i/ and maybe also high back vowel */u/ (and their nasal counterparts). This must have been a relatively late development within the Kiowa branch because no other Kiowa-Tanoan language shows any indication of this kind of fronting of the back velar stops (but see section 9.5.3).

In addition to the regular correspondence with velars (which derive from back velars), we do also see at least one apparent correspondence between the Kiowa affricate /c/ and the Tewa and Tiwa affricates Te /c/, Ta /c/, Pi /č/, and ST fricative /š/. This is found in the following cognate set in Table 9-36.

Table 9-36: Cognate Set, KT walk (Ablaut)

<table>
<thead>
<tr>
<th>Walk, go about</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>walk, go about</td>
<td>čįˑ́ (INC) (&lt; zę m (ROOT))</td>
<td>čį’ ~ ci’ (INC) (&lt; yį’ (ROOT), čį’ve (IMP))</td>
<td>čia (INC) (&lt; yia (ROOT))</td>
<td>šia (INC) (&lt; čia (ROOT))</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is an ablaut form, the voiceless affricate alternating with a consonant here reconstructed as voiced front velar */gʲ/ (see section 9.4.3.2 above). With this reconstruction and considering the reflexes in Tewa and Tiwa, the initial consonant of the ablaut form is expected to reconstruct to */kʲ/. We would therefore expect the Kiowa cognate to begin with /t/, although this is not what we find. Watkins (1978b) points out that the morphological association of ablaut may have prevented the consonant from changing to its expected reflex. This is definitely a possibility.
However, it may be that the Kiowa form is not actually cognate with the Tewa and Tiwa ablaut stem. The ablaut form of motion verb *come* is RGT kææ’, Ta kę, Pi kę, ST kį, which appears to descend from PKT *qi*. The expected Kiowa correspondence to this would be cį’, the form we find in Table 9-36 above. This suggests that the Kiowa ablaut form of *walk around* may in fact be suppletive, creating only an apparent correspondence of affricates.

No matter what the details of this particular stem, it can probably be maintained from the above evidence that the Kiowa alveolar affricates /c, c’/ descend from plain and ejective velar stops when preceding a high vowel. This primarily affected back velar stops since the front velars may have already become alveolar stops (corresponding to the Tewa and Tiwa affricates) by the time the Kiowa affrication developed.

It turns out that the Tewa languages have undergone a similar process of fronting velar stops. The next section will look at the postalveolar obstruents of Rio Grande Tewa and the corresponding front velar stops of Arizona Tewa.

### 9.5.3 Tewa Palatalized Velars and Postalveolar Consonants

Rio Grande Tewa is unique in the family in having two postalveolar affricates and a postalveolar fricative contrasting with the alveolar affricates and fricative. Rio Grande Tewa has the consonants /č’, č, š/ in its inventory, a set of consonants that neither Hale (1967) nor anyone else in publication have ever accounted for or addressed. The consonants do not occur in many words—indeed the ejective /č’/ I have attested in only a

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17 Laurel Watkins (personal communication) has generously shared with me some unpublished write-ups of her comparative-historical observations of this series of consonants, so it is not that no one has ever given any thought to the matter. In these notes she points out the correspondence with palatalized velars in Arizona Tewa and suggests reconstructing palatalized velars in Proto-Kiowa-Tanoan, although she identifies only a few tentative possible cognates outside of the Tewa branch.
couple of lexical morphemes, while /č/ and /š/ are each found in at least half dozen to a
dozen. The Arizona Tewa correspondences to these consonants are palatalized velar
stops: /kʰ/ corresponding to /čʰ/, /k'/ to /č/, and /kʰ/ to /š/. That is, we find in Arizona
Tewa the same laryngeal distinctions between plain, ejective, and aspirated that we do in
other stops in the family. Based on this clear distinction in Arizona Tewa (as opposed to
the less clear relationship among the three consonants in Rio Grande Tewa) and given
probable direction of change from a typological and articulatory standpoint, we can
undoubtedly reconstruct these consonants as palatalized velar stops in Proto-Tewa,
identical to their reflexes in Arizona Tewa.

Outside of Tewa, on the other hand, it has been difficult to identify cognates
within Kiowa, Tiwa, or Towa (cf. footnote 17). This is due both to the limited
distribution of these sounds and the lack of an in-depth lexicon for any of the languages.
Also, it turns out that the correspondences that these consonants end up having are not the
most obvious. Considering their velar reflexes in Arizona Tewa, it would be expected
that their correspondences in the other branches would be velars as well. While a few do
correspond directly with synchronic velar stops in the other languages, the more typical
correspondences appear to be more obscure velar reflexes, as show in Table 9-37.
<table>
<thead>
<tr>
<th></th>
<th><strong>KI</strong></th>
<th><strong>RGT</strong></th>
<th><strong>AT</strong></th>
<th><strong>TA</strong></th>
<th><strong>PI</strong></th>
<th><strong>ST</strong></th>
<th><strong>TO</strong></th>
<th>*<strong>PKT</strong></th>
</tr>
</thead>
</table>
| **stand upright**  
(S/D)                  | cél    | ě́q ~ ě unlawful          | ki     | kiay   |        |        |        | *qʰɪkį |
| **throw away**       | k’í gya (< k’í  
(ROOT)) | ě’á (< ě’á ní  
(POT)) throw away (P), spill | kʰ’ú’ | k’í’ (< k’í t’ē  
(PASS.PF)) |        |        |        | *q’iC(V) |
| **blue jay** (?/?)   | t’ęné bird | ě unlawful       | c’aw   |        |        |        |        | *kʰ‘il(?) |
| **fly (V)**          | śųŋ    | kʰbó li  
|                    |        | t’iəl   | wəl    | wəl    | wjIR   | hō lē  |        | *hʰid(V)  
(> *qʰbíd(V)) |
| **dig**              | hín  
(< tʰó’n-  
(INC)) | yáre ~ šáre  
(> šare  
(INC)) dance ; cf. šá  
ascend  
(ARCHAIC) (?) | kʰełë  
| wialı  
(> xʰiiali  
(INC)) ; wid  
(> xʰid  
(INC)) jump, throw  
(??) | wili  
| wiari  
| hō wā  
upstairs  
(??) ; hō  
vomit  
(INC) |        | *hʰidi  
(> qʰbidi) |
| **ascend, go up**    | hít  
(< híl  
(ROOT)) ; hî tọ  
bring up, vomit | yáre ~ šáre  
(> šare  
(INC)) dance  
| kʰi di dance | wialı  
(> xʰiiali  
(INC)) ; wid  
(> xʰid  
(INC)) jump, throw  
(??) | wili  
| wiari  
| hō wā  
upstairs  
(??) ; hō  
vomit  
(INC) |        | *hʰidi  
(> qʰbidi) |
| **arise**            | hâ  
(> há gû  
(NEG), tʰâ  
(INC)) | šá  
| kʰlaw  
| x*iayi  
| x*iwe  
| hê  
(> hê wē  
(PASS.PF)) wake up |        | *qʰbîC(V) |
| **run away, flee**   | hal-  
in a hurry | yá ~ šá | kʰú’  
| x*iab-  
| x*iin-  
| x*ir-  
| hē sî  
(??) | *qʰbîC(V) |

In the one cognate set for RGT /č/, AT /k'/, the set meaning stand upright, we find a corresponding velar /k/ in the Tiwa languages and an affricate /c/ in Kiowa, indicating a
historical back velar stop */q/. Similarly, in the set throw away, Kiowa and Towa have an
ejective velar /k’/ corresponding to the Tewa /č’, k’/’, which also hints at a back velar. On
the other hand, the blue jay set, if these forms are indeed cognate, suggests a front velar,
while the Tewa vowel suggests labialization, i.e. an origin as */kʷ/. The fly set also
indicates a front velar given the alveolar reflexes in Tiwa and postalveolar fricative in
Towa, as discussed in section 9.4.2.

The rest of the above correspondences get a little more interesting. In many of the
Rio Grande Tewa verb stems, we find variation between a palatal glide /y/ and a
postalveolar /š/. In some dialects these two pronunciations stand in the grammatical stem-
initial ablaut relationship. In other dialects the /š/ form has apparently fully replaced the
glide. In Arizona Tewa it is apparently only the palatalized velar pronunciation which is
found, corresponding to RGT /š/. As cognates to these, we find in Tiwa verbs that show
the /w ~ xʷ/ ablaut relationship (dig, ascend, run away) and one verb that simply begins
with the labiovelar fricative /xʷ/ without ablaut\(^\text{18}\). Significantly, the Tewa cognate also
shows no ablaut. In both Kiowa and Towa, we appear to find a regular /h/, sometimes
with ablaut /tʰ/ in Kiowa (dig, arise). I am not sure if the Tewa dance stem is related to
the ascend stem. If it is, it appears to be an indirect relationship, the /-de, -di/ portion of
the Tewa stem indicating that it descends from a transitivized form, i.e. cognate with the
Kiowa hìˈta bring up, take up. I suggest that the transitivized form of Taos Tiwa wiali
ascend might be wid throw, jump, but I am not at all certain of this.

The correspondence of Kiowa /h/, Tewa /y/, and Tiwa /w/ will be discussed in
section 9.7.1 below. More relevant here, we see RGT /š/ and AT /kʰ/ corresponding to

\(^{18}\) The stem for arise may be somehow historically related to ascend. The former therefore may not show
ablaut because it is already based on the ablaut form of the latter.
labiovelar consonant /xʷ/ in Tiwa, /h/ in Towa, and /tʰ/ in Kiowa, all indicating an origin as */qʷʰ/.
Moreover, in all of the words above, the consonant is followed by a reflex of high front vowel */i/ or */i̯/.
In all cases the high front portion of the diphthongal PKT high vowels appears to have become coarticulated with the velar stop, leading to palatalization. The low portion of these diphthongs was then reinterpreted as the syllabic nucleus, although sometimes being fused with the rounding of the consonant’s labialization in a closed syllable.

The above cognates are a notable find insofar as they better illuminate the behavior of palatalization in the family. However, careful examination reveals another intriguing set of correspondences involving the Tewa postalveolar/palatalized velar consonants, unexpected in the light of previous studies of Kiowa-Tanoan. The proposed cognate sets in Table 9-37 suggest that the Tewa palatalized velar/postalveolar series sometimes corresponds to bilabial stops in the other branches. Some of these examples were already seen in section 9.2.1 above. A fuller list is given in Table 9-38.
Table 9-38: Cognate Sets, Tewa Palatalized Velar-Bilabial Correspondences

<table>
<thead>
<tr>
<th>English</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>louse, flea</td>
<td>šuwa</td>
<td>kʰuwa</td>
<td>pʰiaya</td>
<td>pʰiči</td>
<td>phiače</td>
<td>φi̞</td>
<td>*pʰʷiɡi</td>
<td></td>
</tr>
<tr>
<td>nose</td>
<td>pʰo-ʔ</td>
<td>šu ~ šq</td>
<td>kʰu</td>
<td>pʰiy</td>
<td>pʰiy</td>
<td>pʰiy</td>
<td>φōsē</td>
<td>*pʰʷIq(V)</td>
</tr>
<tr>
<td>grouse</td>
<td>pê̞</td>
<td>šč̣</td>
<td>pʰč̣</td>
<td>pʰč̣</td>
<td>*pʰi̞</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>slip, dark</td>
<td>šuŋ</td>
<td>pʰin</td>
<td>pʰin</td>
<td>phian</td>
<td>*pʰʷad</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>micaceous soil</td>
<td>pʰágya</td>
<td>šá</td>
<td>pʰi̞</td>
<td>*pʰi̞(C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dusty</td>
<td>šú</td>
<td>pʰi̞</td>
<td>*pʰi(l)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bloom</td>
<td>pʰágya</td>
<td>šú</td>
<td>pʰi̞</td>
<td>*pʰi(C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>die</td>
<td>pê̞</td>
<td>ĉu̞; peni</td>
<td>kʰu̞</td>
<td>piw</td>
<td>piw</td>
<td>piaw</td>
<td>pê̞</td>
<td>*pʰi(l)</td>
</tr>
<tr>
<td>dye</td>
<td>čuwe</td>
<td>kʰuwe</td>
<td>piawi</td>
<td>piawi</td>
<td>vê</td>
<td>*pʰi(C(i)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

That these are actually cognates is supported by the matching laryngeal accompaniment to the consonants: aspirated stops (or the RGT fricative /š/) match aspirated stops and unaspirated stops match unaspirated stops. The one exception is the Kiowa word pê̞: turkey, which is questionable as a cognate to the Tewa and Tiwa grouse words. Also, the bilabial consonants in Kiowa, Tiwa, and Towa are all followed by reflexes of PKT high front vowels */i/ and */j/. Such examples require further research regarding the relationship between velar consonants and bilabials.

For the present, we can acknowledge two primary possibilities. One possibility is that these sets originally contained a stem-initial bilabial stop. If this is the case, then it appears that we have here a case of palatal hardening and labial deletion as described in Bateman (2010): a velar stop developed from coarticulatory effects of the transition from the bilabial stop to the palatalization caused by the high front vowel. As this stop developed, the original bilabial stop ceased to be articulated and was eventually elided.
this is the case, then it is merely coincidence that these newly derived velars merged with
the palatalized velars that actually do derive from historical velars in Table 9-37.

The other possibility is that these sets, like the cognate sets of the previous table,
originally contained a stem-initial labiovelar preceding a high front vowel. Coarticulation
of the labialization and the velar obstruent led this segment to be reanalyzed as a bilabial
stop, although it is not entirely apparent under what conditions this happened. In Tewa
the velar articulation was preserved while the labialization either disappeared (grouse,
dusty bloom) or became coarticulated with the following vowel. Meanwhile, the high
front vowel caused palatalization of the velar consonant.

Whichever account might best explain these cognate sets, we should take note
here of the existence of Rio Grande Tewa pení dead body, corpse, which begins with a
bilabial stop (followed by a reflex of PKT high vowel */i/). This seems to correspond to
the bilabial stop we see in the Kiowa, Tiwa, and Towa words for die. (Northern Tiwa piw
can mean die or dead body.) We may thus have a double cognate in Tewa, one form
showing a palatalized velar reflex and another showing a bilabial stop. If these are related
forms, then it could indicate that the relationship between velars and bilabials may have
already begun to be established at the time that Tewa separated from other Kiowa-
Tanoan languages, no matter what the direction of change.

While there remain some open questions regarding the development of these
Tewa postalveolar/palatalized velar obstruent series, we definitely do find salient
patterns. These consonants appear to derive from velars, often labiovelars, when
preceding a high front vowel. They may also derive from bilabial stops—or may have

19 It may have happened in the onset of historically closed syllables. If so, then the stem-final consonants of
some of these stems are not transparent from the modern CV reflexes.
developed into bilabial stops—in some uncertain environment. Insofar as these consonants relate to velars in high vowel contexts, they have evolved along the same lines as did the Kiowa affricates and, to a lesser extent, the alveolar affricates of Tewa and Tiwa.

9.5.4 **Summary of the Development of Affricates**

The sections above indicate that the different affricates we find in three out of four of the branches of Kiowa-Tanoan all descend from some kind of velar stop. The alveolar affricates of Tewa and Tiwa appear to be the primary reflexes of front velar stops. The affricates of Kiowa, on the other hand, descend from back velar stops before high (front) vowels. The same seems to be partly true of the postalveolar affricates of Rio Grande Tewa and their palatalized velar stop correspondences in Arizona Tewa, although these do also show correspondences with bilabial stops.

Table 9-39 briefly summarizes the primary correspondences suggested above.

**Table 9-39: Summary of Affricate Development**

<table>
<thead>
<tr>
<th>*PKT</th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>*k, *kw</td>
<td>t</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>š</td>
<td>s</td>
</tr>
<tr>
<td>*k’, *kw’</td>
<td>t’</td>
<td>c’</td>
<td>c’</td>
<td>c’</td>
<td>c’</td>
<td>č’</td>
<td>t’</td>
</tr>
<tr>
<td>*q, *qw</td>
<td>c</td>
<td>k, č</td>
<td>k, k’</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
</tr>
<tr>
<td>*q’, *qw’</td>
<td>c’</td>
<td>k’, č’</td>
<td>k’, k’</td>
<td>k’</td>
<td>k’</td>
<td>k’</td>
<td>k’</td>
</tr>
<tr>
<td>*kʰ</td>
<td>š</td>
<td>kʰ</td>
<td>tʰ</td>
<td>tʰ</td>
<td>tʰ ~ θ</td>
<td>š</td>
<td></td>
</tr>
<tr>
<td>*qʰ</td>
<td>tʰ</td>
<td>š</td>
<td>kʰ</td>
<td>xʰ</td>
<td>xʰ</td>
<td>xʰ</td>
<td>h</td>
</tr>
<tr>
<td>*p (?)</td>
<td>p</td>
<td>č</td>
<td>k’</td>
<td>p</td>
<td>p</td>
<td>p</td>
<td>p</td>
</tr>
<tr>
<td>*pʰ (?)</td>
<td>pʰ</td>
<td>š</td>
<td>kʰ</td>
<td>pʰ</td>
<td>pʰ</td>
<td>pʰ ~ f</td>
<td>f</td>
</tr>
</tbody>
</table>

In the affrication process illustrated, we find primarily a derivation from plain and ejective velar stops, but not as commonly from aspirated velar stops. In the next section,
we will find even more evidence of fronting, palatalization, and spirantization of stops, including the aspirated velar stops.

9.6 Development of Fricatives

Two of the most curious, but highly frequent, correspondence sets that were first reported in Hale (1962, 1967) were those that involve alveolar fricatives. All of the modern Kiowa-Tanoan languages contain an alveolar fricative /s/ in their inventory. The Tiwa languages also contain an alveolar lateral fricative /ɬ/ as well (as does Towa, although its /ɬ/ is restricted to morphophonologically derived environments, cf. chapter 6.7). However, even though all of the modern languages possess such fricatives, they are not necessarily aligned within the correspondence sets.

The primary "fricative" correspondence sets, along with Hale’s (1967) reconstruction of the consonants involved, appear in Table 9-40.

Table 9-40: Hale's Fricative Correspondence Sets

<table>
<thead>
<tr>
<th>*HALE</th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>*cʰ</td>
<td>tʰ</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>ř</td>
</tr>
<tr>
<td>*s</td>
<td>s</td>
<td>s</td>
<td>ɨ</td>
<td>ɨ</td>
<td>ɨ</td>
<td>t̞</td>
<td></td>
</tr>
</tbody>
</table>

The problems with Hale’s reconstructions of the consonants at the source of these two correspondence sets, particularly the latter set, were pointed out in section 9.1.1 above. On top of the problem of arriving at the modern reflexes from the proposed reconstructed segments, there is the additional issue of what class of segment the reconstructed consonant should be for each set. The most frequent type of reflex for both sets is a coronal fricative of some kind, but we also find a stop reflex in both sets: aspirated alveolar stop /tʰ/ in Kiowa in the first set and voiceless unaspirated palatal stop /t̞/ in
Towa in the second. Especially in the light of the fronting, palatalization, and spirantization processes we’ve seen at work elsewhere in the family, we should probably take these stop reflexes seriously in reevaluating the reconstruction.

There is also reason to think that these two correspondence sets may in fact be related to each other somehow, aside from both having predominately alveolar reflexes. One suggestion of this is seen in the basic correspondence sets themselves: Tewa has the same reflex /s/ for both series. This could represent either a historical merger of two segments in Tewa or a split of a single segment in all of the other languages. In either case the sounds are expected to be close. In addition we saw in chapter 6.7.3 that these two sounds occur in a morphophonological alternation in a small number of verb forms in Towa. An example of this alternation is given in (1).

(1) Towa aspect consonant alternation (Yumitani 1998: 57-58)

<table>
<thead>
<tr>
<th>Towa</th>
<th>English</th>
<th>Towa</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>pî̯ˑt̚î</td>
<td>poke (PF)</td>
<td>pî̯ˑši</td>
<td>(IPF)</td>
</tr>
<tr>
<td>t̚âˑnā̯t̚î</td>
<td>smell (PF)</td>
<td>t̚âˑnā̯ši</td>
<td>(IPF)</td>
</tr>
<tr>
<td>zēˑt̚î</td>
<td>break (PF)</td>
<td>zēˑši</td>
<td>(IPF)</td>
</tr>
</tbody>
</table>

This alternation is analogous to an alternation between /p, t/ in the perfective and /v, l/ respectively in the imperfective. These latter forms suggest some kind of intervocalic lenition.

On top of this morphophonological alternation, we find a small number of semantically and formally related stems in Kiowa, Tiwa, and Towa that differ primarily in the consonants from these two series. Such pairs appear in (2).
(2) Apparent Alternations Between "Fricative" Series

<table>
<thead>
<tr>
<th>Hale’s *cʰ Set</th>
<th>Hale’s *s Set</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kiowa:</strong></td>
<td></td>
</tr>
<tr>
<td>má-tʰɔ̨n</td>
<td>girl (woman-small)</td>
</tr>
<tr>
<td>tʰɔ̨-</td>
<td>sit (INC)</td>
</tr>
<tr>
<td><strong>Towa:</strong></td>
<td></td>
</tr>
<tr>
<td>ší</td>
<td>fall (S/D)</td>
</tr>
<tr>
<td>šé</td>
<td>set</td>
</tr>
<tr>
<td><strong>Taos:</strong></td>
<td></td>
</tr>
<tr>
<td>si</td>
<td>fall (S/D)</td>
</tr>
<tr>
<td>sa</td>
<td>set (P)</td>
</tr>
</tbody>
</table>

The Kiowa morpheme meaning small appears with a stem-initial /tʰ/ in the old compound word má-tʰɔ̨n girl, but other forms in the same row begin with an initial /s/. Under Hale’s analysis these two consonants should reflect completely different ancestral consonants.

Similarly, we find possibly related words for set (plural inanimate items) and sit. In Towa and Tiwa, these stems begin with consonants from the two different correspondence sets in question, thus they do not appear to be related. In Kiowa, on the other hand, the picture is muddier: the nominal-incorporated form tʰɔ́ˑ- has the meaning sit, but does not show the appropriate sound correspondence to the sit verbs in the other KT languages.

Correspondingly, both the verbs for set (plural inanimate) and sit begin with the same consonant /s/ when they are otherwise expected to show reflexes from the different correspondence sets. Finally, the number-suppletive verb stems for fall in Towa and Tiwa appear to differ primarily in beginning with different consonants from the two sets, but are otherwise tantalizingly similar in form.

Reconciling how these correspondence sets fit into the overall phonological system is challenging. They show no immediately apparent complementary distribution with each other or with other consonants in the modern languages to suggest allophony.

However, careful consideration does begin to reveal certain patterns. For starters, the first
correspondence set—with /s/ in both Tewa and Tiwa—is relatively limited. Stem-initial /s/ is not highly frequent in Tiwa (although not rare by any means), which already gives a hint of conspicuousness. Added to this is the fact that Kiowa /tʰ/ and Towa /š/ are both exactly the same reflexes that those languages show for the correspondence series Hale had reconstructed as */tʰ/*. There is thus reason to think that this series, at least, may in fact derive from the same original PKT stop as that correspondence set. Add into this the historical interrelationship of front velars and alveolar consonants that we saw in section 9.5, and we are able to develop an account of this correspondence set.

9.6.1 The Aspirated/"S"-Series

Table 9-41 provides cognate sets which illustrate the first “fricative” correspondence series above.

Table 9-41: Cognate Sets, PKT */tʰ, kʰ, kʷʰ/ (Change to Fricatives)

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>man</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*tʰ, <em>kʰ(</em>)</td>
</tr>
<tr>
<td>tʰal-i</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>ŝ</td>
<td>*tʰ, <em>kʰ(</em>)</td>
</tr>
<tr>
<td>boy (man- DIM)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>drink</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tʰóm</td>
<td>s̃w̃</td>
<td>s̃w̃</td>
<td>s̃w̃</td>
<td>s̃w̃</td>
<td>s̃w̃</td>
<td>s̃w̃</td>
<td>ŝí́</td>
<td>*tʰum</td>
</tr>
<tr>
<td>bluebird</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fall (S/D)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tʰó dé leave behind</td>
<td>s̃l</td>
<td>s̃l</td>
<td>s̃r</td>
<td>s̃r</td>
<td>s̃r</td>
<td>s̃r (INC)</td>
<td>*kʰid(V)</td>
<td></td>
</tr>
<tr>
<td>cry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*tʰi(C)</td>
</tr>
<tr>
<td></td>
<td>s̃í-</td>
<td>s̃í-</td>
<td>s̃í-</td>
<td>se-</td>
<td>se-</td>
<td>se-</td>
<td>ší-</td>
<td></td>
</tr>
</tbody>
</table>

This list of cognate sets is strikingly short. The few other sets that appear to belong to this series show divergences in one or more language and will be addressed further below.

What we do observe here is that the consonant is followed by a high front vowel reflex in
cry, a high back vowel reflex in drink and bluebird, and by a reflex of consonant labialization, as indicated by the Tiwa diphthong /ɨɔ, ɨa/ in man and fall. Considering this distribution, plus the reflexes of Towa and Kiowa, I suggest that this series descends from an aspirated stop, which has tended to spirantize in the high-vowel environment. From this hypothesis, the stop might at first be concluded to be alveolar */tʰ/. However, the labialization suggested in man and fall indicates that a labiovelar consonant may have been involved. Moreover, it was indicated in section 9.3.1 above that an alveolar stop */tʰ/ before a high vowel results in a different correspondence set, lacking spirantization. I therefore reconstruct the stem-initial consonant here as front velar stops */kʰ/ and */kʷʰ/, fronting and spirantizing before a high vowel.

Although this is unintuitive at first blush, this is effectively comparable to Hale’s (1967) reconstruction of this series as an aspirated affricate */cʰ/. In both his and my accounts, this correspondence set ends up descending from the aspirated counterpart to those sets that produce alveolar affricates in Tewa and Tiwa, alveolar stops in Kiowa, and alveolar stops and fricatives in Towa. In all of these sets, we find spirantization and/or a largely alveolar pronunciation. I attribute a front velar origin to these reflexes in order to accommodate the vowel correspondences that we find, wherein labialization appears to be playing a role. Since labialized alveolar stops are highly marked in the world’s languages, particularly in North America, but labialized velar are highly common (Sherzer 1976), the latter are the more attractive option if we want to reconstruct a realistic phonological system within Proto-Kiowa-Tanoan.

Alternatively, assuming that the vowel series involving Tiwa diphthong /ɨɔ, ɨa/ does indeed descend from a vowel following a labialized consonant, one could posit a labialized alveolar stop series. I have avoided doing so here due to the typological markedness of such consonants.
An alternative account for the vowels—which also explains the labialized
segments discussed in chapter 8.7—may lead to a revision of the articulatory properties
of the original consonant, e.g. it may indeed turn out to be alveolar. No matter which
reconstruction ultimately turns out to be optimal, it does appear that the series in question
derives from a stop which tended to spirantize (and centralize) in the context of a high
vowel.

9.6.2 The Unaspirated Palatal/ “Ł” Series

The other correspondence set that involves fricative reflexes, the set that Hale
(1967) reconstructs as */s/,, is immediately interesting and challenging on a couple of
points. First, as already noted, the reflexes in this series vary quite noticeably: an alveolar
fricative /s/ in both Kiowa and Tewa, an alveolar lateral fricative /ɬ/ in Tiwa, but an
unaspirated palatal stop in Towa. Such reflexes make Hale’s reconstruction of them as
*/s/ quite dubious. The second outstanding point is that this correspondence set is highly
frequent. Indeed, I may have found more cognate sets for this series than I have for any
other given consonant. However it is to be reconstructed, the original sound must have
been a common one. Alternatively, it may represent the merger of multiple sounds, a
possibility that will be considered below.

Table 9-42 presents cognate sets illustrating the primary correspondence among
the languages.
Table 9-42: Cognate Sets, PKT */t, kʲ, kʷ/ (Change to Fricatives)

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*kʲ, *kʷ, *t</td>
</tr>
<tr>
<td>mouth</td>
<td>só</td>
<td>só</td>
<td>só</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k/a</td>
</tr>
<tr>
<td>beard, mustache</td>
<td>sóv</td>
<td>sóv</td>
<td>sóv</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k/a-pʰa</td>
</tr>
<tr>
<td>hot</td>
<td>sá</td>
<td>sá</td>
<td>sáp&quot;</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*tid(V)</td>
</tr>
<tr>
<td>secretly</td>
<td>-sem-</td>
<td>sem-</td>
<td>sem-</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*ti̯</td>
</tr>
<tr>
<td>urine, excrement</td>
<td>só'-coy</td>
<td>só-yo</td>
<td>só-yo</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k/a(CV)</td>
</tr>
<tr>
<td></td>
<td>só'-gýa</td>
<td>só-gýa</td>
<td>só-gýa</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*ti̯</td>
</tr>
<tr>
<td>urine, excrement</td>
<td>só'-coy</td>
<td>só-yo</td>
<td>só-yo</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k/a(CV)</td>
</tr>
<tr>
<td></td>
<td>só'-gýa</td>
<td>só-gýa</td>
<td>só-gýa</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*ti̯</td>
</tr>
<tr>
<td>warm</td>
<td>suwá</td>
<td>suwá</td>
<td>suwá</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k^a(b)</td>
</tr>
<tr>
<td>wood</td>
<td>sô</td>
<td>sô</td>
<td>sô</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k'uC</td>
</tr>
<tr>
<td>smell, sniff</td>
<td>sê</td>
<td>sê</td>
<td>sê</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k^aC(nV)</td>
</tr>
<tr>
<td></td>
<td>sê 'gya</td>
<td>sê 'gya</td>
<td>sê 'gya</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k^aC(nV)</td>
</tr>
<tr>
<td>sit down, seat, set down</td>
<td>só'gyá</td>
<td>só'gyá</td>
<td>só'gyá</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k'Uq̯i</td>
</tr>
<tr>
<td></td>
<td>só'gyá</td>
<td>só'gyá</td>
<td>só'gyá</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k'Uq̯i</td>
</tr>
<tr>
<td>onion</td>
<td>sôl</td>
<td>sôl</td>
<td>sôl</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k^'l (?)</td>
</tr>
<tr>
<td></td>
<td>sôl</td>
<td>sôl</td>
<td>sôl</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k^'l (?)</td>
</tr>
<tr>
<td>fall (P), rain</td>
<td>sóp</td>
<td>sóp</td>
<td>sóp</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k'ud(V)</td>
</tr>
<tr>
<td></td>
<td>sóp</td>
<td>sóp</td>
<td>sóp</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k'ud(V)</td>
</tr>
<tr>
<td>arrow</td>
<td>sú</td>
<td>sú</td>
<td>sú</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*k^a</td>
</tr>
<tr>
<td>cactus</td>
<td>sê</td>
<td>sê</td>
<td>sê</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*tj</td>
</tr>
<tr>
<td>intestine</td>
<td>sé-k'ö</td>
<td>sé-k'ö</td>
<td>sé-k'ö</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>v</td>
<td>*t(C)</td>
</tr>
</tbody>
</table>
Surveying the above sets, we find the series before reflexes of low vowels */a/ (e.g. mouth, wood), */u/ (e.g. skunk), high front vowels */i/ (e.g. hot, intestine), */y/ (e.g. spicy, cactus), and high back vowel */u/ (e.g. fall). That is, there is no apparent restriction on its co-occurrence with any of the proposed PKT vowels. We also do see vocalic reflexes of what I posit as labialization from a preceding consonant (e.g. arrow, ear), indicating the presence of some kind of labiovelar, probably a front labiovelar given the alveolar reflexes we see. The Towa reflex */tv/ suggests that the stop was likely unaspirated.

However, given the development of unaspirated front velar stops into affricates in Tewa and Tiwa in certain environments in section 9.5.1, proposing a derivation from */kʲ/ would not account for this series, at least not all cognate sets within this series. On the other hand, we find primarily alveolar reflexes, presenting a possibility that this series represents an alveolar consonant of some kind.

I tentatively reconstruct this series as the merger of at least three Proto-Kiowa-Tanoan consonants: the front velar stops */kʲ/ and */kʷ/ and the alveolar stop */t/. More

---

21 The Tewa languages appear to have */y/ as an intervocalic allophone of */s/ in older morphological compounds, as described in chapter 10.1. Thus, this set for ear does show the regular correspondence in the series under discussion even though this is obscured by this intervocalic sound change.
specifically, this set results from */t/ and */kʷ/ preceding a high front vowel */i/ and from */kʲ/ and */kʷ/ preceding a low vowel. This may not be as much of a stretch as it seems at first blush. An alveolar stop followed by a high vowel will be pulled back and made more palatal while the front velar series of Proto-Kiowa-Tanoan has already been proposed to be palatalized. Thus it is not unfeasible that the alveolar and front velar series might actually be neutralized in certain palatalized contexts. Indeed, high front vowels following alveolar consonants are not particularly common in any of the modern languages and the sequence is completely proscribed in Kiowa. Meanwhile, we saw in section 9.5.1 that the primary attested reflexes of the posited front velar stops, the series involving affricates in Tewa and Tiwa, are not found very often preceding low vowels. Such gaps in the phonotactic structures of the modern languages must ultimately be accounted for in order to understand the historical phonology of the family. Proposing this merger of alveolar and front velar stops could account for the phonotactic gaps we see in the modern languages as well as the wide distribution of the correspondence series above.

Further study of this proposal is needed in order to see how well it bears out and/or how it might be revised to better account for the facts of the modern languages. One feature that still needs to be accounted for is the relationship between the two "fricative-creating" series indicated by the alternations in (1) and (2) above. So far, it appears that one set derives from an aspirated stops and the other from unaspirated stops. However, there is no precedent for a regular morphophonological aspirated-unaspirated alternation.
On top of those alternations, we also find some possible cognate sets that appear to mix these two series as well as the Tewa/Tiwa affricate series. Table 9-43 presents cognates that, if valid, show such "mixed" correspondences.

Table 9-43: Cognate Sets, Mixed "Fricative" Correspondences

<table>
<thead>
<tr>
<th></th>
<th>Kt</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>porcupine</td>
<td>sóŋ</td>
<td>son</td>
<td>sɔm</td>
<td>sam</td>
<td>t̪e̞</td>
<td>*k̪(b)ub</td>
<td></td>
<td></td>
</tr>
<tr>
<td>set (p)</td>
<td>sɔ́</td>
<td>sa̞</td>
<td>sa</td>
<td>sia</td>
<td>se</td>
<td>šæ</td>
<td>*t̪(C)</td>
<td></td>
</tr>
<tr>
<td>horn</td>
<td>pi̠-t̪el hip (?)</td>
<td>seq horn ; pů-seq hip (butt-horn) (?)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>tvô (&gt; t̪vôteš (i))</td>
<td>*kʷ(?)id</td>
<td></td>
</tr>
<tr>
<td>tear, crack</td>
<td>sá̅</td>
<td>sé</td>
<td>liapi</td>
<td>liapi</td>
<td>še</td>
<td>še w</td>
<td>*t(?)ipi</td>
<td></td>
</tr>
<tr>
<td>stick</td>
<td>tʰe̞ be-</td>
<td>cive</td>
<td>lípi stick to ; lib be stuck</td>
<td>lípi stick to ; lip be stuck</td>
<td>-</td>
<td>*k̪(?)Ip(i)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flint</td>
<td>sḛ̇-se arrowhead</td>
<td>ci</td>
<td>ci</td>
<td>cia</td>
<td>ci</td>
<td>šia</td>
<td>tvĩ arrowhead</td>
<td>*k̪i(C)</td>
</tr>
</tbody>
</table>

The first two sets, *porcupine* and *set*, do appear to consist of valid cognates, irregularities notwithstanding, and the other four sets looks promising. In *porcupine* we would expect either the Towa cognate to begin with /š/ or the Tiwa cognates to begin with /ɬ/. In *set* we
should find /tʰ/ in Kiowa—although we do find a form tʰɔ́ˑ - *sit down (INC)* which may be related\(^\text{22}\)—or we should find /l/ in Tiwa and /ʔ/ in Towa.

The Tewa and Towa words for *horn* appear to fit regular sound correspondences. It is tempting to correlate the Kiowa word for *hip* given above with the Tewa word of the same meaning, púseŋ, an apparent compound of pú - *buttocks, root, base* and seŋ *horn*. The expected Kiowa form should have /s/ instead of /tʰ/ by the regular correspondences, although we can recall the old compound má-tʰɔ̨ n - *girl (woman-small)* compared to the free lexical item syɔ̨́ n - *small (S)* where the aspirated stop /tʰ/ appears intervocally.

In the *tear* set, we should expect a /tʰ/ reflex in Towa rather than the /š/ that we see here. This set is confounded, however, by the number of destruction verbs in KT languages among which it is difficult to align cognate sets. For example, there is a Kiowa verb tʰáˑ - *sever, cut (P)* which could plausibly relate to either the Towa form or to the set as a whole (in which case, Tiwa would have the "wrong" stem-initial consonant).

Finally in *stick, be stuck* the vowels and intervocalic bilabial suggests a relationship among these forms, yet we see Kiowa /tʰ/ with Tiwa /l/, which is not the usual correspondence, plus Tewa /c/ is brought into the mix. While the latter in particular could provide support for my proposal that both Tewa /c/ and Tiwa /l/ can descend from PKT */kʲ/*, it is not at all a regular correspondence set. The same is true of the *flint* set, where both Tewa and Tiwa show an affricate reflex while Kiowa and Towa have reflexes from one of the fricative series.

The issue of the affricates in the last sets aside, the main problem in these sets is determining how an aspirated stop and a non-aspirated stop could correspond, which is

\(^{22}\) Also see the *sit down* set in Table 9-42 above. Despite the different consonant correspondences, it looks like *sit down* and *set (P)* may be historically related.
what such mixing would indicate. These sets could simply represent the sporadic examples where we seem to get a change in laryngeal state (see section 9.1.3). Or, they could indicate a more complex source for one or both of the "fricative" series.

The possible cognate sets in Table 9-44 could also be joined to this discussion.

Table 9-44: Cognate Sets, Mixed "Fricative"-Velar Correspondences

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>Ta</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>descend</td>
<td>sép</td>
<td>xʷʔŋ</td>
<td>hʷʔŋ</td>
<td>liw</td>
<td>liw</td>
<td>liaw</td>
<td>tó</td>
<td>*kʷiKʷ</td>
</tr>
<tr>
<td>lower</td>
<td>sếŋ</td>
<td>xʷʔye</td>
<td>hʷʔye</td>
<td>liyi</td>
<td>liaw</td>
<td>liwi</td>
<td>šd̪</td>
<td>*kʷiKʷ̪</td>
</tr>
<tr>
<td>woman</td>
<td>yōk̪̣̣̣̣</td>
<td>kʷi-</td>
<td>kʷiyo</td>
<td>liw</td>
<td>liaw</td>
<td>xʷiam-</td>
<td>tó</td>
<td>*kʷi(m)</td>
</tr>
<tr>
<td>old</td>
<td>ke yí</td>
<td>luli</td>
<td>loli</td>
<td>luli</td>
<td>tị́</td>
<td>*k/ụk̪</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here we see the expected stem-initial consonant correspondences among Kiowa, Tiwa, and Towa. However, there is the possibility of a Tewa velar corresponding to the unaspirated fricative series. The suggested Tewa descend/lower cognates are questionable insofar as the onset consonant is reconstructed as */hʷ/ given the correspondence between the two Tewa languages, but considering ablaut (wherein */hʷ~qʷʰ/ they do point again to a velar origin for the series. It is unclear why the velars are preserved in these Tewa forms or even whether these are valid cognates, but I point them out as a potential domain for further study.

---

23 This Kiowa stem means both descend and fall, rain and looks like it can be associated either with this set or with the fall (P), rain set: Ta lul, Pi loli, ST lur, To tí. It is quite possible that two distinct stems merged in Kiowa. It is also possible that there was only one stem but old derivational morphology led the stems to split in Tiwa and Towa.
The reconstructions given with the above sets suggest a possible way of relating the members of the cognate sets, but it is not clear yet why we end up with these divergences. Indeed, these "fricative" correspondence sets require much more attention than they have previously been given. Even if my proposals above turn out to be wrong, the reader should recognize the problems with Hale’s (1967) reconstruction and the complexities involved with these sets.

9.6.3 Summary of the Development of Fricatives

The two correspondence series that include fricatives across most branches of the family appear to have had a complicated development. In both cases, though, they are analyzed above as having descended from stops, the change apparently having been stimulated by a high front environment, i.e. either when followed by a high front vowel or from palatalization on the stop itself. While the series do show interaction and overlap, the difference between them in origin appears to have been aspiration. Both series are also proposed to represent a merger of alveolar and front velar stops, which could help to explain many of the more complicated correspondences mentioned above.

The correspondence sets are summarized in Table 9-45. Note that an implication of this proposed reconstruction (in combination with the rest of the phonological analysis of this chapter) is that there were no fricatives in Proto-Kiowa-Tanoan other than the glottal fricative(s) to be presented in the next section.
Table 9-45: Summary of "Fricative" Correspondences

<table>
<thead>
<tr>
<th>*PKT</th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>*tʰ, *kʰ, *kʷʰ</td>
<td>tʰ</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>ŝ</td>
</tr>
<tr>
<td>*t, *kʲ, *kʷ</td>
<td>s</td>
<td>s</td>
<td>s</td>
<td>t̊</td>
<td>t̊</td>
<td>t̊</td>
<td>t̊</td>
</tr>
</tbody>
</table>

These series represent the last of the developments of stem-initial velar and alveolar consonants to be addressed in this dissertation. Having proposed such an intricate evolution of stops, this is perhaps the area of Kiowa-Tanoan phonology most in need of further analysis and research.

Having addressed the complicated development of stem-initial oral obstruents and nasal stops, we will turn in the next section to the relatively straightforward glottal consonants. However, even here it is necessary to propose a new segment in order to accommodate the empirical data of the modern languages.

### 9.7 Glottal Consonants

The basic glottal consonants of Kiowa-Tanoan, */ʔ/ and */h/, have simple correspondences and have largely remained unaltered in the modern languages. The only exception is the Towa reflex of */h/ which has lenited to a voiced glottal fricative /ɦ/.

Phonetically, the glottal stop varies in its salience in the different languages, tending to be fairly strongly pronounced in Tewa and Towa and fairly weakly pronounced in Tiwa and Kiowa.

The basic glottal correspondence sets, as listed in Hale (1967), appear in Table 9-46.
Table 9-46: Hale's Glottal Correspondence Sets

<table>
<thead>
<tr>
<th>*HALE</th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>*h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>h</td>
<td>ŋ</td>
<td>*h</td>
</tr>
</tbody>
</table>

These sets are fairly uncontroversial insofar as I have discovered to date. Examples of correspondences among these two glottal consonants appear in Table 9-47 and Table 9-48 respectively, beginning with the glottal stop.

Table 9-47: Cognate Sets, PKT *//?

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>do</td>
<td>ʔ́ m</td>
<td>ʔqη</td>
<td>ʔqη</td>
<td>ʔm</td>
<td>ʔm</td>
<td>ʔm</td>
<td>ʔo</td>
<td>*ʔ(w)qb</td>
</tr>
<tr>
<td>jaw, chin</td>
<td>ʔ́l</td>
<td>ʔqη</td>
<td>ʔd</td>
<td>ʔad</td>
<td>ʔan</td>
<td>ʔad</td>
<td>ʔt-ε-š</td>
<td>*ʔat</td>
</tr>
<tr>
<td>smoke</td>
<td>ʔ́-gya</td>
<td>ʔ́-yɛ</td>
<td>ʔ́-yɛ</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>*ʔ(C)</td>
</tr>
<tr>
<td>sit (S/D)</td>
<td>ʔ́-gya</td>
<td>ʔ́əŋ</td>
<td>ʔ́</td>
<td>ʔ́-mə</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>*ʔin</td>
</tr>
<tr>
<td>come</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>*ʔ (&gt; qí)</td>
</tr>
<tr>
<td>swim, bathe</td>
<td>ʔ́-</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>*ʔal (&gt; qa)</td>
</tr>
<tr>
<td>run</td>
<td>ʔ́-nósó</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>*ʔdV</td>
</tr>
<tr>
<td>foot</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>*ʔd(V)</td>
</tr>
<tr>
<td>toe</td>
<td>ʔ́nʰal</td>
<td>ʔ́ηkhú</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>*ʔd-qʰIl</td>
</tr>
<tr>
<td>grow</td>
<td>ʔ́-</td>
<td>ʔ́-grow (of plants)</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>*ʔIC</td>
</tr>
<tr>
<td>chokecherry</td>
<td>ʔ́vé</td>
<td>ʔ́b</td>
<td>ʔ́m</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>*ʔp(V)</td>
</tr>
<tr>
<td>pour</td>
<td>ʔ́p</td>
<td>ʔ́ewe</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>*ʔ(C)</td>
</tr>
<tr>
<td>bone, awl</td>
<td>ʔ́ŋ</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>ʔ́</td>
<td>*ʔ(w)ŋun</td>
</tr>
</tbody>
</table>
We find a fair number of glottal-initial stems within the family, although note that a few stems above (e.g. do, bone) possibly had an initial labiovelar glide based on vowel correspondences (cf. chapter 8.4.1). Notwithstanding the /ʰ ~ k/ ablaut found in all branches which may partly obscure cognates (cf. come, swim), glottal stop only ever corresponds to glottal stop across the languages. See chapter 10.1.1, however, for one class of apparent exceptions.

Table 9-48 illustrates cognate sets showing the glottal fricative correspondences.

Table 9-48: Cognate Sets, PKT */h/

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>breath</td>
<td>h̓</td>
<td>hû</td>
<td>hû la h̓ ; hylә breathe h̓ lia h̓ ; hәre breathe hīl-hise *h (dV)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>get (P)</td>
<td>h̓ ˈ gya h̓ ˈ gy (INC) h̓ ˈ ge h̓ ˈ y (xay (INC)) Grass, take hake hay (xay (INC)) *h (q) (dV) *q (q)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>kill</td>
<td>h̓ ol (&lt; h̓ ˈ (ROOT)) h̓ ˈ (khe (INC)) h̓ u (xu (INC)) h̓ o h̓ u (khu (INC)) h̓ i (h̓ i (INC)) *h (q) (dV) *q (q)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>juniper, cedar</td>
<td>h̓ ˈ</td>
<td>h̓ ˈ</td>
<td>h̓ ˈ</td>
<td>h̓ ˈ</td>
<td>h̓ ˈ</td>
<td>h̓ i</td>
<td>*h̓ ˈ</td>
<td></td>
</tr>
<tr>
<td>chase, follow</td>
<td>h̓ æŋ war h̓ um h̓ um h̓ um h̓ ˈ - *hub</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As with the glottal stop, this set requires little comment. There is ablaut between */h/ and */qʰ/ which may complicate cognate identification, but this is the only major issue with this series.
However, we do find instances of stem-initial /h/ in the languages which may descend from consonants distinct from */h/. In those cases the correspondences may be quite different. These will be addressed in the next sections.

9.7.1 Labialized Glottal Fricative */hʷ/

Several occurrences of modern stem-initial /h/ that we find appear to descend from a labialized glottal fricative */hʷ/, another segment that is being introduced to the consonant inventory of PKT here for the first time. The evidence for it is limited in the modern languages so far as I have found. Also, there are two different correspondence sets that suggest a segment */hʷ/, but they could also indicate two distinct PKT consonants.

In proposing such a labialized glottal fricative, it should be recalled that in chapter 6.6 it was mentioned that Southern Tiwa, at least, there is a labialized fricative often written variably as “hw” or “xw”, which corresponds to both /kʷ/ and /xʷ/ in Northern Tiwa. However, we will see below that there is the suggestion that it could also represent a reflex of an older consonant */hʷ/, which must have then merged with /xʷ/ (< */qʷʰ/) in Proto-Tiwa. Alternatively, as mentioned in that earlier chapter, it is possible that there is still a contrast between /hʷ/ and /xʷ/ in modern Tiwa which has simply never been analyzed adequately. The same could be true of Tewa, the Rio Grande Tewa segment /xʷ/ (~ kʷʰ?) being pronounced with very light frication, on top of comparative evidence from Arizona Tewa. It will require careful phonetic and phonological study of these modern languages to ascertain whether any contrast is actually present or if historical segments have merged.
The first correspondence set that suggests a PKT segment */hʷ/ appears in Table 9-49.

Table 9-49: Cognate Sets, PKT */hʷ/

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>take</td>
<td>hô· (&lt; hí (ROOT))</td>
<td>hoʔ (&gt; húyq? (IPF), húwí (POT))</td>
<td>huɔ́ˑ (&lt; hí (ROOT))</td>
<td>huɔ (&gt; huy (NEG))</td>
<td>hua~ h<em>ey (&gt; h</em>eače (PASS)))</td>
<td>hû</td>
<td>h*ig(V)</td>
<td></td>
</tr>
<tr>
<td>from</td>
<td>hô-</td>
<td>he·</td>
<td>he·</td>
<td>hîl</td>
<td>hil</td>
<td>hîr</td>
<td>hô·</td>
<td><em>h</em>i</td>
</tr>
<tr>
<td>(direction)²⁴</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sick, hurt</td>
<td>hôl</td>
<td>he·</td>
<td>he·</td>
<td>hîl</td>
<td>hil</td>
<td>hîr</td>
<td>hô·</td>
<td><em>h</em>ad(V)</td>
</tr>
<tr>
<td>egg</td>
<td>hô-</td>
<td>c’o</td>
<td>wá·</td>
<td>h*á</td>
<td>p’á-x*ia</td>
<td>p’a-x*ia</td>
<td>p’a-h*ea</td>
<td>wâ-delî (egg-fowl)</td>
</tr>
<tr>
<td></td>
<td>hô-</td>
<td>c’o</td>
<td>silver button (??)²⁵</td>
<td>wá·</td>
<td>h*á</td>
<td>p’á-x*ia</td>
<td>p’a-h*ea</td>
<td>wâ-delî (egg-fowl)</td>
</tr>
<tr>
<td>itch</td>
<td>x*owa ~ wowa ~ wâ·</td>
<td></td>
<td>h*eče</td>
<td>h*â mi (???)</td>
<td></td>
<td></td>
<td></td>
<td><em>h</em>li(CV)</td>
</tr>
<tr>
<td>eat (ITR)</td>
<td>hû</td>
<td>yäŋ</td>
<td>h*î yäŋ</td>
<td></td>
<td>hí-</td>
<td></td>
<td></td>
<td><em>h</em>ik-</td>
</tr>
<tr>
<td>drag</td>
<td>k*bûy-</td>
<td>x*a~ wi-</td>
<td>wa-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><em>h</em>iC (&gt; <em>q</em>î(C) (?))</td>
</tr>
</tbody>
</table>

²⁴ This form meaning from is only found bound to cardinal direction terms.
²⁵ This refers to a decorative silver button that is worn on top of the head. While its form suggests it is a compound, any synchronic constituency is not apparent from the data I have available to me. The second part c’o appears to be derived from c’ó: stone, which is likely in reference to the metal (vowel shortening and tone lowering being a regular result in compounds). The first part of the form, hô-, is the form that is really in question. If it does not have a meaning in modern Kiowa, then I submit that it could be related to the Tanoan egg morpheme, perhaps in reference to the shape of the button or some salient part of it. Unfortunately I have yet to find a picture of what this button looks like.
²⁶ Rio Grande Tewa speakers show variation in whether the vowel of this stem is nasalized or not. For some speakers, at least, there is alternation in nasalization even among paradigmatic forms, as represented here. Such alternations are not a regular feature of the grammar.
The cognate set for *take* shows an initial consonant reflex of */h/ (/ɦ/ in Towa) in all but Southern Tiwa, where we find a form with */hʷ/. The same appears to be true in *from*, although I have not yet identified a cognate outside of Tiwa. These two examples partly depend on the interpretation and reconstruction of the vowel correspondence set we find here, which involves a diphthong in Tiwa (see chapter 8.7). The same is true of *sick*, the argument for */hʷ/ depending entirely on the reconstruction of the vowel, which is claimed in chapter 8.7 to descend from */Cʷi/ and */Cʷɑ/.

The sets for *egg* and *itch* suggest a distinct, but related, correspondence indicating a segment */hʷ/*. In *egg* we find a labialized velar or glottal fricative */xʷ, hʷ/ in Tiwa, a labialized glottal fricative */hʷ/ in Arizona Tewa, but a labiovelar glide */w/ in Rio Grande Tewa and Towa. If the Kiowa form is cognate, then the correspondence is a plain glottal fricative */h/ followed by a rounded vowel */o/*. In *itch* we again find a labialized fricative */hʷ ~ xʷ?/ in (Southern) Tiwa while in Rio Grande Tewa there is speaker and dialect variation between pronouncing it with a stem-initial fricative */xʷ/ or with */w/. (There are a small number of stems in Rio Grande Tewa that vary across dialects as beginning with */w/ or */xʷ/). If the Towa form is cognate, then we find here a plain fricative */ɦ/, which usually corresponds to */h/ in the other languages. That is, where in the previous set of words we consistently found a stem-initial glottal fricative of some kind, in these two words we find a mix of labiovelar glide and glottal (or velar) fricative reflexes.

Finally in *eat* there is a correspondence between Rio Grande Tewa */h/ and Arizona Tewa */hʷ/. Towa, meanwhile, shows a stem-initial */h/, which normally corresponds to */kʰ/ (or appropriate reflexes) in the other languages. In *drag*, on the other hand, Rio Grande Tewa shows the same kind of alternation between a fricative */xʷ/ and
glide /w/ as in *itch* corresponding to a voiced glide in Tiwa and Towa. Kiowa, however, presents us with a stem-initial /kʰ/ followed by a rounded vowel /u/, a regular correspondence of /kʰʷ/ in the other languages. Given that these two stems *eat* and *drag* are bound—they do not occur as active verbs by themselves without compounding it to another stem—the Towa and Kiowa reflexes suggesting an aspirated (labio)velar stop could be explained by appealing to stem-initial consonant ablaut, where /h ~ h/ and /h ~ kʰ/ are regularly attested alternations in Towa and Kiowa respectively.

All of these differing reflexes do not provide the greatest support for reconstructing a single segment. However, the alternations do have to be explained somehow and these sets present us with a mix of glottal fricatives and labiovelar glides. Positing a labialized glottal fricative */hʷ/ would help to explain these correspondences. The varying reflexes can then be explained by interaction with the following vowel and the effects of stem-final consonants on syllable structure, cf. chapter 10.

There is another set of proposed cognates that may also suggest a labialized fricative */hʷ/, although the reflexes are rather distinctive. These are given in Table 9-50.
Table 9-50: Cognate Sets, PKT *\(h^w/\), RGT /y \sim ŝ/  

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>dig</td>
<td>hìn (&gt; tʰ'ôn-\ (INC))</td>
<td>yæ' (&gt; šæ')</td>
<td>kʰêlê</td>
<td>wêl (&gt;  x^{*}el\ (INC))</td>
<td>wêl (&gt;  x^{*}el\ (INC))</td>
<td>wîr</td>
<td>hólê</td>
<td>*hʷid(V) (&gt; *qʰid(V))</td>
</tr>
<tr>
<td>ascend,</td>
<td>hît  (&lt; hîl\ (ROOT)) ; hê tô bring up, vomit</td>
<td>yâre (&gt; šâre\ (INC)) dance ; cf. šä ascend (ARCHAIC) (?)</td>
<td>kʰê di dance</td>
<td>wîlî (&gt; x^{<em>}ialî (INC)) ; wid (&gt; x^{</em>}id (INC)) jump, throw (?)</td>
<td>wîlî</td>
<td>wîari</td>
<td>hó wā upstairs (?) ; hô' vomit (INC)</td>
<td>hîd(V) (&gt; *qʰid(V)) ; hîd(i) (&gt; *qʰid(i))</td>
</tr>
<tr>
<td>go up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>arise</td>
<td>hâ' (&gt; há gû\ (NEG), tʰâ\ (INC))</td>
<td>šâ'</td>
<td>kʰaw</td>
<td>xʰiay</td>
<td>xʰiwe</td>
<td>hé' (&gt; hé wē (PASS.PF)) wake up</td>
<td>hî- (&gt; *qʰig(V))</td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>run</td>
<td>hal- in a hurry</td>
<td>yâ' (&gt; šâ\ (INC))</td>
<td>kʰâ'</td>
<td>xʰiab-</td>
<td>xʰi-</td>
<td>xʰi-</td>
<td>hê-šî (??)</td>
<td>hî- (&gt; *qʰiC-)</td>
</tr>
<tr>
<td>away,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flee</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These cognates were discussed in section 9.5.3 with regard to the Tewa postalveolar/palatalized velar reflexes. However, the dig and ascend sets involve stem-initial consonant ablaut while flee involves a bound stem in Kiowa and the Tiwa languages (but Rio Grande Tewa has a free stem which shows an ablaut alternation). The one stem in which we do not find ablaut in the Tanoan languages, arise, the initial consonant is the same as in the ablaut forms of the other sets, namely Tewa /š, kʰ/ and Tiwa /xʷ/. However, the final /i, e/ seen in Tiwa suggests that the form may bear some derivational morphology, which could be attached to an ablauted stem. Moreover, in the
proposed Kiowa cognate, we do find ablaut, suggesting this stem is comparable to the others.

The ablaut issue aside for the moment, the correspondence that we see in the non- ablauted stems shows a glottal fricative /h/ in Kiowa, a labiovelar glide /w/ in Tiwa, but a palatal glide /y/ in Rio Grande Tewa. The Kiowa and Tiwa reflexes might be attributed to a historical */hʷ/. The Tewa glide appears to be more associated with the following high vowel: the coarticulation of the high vowel and labialization ultimately leading to a palatal glide /y/. In Towa we find /h/, but this may more accurately reflect the ablaut stem form. The same is true of the /kʰ/ in Arizona Tewa and the /š/ in those dialects of Rio Grande Tewa which do not have an ablaut alternation in these stems. In these languages it appears that the ablaut consonant has spread throughout the paradigm.

The ablaut alternation itself might also provide support for a stem-initial */hʷ/. The ablaut consonant reflexes that we find, Kt /tʰ/, RGT /š/, AT /kʰ/, Tt /xʷ/, To /h/, suggest a PKT source consonant of */qʷʰ/, as discussed in section 9.5.3. Consider that we find a well-attested ablaut alternation /h ~ kʰ/27 in the modern Kiowa-Tanoan languages which reflects a PKT alternation of */h ~ qʰ/. We thus appear to find the same alternation going on here but with labialized counterparts. That is, the set in Table 9-50 suggests an ablaut pair */hʷ ~ qʷʰ/ that mirrors the */h ~ qʰ/ alternation. Given that labialized consonants tend to show the same kinds of alternations as their non-labialized counterparts elsewhere in the family, this set ends up being parsimonious with the other ablaut alternations in the family.

27 This is actually realized as /h ~ tʰ/ or /h ~ kʰ/ in Kiowa, /h ~ kʰ/ or /h ~ x/ in Rio Grande Tewa and Southern Tiwa, /h ~ x/ in the Northern Tiwa languages, and as /h ~ h/ in Towa.
There is only a limited number of cognate sets which suggest an original labialized glottal */hʷ/ in Proto-Kiowa-Tanoan, so this proposal does certainly require further research\textsuperscript{28}. The various reflexes seen above just within a single language require a more secure explanation, although the syllable structure as defined by the following vowel and stem-final consonant appear to play a major role. The above proposal does at least provide an account which would explain the cross-linguistic variation in correspondences. The next section will touch on another newly proposed segment, but one that is far less supported so far.

\textbf{9.7.2 Palatalized Glottal Fricative */hʲ/}

There is the barest of suggestions that there may have been a palatalized glottal fricative */hʲ/ in Proto-Kiowa-Tanoan. This follows along with the evidence for a plain palatal glide, mentioned in the next section. Support comes from only a single possible cognate set found so far, so alternative explanations may be developed.

Table 9-51 lays out the one cognate set suggesting */hʲ/.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline
\textit{willow, nest} & \textit{K1} & \textit{RGT} & \textit{AT} & \textit{TA} & \textit{Pt} & \textit{ST} & \textit{To} & \textit{*PKT} \\
\hline
\textit{zê ba arrow (??)} & \textit{yúŋ willow, nest} & \textit{hʲŋŋ nest} & \textit{ʔia-la} & \textit{ʔi-la} & \textit{ʔia-la} & \textit{zê willow} & \*hʲɑ(C) (??) & \*ɡii(b) \\
\textit{aypʼí willow (??)} & \textit{yé~ ſiŋŋ nest} & & & & & & & \\
\hline
\end{tabular}
\caption{Cognate Set, PKT */hʲ/ ?}
\end{table}

\textsuperscript{28} Ian Maddieson (p.c.) suggests on typological grounds that the segments I reconstruct as laryngeal */h/ and */hʷ/ may be better reconstructed as velar fricatives, so */x/ and */xʷ/ respectively. This is a proposal that should be seriously followed up. Most notably, it would add fricatives to the PKT consonant inventory, a category of sounds that is conspicuously absent in the present reconstruction.
Indication that this set may descend from a segment */h/ comes from the Arizona Tewa form bʰyąŋ. Given how Arizona Tewa appears to have conserved the form of */hw/ relatively frequently, this word seems to be conserving some distinctive sound not apparent from the other languages. This is one of only a couple words with /h/ in the language that I have found, however.

One important problem with the above is that the cognate status of the set is not certain. The semantic connection between willow and arrow (as in Kiowa) is supported by the fact that willow wood was often used in the creation of arrows. This, plus regular sound correspondences seen in section 9.4.3, indicates that Kiowa zê·ba, Tewa yąŋ, and Towa zê are likely related. The relationship within Tewa between willow and nest is not clear. In at least one dialect, the form yąŋ bears both meanings and the similarity of the Arizona Tewa word bʰyąŋ nest indicates the two uses might extend back to Proto-Tewa. The source of the Rio Grande Tewa word yą́ ~ nāŋ nest in this context is not certain, the vowel not corresponding to what we find in the other languages.

It is questionable how the Tiwa form ′ia, ′i might fit in here. It is tempting to find a correspondence with the first part of Kiowa ʔay-p’i willow, but the initial high vowel component of the diphthong could also fit with the initial /y/ of Rio Grande Tewa. Language-internally, it might also be tempting to associate the root ′ia, ′i willow with the segmentally homophonous29 morpheme ′i, ʔi kernel, corn, grain, especially given the salient buds of willow trees, but this is unclear. In any case, whether this Tiwa morpheme is cognate with what we see in the other languages here or not, they give no support for a stem-initial consonant (other than glottal stop).

29 The impoverished indication of tone in Tiwa makes it unclear if the morphemes are completely homophonous or might differ in tone.
I mention this cognate set as an issue for future investigation. While I might tentatively reconstruct */hʲ/ to the consonant inventory of Proto-Kiowa-Tanoan, I put it in parentheses in Table 9-3 above due to its highly questionable status. I would not be surprised if some other explanation could be established for the */hʸ/ seen in the Arizona Tewa form that suggests such a segment.

9.8 Glides

All Kiowa-Tanoan languages except Kiowa contain labiovelar stops, which are also reconstructed for the proto-language. This dissertation further proposes that there was an additional contrast between back velar and front palatalized velar stops. From a phonological typological perspective, both of these facts imply that Proto-Kiowa-Tanoan may have had a labiovelar glide */w/ and palatal glide */y/. The evidence for such glides is so far patchy at best, however. As section 9.4.3 discussed, many of the glides we find in the modern languages, at least in Tewa and Tiwa, actually reflect original voiced velars */gʲ/ and */gʷ/. These segments are realized as obstruents in Kiowa and Towa. We do find glides in both of these latter languages, which still require explanation. It therefore seems like a good starting point for searching for glides.

Unfortunately, the inventory of lexical items in Kiowa and Towa that begin with glides is relatively small and it is difficult to identify probable cognates. Table 9-52 presents a small number of cognate sets that may reflect stem-initial glides.
Table 9-52: Cognate Sets, PKT */w/

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>two</td>
<td>yíˑ</td>
<td>wiye two ;</td>
<td>wiye</td>
<td>wí</td>
<td>wi-sí</td>
<td>wî</td>
<td>*wi-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>wé-twice</td>
<td></td>
<td>we-se</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>four</td>
<td>yí-kyá four ;</td>
<td>yô-nų</td>
<td>sô-nų</td>
<td>wian</td>
<td>wian</td>
<td>wîˑ</td>
<td>*wid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>yátkyá-four (COMP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>wé-ge</td>
<td></td>
<td></td>
<td>wî·</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>gather, collect</td>
<td></td>
<td></td>
<td>(PASS.PF))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(??)</td>
<td></td>
<td></td>
<td>catch, tie</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The cognate set for *two* is the one set that Hale (1967) was able to put forth in support of his own reconstruction of */w*. Although Watkins (1978b) finds it to be a dubious set—at least questioning the inclusion of Kiowa *yíˑ* *two*—the interactions of vowels and labialization that have been described here indicate that it should perhaps not be ruled out. We find a similar correspondence set for *four*, only Tewa diverging. However, the Rio Grande Tewa form *yô-nų* looks like it could have been derived in the same way as the */y/ initial Kiowa forms: the high portion of the PKT vowel */i/ merging with the glide while the low portion of the vowel became reanalyzed as the syllable nucleus preceding the stem-final consonant */d/. The *catch* set also presents a correspondence much like the one in *two*, although it is weakened by the lack of a potential Tiwa cognate and the questionability of the proposed Tewa cognate.

While extremely limited, these sets do at least hint at a possible PKT segment */w/*. This seems the most likely candidate to be reconstructed in order to explain the labiovelar glide reflexes in the Tanoan languages. The high vowel reflexes we see in the
above sets would also provide a motivation for the apparent palatal glide correspondence in Kiowa. Unlike the glide reflexes of section 9.4.3, there is no evidence here of an obstruent source.

There is another set of possible cognates that may reflect an original stem-initial labiovelar glide */w/, presented in Table 9-53. This set is based on the development of vowels discussed in chapter 0.

Table 9-53: Cognate Sets, PKT */w/ (Vowel Coarticulation)

<table>
<thead>
<tr>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>P1</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>blood</td>
<td>ˀǫ́m</td>
<td>ˀûŋ</td>
<td>ˀûŋ</td>
<td>ˀŋ</td>
<td>ˀŋ ~ ˀɨ̨</td>
<td>ˀɨ̨</td>
<td>ˀûŋ</td>
</tr>
<tr>
<td>2 indep pronoun</td>
<td>ˀą́m</td>
<td>ˀû́</td>
<td>ˀû́</td>
<td>ˀû́</td>
<td>ˀû́</td>
<td>ˀû́</td>
<td>ˀû́</td>
</tr>
<tr>
<td>vomiting</td>
<td>ˀę́ŋ ~ ˀę́nû</td>
<td>ˀênû</td>
<td>ˀênû</td>
<td>ˀênû</td>
<td>ˀênû</td>
<td>ˀênû</td>
<td>ˀênû</td>
</tr>
</tbody>
</table>

Evidence of a glide */w/ must be inferred from proposed vowel correspondences. In chapter 8.4.2.3 we saw that Southern Tiwa /jã/ and the correspondence set with which it occurs appears to descend from PKT */q/ following a labialized consonant. Since in blood we find no trace of an obstruent to bear the labialization, it might be posited that a stem-initial labiovelar glide by itself was the source of this vowel correspondence. The labiovelar came to be coarticulated with the following vowel producing the higher back (rounded) vowels in Kiowa, Tewa, and Towa and the diphthong of Southern Tiwa. The same might also be true in the set for the second person independent pronoun. Here we find a high back vowel in Tewa and Towa but a front vowel reflex in Kiowa and Tiwa. Proposing a stem initial glide before a nasalized high front vowel could account for this,
the glide being entirely lost in Kiowa and Tiwa but becoming coarticulated with the vowel in Tewa and Towa.

The *vomit* set presents the same story as *blood*, but with an oral vowel instead of a nasal. The syllable structure leads the glide */w/ to be coarticulated with the high vowel instead of descending as a consonant. In Tiwa this results in a diphthong, but in Tewa the combination ends up with a monophthongal vowel /e/, the reflex of a high back vowel.

These examples fit into the account that has been built in the past two chapters, but once again there are too few cognate sets to securely support a reconstructed labiovelar glide */w/.

I have yet to find firm evidence of a stem-initial palatal glide */y/, although one possible cognate set that could be explained with a glide is the *child* morpheme in Table 9-54.

Table 9-54: Cognate Set, PKT */y/?, KT *child*

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>child,</td>
<td>ˀi</td>
<td>ˀe</td>
<td>ˀe</td>
<td>ˀu</td>
<td>ˀo</td>
<td>ˀu</td>
<td>ˀi</td>
<td>*yu (?)</td>
</tr>
<tr>
<td>diminutive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*wi (?)</td>
</tr>
</tbody>
</table>

Tewa, Tiwa, and Towa all show a correspondence indicating the high back vowel */u/, but Kiowa has a high front vowel reflex. Assuming these forms are cognate, this correspondence could be explained by positing a word-initial palatal glide */y/ in PKT, the high front quality of the glide being coarticulated with the vowel to give modern Kiowa ˀi. An alternative account could posit a sequence */wi/, but the correspondences of Table 9-52 above indicate we have here a different original form.

I tentatively reconstruct a palatal glide */y/ to the stem-initial consonant inventory of Proto-Kiowa-Tanoan, but it must be recognized that the evidence is limited and weak.
at the moment. The possibility of glides in stem-final position is also not well-supported, as will be discussed in chapter 10.2.5. Assuming there were glides in Proto-Kiowa-Tanoan, it appears that they began eroding away early in the development of the family.

9.9 Conclusion

This chapter has laid out a proposal for the reconstruction of the stem-initial consonant inventory of Proto-Kiowa-Tanoan. On many counts this inventory ends up being quite similar to the sets seen in the modern Kiowa-Tanoan languages and in Hale’s (1967) reconstruction. There is a four-way contrast in stops: voiceless unaspirated, aspirated, ejective, and voiced. These contrasts are made at multiple points of articulation and include labiovelars. There were only a small number of sonorants stem-initially.

Where this account differs from Hale’s, and where it suggests there were differences in PKT as opposed to the modern languages, is in the proposal of two types of consonant contrasts. Instead of positing affricates and fricatives as Hale does, I have suggested that there was a primary contrast between (palatalized front velar stops and back velar stops. This included not only simple velars, but also labiovelars. Labialization also appears to have played a major role in the changes that have transpired in the language. While most of the labialization effects can be posited to descend from the labiovelar consonants, the data have also required positing labialized bilabial stops as well, although this aspect of the proposal I do not find optimal30.

30 Insofar as the labialization analysis may have validity, we must also consider whether there could have been labialized alveolar stops as well. I have attempted to account for data that might otherwise be interpreted to show stops such as */tʰ/, */tʰʰ/, etc. as descending from front labiovelar stops instead. This should be carefully evaluated, however.
As a result of these proposals, we find a system that was almost entirely lacking in fricatives, the glottal fricatives being the only fricative-like segments with any firm support. The other fricatives that we find in the modern languages are proposed to have descended from stops by processes of palatalization/fronting and accompanying spirantization. These developments thus have led to the proposal of the consonant inventory in Table 9-55.

Table 9-55: Reconstructed PKT Stem-Initial Consonants

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unaspirated</td>
<td>*p</td>
<td>*pʷ</td>
<td>*t</td>
<td></td>
<td>*kʲ</td>
<td>*kʷ</td>
<td>*q</td>
<td>*qʷ</td>
<td>*ʔ</td>
</tr>
<tr>
<td>Ejective</td>
<td>*p'</td>
<td>*p'ʷ</td>
<td>*t'</td>
<td></td>
<td>*k'ʲ</td>
<td>*k'ʷ</td>
<td>*q'</td>
<td>*q'ʷ</td>
<td></td>
</tr>
<tr>
<td>Aspirated</td>
<td>*pʰ</td>
<td>*pʰʷ</td>
<td>*tʰ</td>
<td></td>
<td>*kʰʲ</td>
<td>*kʰʷ</td>
<td>*qʰ</td>
<td>*qʰʷ</td>
<td></td>
</tr>
<tr>
<td>Voiced</td>
<td>*b</td>
<td>*bʷ</td>
<td>*d</td>
<td></td>
<td>*gʲ</td>
<td>?</td>
<td>?</td>
<td>*gʷ</td>
<td></td>
</tr>
<tr>
<td>Fricative</td>
<td></td>
<td>*(hʲ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*hʷ</td>
<td>*h</td>
</tr>
<tr>
<td>Nasal</td>
<td>*m</td>
<td>*n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glide</td>
<td></td>
<td>*y?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*w</td>
<td></td>
</tr>
</tbody>
</table>

With this proposal in place, we can approach the reconstruction of the much more elusive stem-final consonant inventory. So far as can be determined, the stem-final consonant analysis requires proposing only a single additional consonant not found in stem-initial position, namely the lateral approximant *l/. This is not problematic insofar as the lateral and cognate rhotic approximants found in the modern languages also do not occur stem-initially. Chapter 10 will thus build on the proposals here while demonstrating that consonants in final position do not necessarily behave in the same manner as consonants in stem-initial position.
10 Phonological Reconstruction: Stem-Final Consonants

Having addressed the behavior of vowels in chapter 0 and stem-initial consonants in chapter 0, we turn now to consonants that occur stem-internally and stem-finally. In particular we will see that consonants that occur intervocally or otherwise word-internally will often show different sound correspondences than what we find stem- and word-initially. Consonants that occur as codas, including stem-final consonants, are at an even further remove from initial consonants in their behavior and correspondences. It is perhaps such non-initial consonants in particular that have led the different Kiowa-Tanoan languages to be as divergent as they are.

Section 10.1 will begin by discussing the phonological alternations that can be found in compounding. This applies in particular to stem-initial consonants that undergo changes distinct from those attested at the beginning of a word. Section 10.2 will then take on the even more complicated domain of stem-final consonants. This includes consonants that occur at the end of the word as well as stem-internally. Considering that such consonants have never really been addressed in the published literature, this chapter will propose reconstructions of these consonants for the first time.

10.1 Intervocalic Consonants

Because of the prevailing CV and CVC morphological structure of Kiowa-Tanoan¹, consonants mostly end up in intervocalic (or otherwise in word-internal position) in morphologically complex environments. That is, it is rare to find CVCV sequences that do not have a morphological boundary immediately preceding or

¹ Suggestion of an earlier CVCV structure will be briefly discussed later in this chapter.
following the medial consonant (CV-CV or CVC-V) or CVCCV sequences that do not have a morphological boundary between the two medial consonants (CVC-CV). This is primarily in compounding structures, but sometimes also due to more grammaticalized affixation. In the synchronic linguistic systems, there are few productive phonological processes that would alter the form of such a derived internal consonant. Diachronically, however, we find relatively recent alterations in at least some branches of the family on top of the stem-final consonant alternations that are discussed in the main portion of this chapter. As might be expected, such word-internal (usually intervocalic) alterations are predominantly characterized by voicing and other types of lenition.

10.1.1 Compounds: Intervocalic Stem-Initial Consonants

Compounding of two or more lexical stems has probably always been the primary means of lexicon building in Kiowa-Tanoan, and it is still productive today. As a result there has been a continuous production of word-internal consonants as the initial C of the second stem in a compound winds up between two vowels (i.e. CV+CV(C)) or between a (usually voiced) consonant and a vowel (i.e. CVC+CV(C)). The analyzability of compounds—the association of each constituent stem involved with its non-compounded usage—may typically help to ensure that the phonological form of the stems involved are not altered too much from their source material. Most historical compounds in Kiowa-Tanoan are thus still recognizable as such in the different branches. However, prevailing phonological trends along with lexicalization processes that might divorce a compound word from its constituent stems can easily lead to phonological divergence. This is what we seem to find in the Tewa languages.
The Tewa languages possess a relatively large number of disyllabic or longer words that do not seem to have any internal morphological compositionality in synchronic perspective. Interestingly many such words contain a voiced obstruent, otherwise relatively rare in the language. Where there appear to be cognates in the other Kiowa-Tanoan languages, we find those voiced obstruents corresponding to stops of various kinds, as illustrated in Table 10-1.

Table 10-1: Compound Intervocalic Voicing, Tewa

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>cultivated field</td>
<td>naya</td>
<td>nqba</td>
<td>napa</td>
<td>napia</td>
<td>nape</td>
<td>nopa</td>
<td></td>
</tr>
<tr>
<td>beard, mustache</td>
<td>šóyô</td>
<td>ḥapʰa</td>
<td>ḥapha</td>
<td>ļapha</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>roadrunner</td>
<td>ũogowí</td>
<td></td>
<td></td>
<td>kowira</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Tiwa and Towa forms make it clear that these words are compounds. The form *cultivated field* is analyzable as, e.g. TA nɔm-pa earth-made, while *beard* is comprised of, e.g. ST řa-pha mouth-hair. This opens the door for analyzing the Tewa word for *roadrunner*, which appears to consist of a cognate to the Southern Tiwa word plus an uncertain initial element.

What we appear to have here in Tewa is a historical process of intervocalic voicing of both plain and aspirated voiceless stops. In Rio Grande Tewa, at least, the resulting voiced stops are then subject to the active lenition process that gives us the allophones [v, r, ɣ~y~w] of the stops /b, d, g/ respectively. With this observation, we can

---

2 In old compounds, the stem-final /m/ of nɔm appears to be lost before the consonant of the second member of the compound.

3 The word initial /ɔ/ could reflect p’ô road as a calque from Spanish or English. Or, it could represent the common common-initial element p’o water, although the status of the latter meaning would be unclear in this context.
then analyze words Tewainternally even when a cognate is not available, e.g. RGT súre 
quiver from sú-te arrow-structure.

This process is often combined with another to produce compounds that are
almost unrecognizable in comparative perspective. Word-initial ejective stops, typically
the bilabial ejective stop /p'/, are often elided when the first member of a compound. This
applies in both Tewa and Towa. In the former the oral closure is completely elided,
leaving only a glottal stop followed by the vowel of the original morpheme. In the latter
the deletion or lenition of the oral closure has prompted a labiovelar glide onset to the
vowel that remains while the vowel seems often to assimilate to the vowel of the
following syllable. Even though these deletions apply at the beginning of the word, they
are more appropriately covered here due to their restriction to compound contexts. Table
10-2 gives some examples of this ejective deletion.

Table 10-2: Compound-Initial Ejective Elision, Tewa and Towa

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>ear</td>
<td>t'ɔ'-</td>
<td>ʔȯ ye'</td>
<td>ʔȯ ye</td>
<td>t'ɔli</td>
<td>t'ali</td>
<td>t'али</td>
<td>wâ've</td>
</tr>
<tr>
<td>ice</td>
<td>ʔɔyi</td>
<td>p'ɔcia</td>
<td>p'aci</td>
<td>p'аšia</td>
<td>wâša</td>
<td></td>
<td></td>
</tr>
<tr>
<td>beaver</td>
<td>ʔoyo</td>
<td>p'ɔyɔ</td>
<td>p'аca</td>
<td>p'аča</td>
<td>waži</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sky</td>
<td>ʔɔp'ą</td>
<td>ʔɔ'pa</td>
<td>p'аpi</td>
<td>p'аpi</td>
<td>p'апя</td>
<td>wapa</td>
<td></td>
</tr>
<tr>
<td>spring</td>
<td>ʔɔp'ą</td>
<td>ʔɔ'pa</td>
<td>p'аci</td>
<td>p'аci</td>
<td>p'аšи</td>
<td>wéšé</td>
<td></td>
</tr>
</tbody>
</table>

Compare the beginnings of the Tewa and Towa words with their Tiwa and Kiowa
cognates. The latter begin with ejective stops while the former begin with a glottal stop
(Tewa) or a glide (Towa). Cognate sets where the ejective deletion is combined with the
intervocalic voicing in Tewa are illustrated in Table 10-3.
Table 10-3: Compound-Initial Ejective Elision and Intervocalic Voicing, Tewa

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>Ta</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>shell</td>
<td>ʔogá</td>
<td>ʔogá</td>
<td>ʔogá</td>
<td>ʔogá</td>
<td>ʔogá</td>
<td>ʔogá</td>
<td>ʔogá</td>
</tr>
<tr>
<td>star</td>
<td>ʔagóyó</td>
<td>ʔagáyó</td>
<td>ʔagáyó</td>
<td>ʔagáyó</td>
<td>ʔagáyó</td>
<td>ʔagáyó</td>
<td>ʔagáyó</td>
</tr>
<tr>
<td>duck</td>
<td>ʔoviŋ</td>
<td>ʔoviŋ</td>
<td>ʔoviŋ</td>
<td>ʔoviŋ</td>
<td>ʔoviŋ</td>
<td>ʔoviŋ</td>
<td>ʔoviŋ</td>
</tr>
<tr>
<td>salt</td>
<td>ʔvisión-</td>
<td>ʔvisión-</td>
<td>ʔvisión-</td>
<td>ʔvisión-</td>
<td>ʔvisión-</td>
<td>ʔvisión-</td>
<td>ʔvisión-</td>
</tr>
</tbody>
</table>

In the Tewa forms—as well as in the Towa and Kiowa⁴ cognates given—the word-initial ejective has been lost, as seen in comparison with the Tiwa cognates. The Tewa words have the additional change of showing intervocalic voicing. From a synchronic perspective, these Tewa words do not appear to be analyzable as compounds.

The cognate sets ear, ice, star, and salt in Table 10-2 and Table 10-3 above show an intervocalic voicing alternation not immediately apparent. When the consonant that would descend as Tewa /s/ falls in intervocalic position in older constructions, it is realized as /y/. This is most apparent in the Tewa augmentative suffix -yó (seen in RGT ʔagóyó, AT ʔagáyó star), which is related language-externally to the stem só- large, more transparently cognate to TA ɬɔ, PI ɬa, ST ɬa large (seen in TA p’ɔxíla star, etc.) and to TO t’ɔ AUGMENTATIVE and Ki -só- AUGMENTATIVE. It can also be observed Tewa internally in the kinship term su’yû- grandmother, which appears to have the same semi-reduplicative structure as mé’mé- mother’s brother, and in kó’ô- father’s youngest sister. This alternation between /s/ and /y/ in Tewa must be recognized to account for a small number of cognates.

⁴ As Watkins (1984: 63) mentions in her synchronic description of Kiowa, deletion of word-initial ejectives is sporadically found in Kiowa as well. Most lexical constructions where this is found do not appear to have specific cognates in the Tanoan languages.
While there are a fair number of compounds in Tewa where we see this intervocalic voicing at work, there also seem to be some number of exceptions. That is, we find old compounds that may or may not be recognizable as such in synchronic Tewa, but where no intervocalic voicing has applied. These are seen in Table 10-4.

Table 10-4: Tewa Compounds Without Intervocalic Voicing

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>cloud</td>
<td>ˀokhúwá</td>
<td>ˀokhúwá</td>
<td>p'axoa</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>steam</td>
<td></td>
<td></td>
<td>humid</td>
<td>wákha</td>
</tr>
<tr>
<td>lather, foam</td>
<td>ˀokhó</td>
<td>ˀokhólo</td>
<td>p'akha</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>count</td>
<td>mq pa·</td>
<td>mq pa·</td>
<td>mpi</td>
<td>mapi</td>
<td>mí pa·</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sky</td>
<td>ˀo pa·</td>
<td>ˀo pa·</td>
<td>p'api</td>
<td>p'api</td>
<td>p'apjy</td>
<td>wa pa</td>
<td></td>
</tr>
</tbody>
</table>

Why these words are exceptional is unclear. Perhaps speakers’ recognition of their internal composition led them to keep the form from changing until after the voicing process had ceased to be productive. Or, there may be some phonological feature involved here that aids in the preservation of the original voiceless consonant in intervocalic position. This remains for future study to uncover.

10.1.2 An Aside: Unanalyzable Compounds and Borrowings

I have not identified any regular compound-internal alteration in stem-initial consonants in Kiowa, Tiwa, or Towa (aside from a single alternation between /s/ and /th/ in Kiowa which was mentioned in the discussion of chapter 9.6). However, all of the languages do possess multisyllabic words that are not synchronically analyzable as compounds. In many cases this appears to be a product of one or more of the constituent morphemes having been lost in the languages in independent use. In other cases,
however, there is the suggestion of some other irregular developments. One such case is the Tiwa word for *bread*, given in Table 10-5 below.

Table 10-5: Tiwa *bread* Cognate Set

<table>
<thead>
<tr>
<th></th>
<th>TA</th>
<th>Pī</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>bread</em></td>
<td>-k-</td>
<td>-k-</td>
<td>-kh-</td>
</tr>
<tr>
<td></td>
<td>p’ɔku</td>
<td>p’ako</td>
<td>p’akhu</td>
</tr>
</tbody>
</table>

These Tiwa words are clearly cognate, showing all of the expected sound correspondences except for the word-internal intervocalic consonant. There is no regular correspondence between Southern Tiwa /kh/ and Northern Tiwa /k/ in any context yet identified. There is also the issue that even though this word has the disyllabic form of a compound, neither part of the word is identifiable as a constituent morpheme. The first syllable looks like TA p’ɔ, Pī p’a ST p’a *water*, but the semantic motivation for such a reading is not apparent.

Failing to find a language-internal explanation in Tiwa, we might then look to the other Kiowa-Tanoan languages to see if we can find either a direct cognate or individual stems that could have produced these Tiwa words. We do find the following candidate words in Tewa and Towa, given in Table 10-6.

Table 10-6: Cognate Set, KT *cornmeal*

<table>
<thead>
<tr>
<th></th>
<th>Kī</th>
<th>RGT</th>
<th>AT</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>cornmeal, atole</em></td>
<td>‘qgæŋ</td>
<td>‘qgæ ~ ‘qkæŋ</td>
<td>p’ò hì</td>
<td>corn meal</td>
</tr>
</tbody>
</table>

Only the Towa word is synchronically analyzable as a compound while the possible Tewa cognate shows those developments discussed above which obscure a clear etymology (intervocalic voicing, initial ejective elision, as well as nasal spreading).
However, the constituent morphemes of the Towa compound do have regular cognates in Tewa and Tiwa. The cognates to these components appear in Table 10-7.

Table 10-7: KT Cognate Sets, corn and flour

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PT</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>fresh,</td>
<td>p’şgya</td>
<td>p’e</td>
<td>fresh</td>
<td>p’e</td>
<td>fresh</td>
<td>p’i</td>
<td>fresh</td>
</tr>
<tr>
<td>ripe</td>
<td></td>
<td>ə</td>
<td>corn,</td>
<td>ə</td>
<td>corn,</td>
<td>ə</td>
<td>corn,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>berry,</td>
<td></td>
<td>berry,</td>
<td></td>
<td>ripe</td>
</tr>
<tr>
<td>flour,</td>
<td>khæŋ</td>
<td>kʰɛŋ</td>
<td>ʔɪɔ</td>
<td>ʔɪ</td>
<td>ʔɪa</td>
<td>ɦɨ</td>
<td>ʔɪa</td>
</tr>
<tr>
<td>meal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thus, the Towa word for cornmeal, p’ô·hî, is a transparent compound of corn-meal. Compounding the Tewa or Tiwa cognate stems does not regularly give us the bread / atole word that we are looking for, however.

There is of course the possibility that the Towa cornmeal word is simply unrelated to the Tiwa bread word. However, there may be another possibility worth investigating: borrowing. Anthropologists have long recognized shared cultural traits among the Pueblos, despite the different linguistic affiliations (Kiowa-Tanoan, Keresan, Zuni, Uto-Aztecan). Correlating shared lexical and linguistic traits, however, have been much more elusive and it does not appear that peoples speaking languages of different families have borrowed many lexical items from each other. Much more difficult to determine, on the other hand, is whether closely related languages have borrowed from each other. A borrowed word could easily appear to be an indigenous cognate depending on the particular sound changes that have taken place and the time at which the word was borrowed.
In the case of the Tiwa *bread* word (and perhaps the Tewa *atole* word), it would appear that the word could be a borrowing from an early Towa language (predating the Towa change of */qʰ/ to /h/) since Towa is the only language in which this compound has any clear compositionality and which could give the sounds that we find⁵. Such a borrowing scenario could help to explain the irregular velar correspondence between Northern Tiwa /k/ and Southern Tiwa /kh/: whatever the route of transmission for the word, Southern Tiwa speakers heard it with its original aspirated quality while Northern Tiwa speakers acquired it as a plain stop, perhaps at a time after the native Northern Tiwa aspirated velar stop had already become a fricative /x/ (thus /k/ could be the closest sound to a /kʰ/ heard from another language).

This discussion of the Tiwa word for *bread* I bring up here because it is probably in compounds with whatever sound changes they have or have not undergone where we are most likely to discover such borrowings. Material cultural innovations are more likely to be expressed as compounds than as monomorphemic words, at least in Kiowa-Tanoan, and so it is such compound words that are likely to spread with the material innovation. While language contact should never be the first assumption we leap to whenever we find an irregular sound correspondence—unless there is a good external reason for thinking so—it is quite possible that there are more than a few shared lexical forms in the Pueblo area. Although I cannot hope to fully delve into this issue in the present dissertation, the

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⁵ If Pecos Pueblo spoke a Towa language, this may be the source of the borrowing, it being a larger and, as a major trading center, undoubtedly more influential community than the smaller communities in the Jemez Mountains. Alternatively the word could stem from the Jemez since these communities were geographically proximate to and probably had a great deal of contact with Keresan communities. If the source word originally referred to a type of food innovative to the Kiowa-Tanoan communities, the material itself may have been introduced from Keresan communities to the nearest Kiowa-Tanoan centers (speaking Towa) and spread from there to the more northerly and easterly Pueblos with a phonotactically acceptable Kiowa-Tanoan label.
family-internal comparative-historical reconstruction that is being addressed here will help us to identify lexical anomalies that could be indicative of borrowing. This Tiwa word for \textit{bread} may be an example of this, but it may also receive other explanation as further phonological analysis is done. For now we can note that no Tiwa language shows a regular intervocalic de-aspiration process (to give us Taos Tiwa \textit{p'\text{\`o}ku bread}) or aspiration process\textsuperscript{6} (to give us Southern Tiwa \textit{p'akhu bread}) akin to the voicing and lenition we see in Tiwa compounds. Such an irregular Tiwa branch-internal correspondence thus likely has some other explanation that we should ultimately seek to find.

\textbf{10.1.3 Summary of Word-Internal Stem-Initial Consonants}

For the most part, morphological boundaries and morphological constituency remain clear in all but the oldest strata of morphology, especially lexical morpheme boundaries and constituents. Stems are simply concatenated together with little internal change that would influence comparative-historical analysis. The major change noted in this section is that obstruents tend to become their voiced counterparts in the Tewa languages: /b \sim v/ from bilabial /p, ph/, /d \sim r/ from alveolar /t/, /g/ from velar /k, kh/, and /y/ from fricative /s/\textsuperscript{7}. Also in compounds, word-initial ejectives are sometimes lost in Tewa, Towa, and Kiowa. Neither of these processes applies across the entire lexicon.

The following sections will address the main internal changes we find in consonants in Kiowa-Tanoan. While the focus is on stem-final consonants, many of

\textsuperscript{6} Southern Tiwa does show a change compared to Northern Tiwa wherein all instances of /kʷ/ have become /xʷ/.

\textsuperscript{7} I only list the attested alternations. That is, while we might expect to find an instance of Tewa /d/ that derives from /th/, it has not so far been found. Also notice that we do not seem to see the alternation with ejective consonants.
which are realized synchronically as stem-final codas, many of these consonants do end up being word-internal. It should not be surprising, therefore, to find certain common developments with the processes described above, namely intervocalic voicing in Tewa (and in Kiowa).

10.2 Stem-Final Consonants

Consonants that fall at the end of stems appear to have had a tumultuous history of development, far more than the vowels and stem-initial consonants. Based on the modern languages, we would most directly interpret that these consonants would have typically occurred in coda position, at least in citation forms and in some constructions (like compounds). They could also occur intervocalically when followed by a vowel-initial suffix. In the course of the diachronic analysis, however, there is some suggestion that a number of stems may have had a CVCV form at some stage in Proto-Kiowa-Tanoan. Processes of lenition have eroded away many of these consonants, obscuring their original phonetic identity at best and leaving only the barest traces and hints of their former presence quite frequently.

Added to these conditions, we also have the potential complexity of archaic morphology. While the modern languages make heavy use of procliticization, the family is largely suffixing when it comes to more tightly bound increments. This means that the ends of synchronically monomorphic stems could actually contain several layers of defunct morphology surfacing as stem-final segments. Some of these layers may very well have applied only after the break-up of Proto-Kiowa-Tanoan, meaning a stem-final consonant reflecting such a layer in one language will not actually have a correspondence
in the stem’s cognates in the other languages. At present, we can only guess at the form and function of such morphological residue on the basis of the morphological forms and categories that we find in the modern languages. I therefore can only take into consideration in my analysis that morphology which is relatively transparent, even if it is no longer productive in the modern languages.

Given these complexities and concerns, many of the proposals in this chapter will have to remain tentative for the moment. Much further research remains to be done in this domain. However, this chapter does provide some significant headway into understanding the fate of these stem-final consonants. With further understanding of these stem-final consonants (and even stem-final syllables), we will probably also be able to provide further insight, clarification, and elaboration into the development of the preceding vowels reconstructed in chapter 0.

10.2.1 The Number and Nature of Stem-Final Consonants

The following sections will address stem-final consonants according to their proposed place of articulation. However, before we tackle the individual realizations of these consonants, it is useful to try to determine approximately how many stem-final consonants there were in Proto-Kiowa-Tanoan and what their most likely form was. This will be necessary for limiting the scope of the proposed reconstructions and to ensure that what is being reconstructed is a feasible language on typological grounds and in relation to the attested modern languages.

In the living Kiowa-Tanoan languages, we find the following situation in terms of stem-final and relevant stem-internal consonants. Kiowa and Tiwa each show about half
a dozen different codas, while Tewa and Towa allow only one or two. In Kiowa the inventory of possible codas is /p, t, m, n, l, y/. The lateral /l/ can never occur word-initially and in coda position there is complementary distribution of oral consonants /p, t, l/ and nasal consonants /m, n/: the former only follow oral vowels and the latter only follow nasal vowels. In Taos Tiwa the inventory is /b, d, (g), m, n, l, w, y/, the /g/ being rare in this position and seemingly occurring only when a final vowel is elided. Southern Tiwa has the same inventory, but the voiced stops /b, d, g/ are devoiced and usually spirantized to /f, θ, x/ and /l/ is replaced by /r/. Picuris Tiwa has lost its voiced stops, in coda position merging them with nasals, so the inventory is /m, n, l, w, y/. As in Kiowa, the lateral /l/ and its rhotic Southern Tiwa correspondent /r/ do not regularly occur word-initially in Tiwa (there are two exceptions to this in Northern Tiwa which do not appear to be borrowings from Spanish). In the Tewa languages, the only permissible codas are /ŋ, ʔ, h/, /h/ never occurring word-finally. It is questionable how much /ŋ, ʔ, h/ have segmental (instead of suprasegmental) status in coda position synchronically. The nasal /ŋ/ only occurs in coda position and alternates with /n/ (and rarely with /m/) when suffixation puts it into a syllable onset. Arizona Tewa also has a lateral approximant /l/ which only occurs intervocalically within a morpheme, the vowels on either side usually being of the same quality. In Kiowa, Tewa, and Tiwa, the inventory of coda consonants is effectively the same as the inventory of stem-final consonants. Finally, in Towa the only

8 The phonemic coda glottal stop may indeed descend from elided stem-final consonants. The full details of this development are not yet clear.
9 In Kiowa it appears that there is coda-devoicing: coda /p, t/ show up in some stems as /b, d/ when suffixes are added. There are not many stems with these final consonants that appear in the appropriate constructions to show such an alternation, so it is not entirely clear if all instances of coda /p, t/ in the language should be derived from voiced /b, d/ by coda devoicing or if devoicing simply merged /b, d/ with also-occurring codas /p, t/.
permissible codas are /š/, which is only a coda in a single suffix, and /l/. These consonants are often elided in coda position and resyllabify into onset position whenever possible, even across morphosyntactically defined word boundaries. Thus, Towa has effectively lost all codas. However, Yumitani (1998) does analyze the language as having the following stem final consonants (which only appear when followed by a vowel-initial suffix): /b, p, d, t, s, tʸ, m, n, l, w, y/. As in the other languages, the lateral approximant /l/ never occurs word-initially in indigenous lexical items.

From this quick review and summary of stem-final consonants, we can observe certain patterns that already restrict the probable inventory for Proto-Kiowa-Tanoan. When codas are allowed at all, the inventory includes sonorants. In Kiowa and Tiwa, this includes the entire inventory of sonorants. Of obstruents, it appears that only plain stops of some kind are allowed, either voiced or voiceless, but never ejective or aspirated stops. In their coda stops, the modern languages also only permit bilabial and alveolar, never velar stops (except as a late, and uncommon, development in Tiwa).

The omission of velar consonants in coda position is notable, but the restriction of coda obstruents to the least complex that occur in the language’s inventory is not typologically uncommon (Maddieson 2013c). That the coda inventory would include sonorants as they exist in the language is also typologically highly common (Maddieson 2013c). As we will see below, all but the restriction on velars appears to have held in Proto-Kiowa-Tanoan. It must be remembered, however, that even if a reflex of a stem-final consonant occurs stem-finally in coda position in a modern language, this does not mean that it descends from an original coda. Thus some of the stem-final consonants to be reconstructed may have actually occurred intervocalically in Proto-Kiowa-Tanoan.
Based on the analysis and hints noted in the following sections, the inventory of stem-final consonants is suggested to be: */p, t, k, q, b, d, g, l, m, n/ and possibly */g, kʷ, qʷ, gʷ, kʷ, qʷ, gʷ, w, y/, although the evidence for the latter set is still shaky. While none of the modern languages permit clusters in coda position, I do discuss the possibility that PKT may have permitted sequences of sonorant+stop and glide+sonorant in stem-final position.

I will begin the discussion with the clearest cases, velars (section 10.2.2) and bilabials (section 10.2.3), before addressing the richer inventory of alveolar segments, insofar as can be accomplished at this juncture (section 10.2.4). Finally, in section 10.2.5 I will briefly evaluate the more tenuous situation of glides, which appear to have been among the first codas to have disappeared.

10.2.2 Velar Consonants

Despite the entire lack of coda velars in the modern languages, final velars in Proto-Kiowa-Tanoan have left some of the clearest evidence of any of the codas. The evidence is not wholly unambiguous and further research may show that these velars were not in fact codas, but were realized as the onset of a final CV. Indeed, some of these velars might ultimately prove to be affixes. However, there is some evidence suggesting they are indeed stem-final (whether or not they were ever realized as codas at the PKT stage: there are suggestions later in this chapter that early PKT or PPKT may have had a CVCV structure). Finally, given the lack of coda velars in the modern languages, it may be that the segments I reconstruct as velars had already changed to some non-velar articulation when in coda position by the time that PKT began breaking up into its
daughter languages. That is, the velar reconstruction may represent an earlier stage than Proto-Kiowa-Tanoan in terms of actual articulation.

10.2.2.1 Stem-Final */q/

The primary evidence for stem-final velars comes from a couple of sets of verbs that end, in at least certain constructions, in velar-vowel sequences. The vowels in these instances include reflexes of the old transitivizing/causativizing suffix often realized as -i mentioned in chapter 5.3.11, reflexes of the valence-reducing passive suffix, and the modern Taos Tiwa and Kiowa negative suffixes. The languages differ in what constructions the velar appears in. For presentational purposes, I will categorize the verbs according to their realization in the Tiwa languages.

In the first class of verbs, the velar is always realized as the onset of a stem-final CV syllable in Tiwa, as shown in Table 10-8. In Tiwa the velar remains across active constructions, but the corresponding consonant in the other languages may variably disappear.
Table 10-8: Cognate Sets, Stem-Final PKT */q/ (Intervocalic)

<table>
<thead>
<tr>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>tie</td>
<td>t'á dé block, shut in (?)</td>
<td>c'ïŋ</td>
<td>c'ïaki (&gt; ci (INC))</td>
<td>c'ike</td>
<td>č'ïaki (&gt; šiay (INC))</td>
<td>t'ë sé (&gt; së se (INC))</td>
<td>*k'ïqi (&gt; *kïq(V))</td>
</tr>
<tr>
<td>give, hand, feed</td>
<td>má go</td>
<td>mëgi (&gt; më: ni (POT), pë (INC)) give</td>
<td>mëki feed</td>
<td>mëke feed</td>
<td>mëki feed</td>
<td>më (&gt; më: se (INC)) give</td>
<td>*mëqi</td>
</tr>
<tr>
<td>sit down, seat</td>
<td>sóy seat; só gyá sit down</td>
<td>sóge</td>
<td>sëki seat</td>
<td>lakë seat</td>
<td>łaki seat</td>
<td>t'á s-ë</td>
<td>*k'ãqi</td>
</tr>
<tr>
<td>stretch, pull; tall</td>
<td>kyóy tall (S)</td>
<td>tũwã pull, stretch</td>
<td>tũki pull, stretch</td>
<td>tũki pull, stretch</td>
<td>tî pull</td>
<td>*k'ũq(V)</td>
<td></td>
</tr>
</tbody>
</table>

In the Tiwa forms here, a -kV sequence remains in active forms, but tie illustrates that the ending may disappear in the basic incorporated form, cf. TA c'ïaki > ci (INC), ST č'ïaki > šiay (INC). We will see shortly that the /y/ in the Southern Tiwa incorporated form šiay appears to be a remnant of the velar (and in Taos, /iay/ sequences seem to have been reduced to /i/).

The cognate verbs in Kiowa, Tewa, and Towa have different behaviors language-internally just within this set. In Rio Grande Tewa the velar CV sequence is only regularly present in the perfective form, when it occurs at all. In mági give the -gi

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10 There seems to be a historical relationship in Kiowa-Tanoan between the meanings stretch and tall. We find here the adjectival tall meaning in Kiowa and Tewa corresponding to the verbal stretch meaning of Tiwa and Towa. We also find verbal stretch in Kiowa and Tewa corresponding to adjectival tall in Tiwa and Towa in Table 8-69.

11 In Arizona Tewa, the suffixal part of verb morphology is poorly described. Most references to Tewa will therefore rely on Rio Grande Tewa data.
sequence does not occur outside the perfective, as illustrated by the potential form máʾni and the incorporated form pæ. However, in sóge sit down, seat, the /ge/ is present in all forms of the verb. The /ŋ/ at the end of c'iŋ tie (PF) and the /n/ of the form máʾni give (pot) may represent reflexes of the original velar when a vocalic suffix was missing (and the velar occurred in coda position)\textsuperscript{12}. In túwæ tall, an adjectival form that seems to be historically related to the verbs in Tiwa and Towa, the velar appears to be preserved as /w/ following the high back vowel. Like the rest of the Tewa forms with /VwV/ we'll see below, I am not yet certain of the status of the final vowel /æ/.

In Kiowa the velar appears always to be present in inflected forms. It is reflected in the /d/ in t'á dé block, if this is cognate (the expected /g/ is regularly fronted to /d/ before the mid vowel /e/), and as the /g/ in má go feed, hand. Which Kiowa sit/seat verb should be considered most directly cognate to the Tiwa forms is unclear, sóy seat or só·gyá· sit down. In either case, we see the original velar preserved as the intervocalic velar in the latter form and as the coda glide /y/ in the former. We also seem to find the velar preserved as a coda palatal glide /y/ in kyó tall (S) as well.

In Towa we find an intervocalic /s/ corresponding to the Tiwa velar. This appears throughout much of the inflectional paradigm in t'é sē tie (PF) and t'á sē sit down (PF), but less regularly in má ʾ give (PF). I do not have a full paradigm for tʃ̑, but find no form with the /s/.

\textsuperscript{12} There are a number of verbs in Rio Grande Tewa in which a nasal stop /n/ not found in other stem forms is inserted in the potential stem form before the suffix -í. Most of these are probably reflexes of stem-final consonants, all neutralized to /n/ in coda position as Tewa lost all of its codas. The codas are preserved as /n/ in the potential because the synchronically vowel-initial suffix -i allows the neutralized codas to be realized as syllable onsets.
The specifics of the irregular correspondences will remain unexplained for now, pending a fuller investigation of verbal morphology. Important for this section are the sound correspondences that do occur. We will see further instances of all of these correspondences below.

In another class of verbs in Tiwa, the velar is only realized as such in a passive construction followed by the suffix Ta -(y)a, Pi -(C)ia, ST -(č)e or in Taos Tiwa when followed by the negative suffix -i. In the active stem which occurs elsewhere, the verb stem ends in /y/. In the cognates in Kiowa, Tewa, and Towa, we find (roughly) the same velar CV ending as in the previous table. We also find one noun that shows the same correspondence. These cognate sets appear in Table 10-9.
### Table 10-9: Cognate Sets, Stem-Final PKT */q* II

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>get (P)</td>
<td>हो'ग्या</td>
<td>हो’गी (hó’नि (POT), हो’गी (IMP))</td>
<td>हो’गे</td>
<td>है (hāki (NEG)) ग्रास, ले</td>
<td>हाके</td>
<td>है (hāke (PASS))</td>
<td>है (POT)</td>
<td>हाके (PASS)</td>
</tr>
<tr>
<td>sit down</td>
<td>स्ये</td>
<td>सो’गे</td>
<td>सो’गे</td>
<td>लय (lāki (NEG))</td>
<td>लय (lāke (PASS))</td>
<td>लय (PASS)</td>
<td>टू’सेह</td>
<td>*कू’मिं (PASS)</td>
</tr>
<tr>
<td>put in</td>
<td>दो (dō (PF), दो’गु़ (NEG))</td>
<td>टो’गी (टो’नि (POT))</td>
<td>टो’य (टो’कि (NEG))</td>
<td>टो’य (टो’का (PASS))</td>
<td>टो’य (PASS)</td>
<td>टेसेह</td>
<td>टां (PASS)</td>
<td></td>
</tr>
<tr>
<td>bite</td>
<td>खु’गी (खु’नि (POT), खु’गी (IMP))</td>
<td>खु’गी (स्का (NEG)) xuy (xūki (NEG))</td>
<td>क्वोय (क्वोई (PASS))</td>
<td>हु’सेह &gt; हु’वे (IPF)</td>
<td>हु’सेह &gt; हु’वे (IPF)</td>
<td>हु’सेह (IPF)</td>
<td>*चू’मिं (PASS)</td>
<td></td>
</tr>
<tr>
<td>go</td>
<td>क्य</td>
<td>क्य</td>
<td>क्य</td>
<td>क्य</td>
<td>क्य</td>
<td>क्य</td>
<td>क्य</td>
<td>क्य</td>
</tr>
</tbody>
</table>

As can be seen, the basic Tiwa forms show a coda /y/, but when a suffix is added, the /y/ is replaced by /k/. In the other languages, we find the same correspondences as before: intervocalic /g/ in Kiowa and Tewa and /s/ in Towa. The /gi/ in Tewa only regularly appears in the perfective form, although in हो’गी get (IMP) and खु’गी bite (IMP), we do also see it reappearing in the imperative stem. Such irregular morphological occurrences help to suggest that the velar segment, at least, could represent an original stem-final consonant (rather than a suffix-initial consonant). Where the velar does not occur in Tewa, we sometimes find /n/ (in potential forms) or coda /ŋ/ (cf. Arizona Tewa कु़ु़).

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*We saw in chapter 9.3.1 that the first syllable of this stem is uncertain, especially in consideration of the Kiowa cognate.*
Irregular occurrence of /s/, and sometimes /w/, is seen in the Towa inflectional paradigm. Kiowa shows no sign of a coda consonant in kʱ ĩˈ goose.

The Kiowa form dóː (> dòp (PF), dò ʁṹ (NEG)) put on presents us with some interesting data which could lead to a revision in at least certain stem-final consonants. This form and others will be addressed in section 10.2.2.4 below, in consideration of whether there might have been stem-final labialized velar consonants as well.

Finally, there are a small number of verbs that show a velar stop in the Tiwa passive construction and the Taos Tiwa negative construction, but do not have any stem-final consonant reflex in the active stem. These few verbs are shown with their cognates in Table 10-10.

Table 10-10: Cognate Sets, Stem-Final PKT */q/ III

<table>
<thead>
<tr>
<th></th>
<th>Kř</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pț</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>set (P)</td>
<td>só́</td>
<td>sã·</td>
<td>sã·</td>
<td>sa  (&gt; sayi (NEG))</td>
<td>sia</td>
<td>se (&gt; seke (PASS))</td>
<td>šé·</td>
<td>*tʰiq</td>
</tr>
<tr>
<td>paint</td>
<td>pʰu (pʰuki (NEG))</td>
<td>pʰat’i (pʰi’i (NEG))</td>
<td>pʰiát’i (pʰi’i (PASS))</td>
<td>phu (&gt; phuke (PASS))</td>
<td>*pʰuq</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>build a fire</td>
<td>phō’t’ēgi (&gt; t’ê · ní (POT))</td>
<td>pʰat’i (pʰ Vì (NEG))</td>
<td>pʰiát’i (p’hì’i (PASS))</td>
<td>*pʰikʷ’aq</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pluck, pick</td>
<td>thégi (&gt; thë · ní (POT))</td>
<td>tʰiɔ́ (&gt; tʰì (NEG))</td>
<td>tʰì (t’hì’i (PASS))</td>
<td>ší (&lt; ši l (ROOT))</td>
<td>*k^Kʷaq</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These Tiwa verbs are much like the previous set, but there is no reflex of any stem-final consonant when it would be in coda position. The Tewa verbs for which I have found cognates do have the /gi/ increment in the perfective (and only in the perfective) that we
saw above. This alternates with /n/ in the potential. Kiowa and Towa cognates are presently lacking, so it is difficult to explain this class fully. Nonetheless, it appears that these stems may have had a stem-final velar consonant which, like above, is only realized as a velar when it occurs in syllable onset position. In the coda this velar has elided fully in Tiwa rather than leaving behind a final glide /y/. I am not certain why this is.

The correspondence sets of what I generalize as velar consonants in the above cognates are merged in Table 10-11. Even if the historical morphological patterns are still not fully resolved, we can at least note the sound correspondences as they occur.

Table 10-11: Stem-Final Consonant Correspondence, PKT */q/

<table>
<thead>
<tr>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>g</td>
<td>g ~ n ~ η</td>
<td>g ~ η</td>
<td>k ~ y</td>
<td>k ~ y</td>
<td>k ~ y</td>
<td>s</td>
<td>*q</td>
</tr>
</tbody>
</table>

This correspondence set is different from those we saw in chapter 0 involving velars in initial position. We find a voiced velar stop in Kiowa and Tewa corresponding to the voiceless stop of Tiwa. In stem-initial consonants, voicing in velars tended to be a constant across these three branches. In Towa we see a voiceless fricative /s/ corresponding to the velar stops of the other languages, something not really encountered in stem-initial consonants. We will see this correspondence set again in the pronominal indexation marker sound correspondences in chapter 0.

The consonant is reconstructed as some kind of velar stop given its most common reflexes across the languages. Its primary reflex is voiceless in Tiwa and Towa, but voiced in Kiowa and Tewa. Given that these occurrences of the reflexes occur intervocalically, an environment that is prone to inducing voicing of voiceless consonants rather than the reverse, I therefore reconstruct the velar consonant as voiceless.
We saw the spirantization of */kʲ/ to /s/ before a historically high front vowel in Towa in chapter 9.5.1. However, the Tewa and Tiwa correspondences in such cases would also regularly affricate to /c/ (and later simplify to /š/ in Southern Tiwa) and the Kiowa correspondence would front to /t/. We do not see that here. Instead, the velar stops remain as such in these three branches, the regular reflex of back velar */q/ (except in Kiowa, where this would be expected to affricate to /c/ in this environment, cf. chapter 9.5.2). Contrastive evidence in the next section indicates that this consonant may have been the back velar */q/. Note that the Towa reflex /s/ represents a neutralization of the contrast between back */q/ and front velar */kʲ/ in non-stem-initial environments.

Having a proposed reconstruction for the primary correspondence, we then need to account for the secondary Tiwa reflex from Table 10-11 above, where we find /y/ in coda position. Given the alternation between intervocalic /k/ and coda /y/ in those verb forms, it can be proposed that the back velar */q/ was lenited to /y/ when it actually occurred in coda position. It was already suggested in chapter 9.4.3 that the front velar */gʲ/ is the primary source of Tiwa /y/ in stem-initial position. In that same section, synchronic data from Rio Grande Tewa was mentioned that indicates synchronic lenition of intervocalic /g/ to /w/ and /y/. Also, note that in modern Tiwa, the only stops that are permitted in coda position are voiced stops /b, d/ that appear to have arisen from voiceless stops (see following sections on bilabial and alveolar consonants). From this evidence, we seem to have had a general lenition process wherein voiceless stops in coda position
became voiced\textsuperscript{14} with the back velar stop */q/ > *[g] or *[g] subsequently leniting to /y/ (probably via an ever fronting and leniting continuant *[ŋ] > *[ɣ] > *[y]).

**10.2.2.2 Stem-Final */k/**

There are a handful of stems that suggest that there may have been a stem-final front velar stop */k/ in contrast with the back velar */q/ reconstructed above. We find a few stems in Tiwa that end in the sequence T\$ /ci/, Pt /či/, ST /ši/, which appear to bear the Tiwa reflex of the transitivizing suffix, -i. With a couple of these we find a related verb that has a stem-final /y/ (which does not alternate with a velar like the /y/ < */q/ above). Thus, we find an alternation in Tiwa between a coda /y/ and an onset reflex of a historical velar.

\textsuperscript{14} Remember that the only other codas permitted are sonorants. In some versions of the sonority hierarchy, voiced sounds are more sonorant than voiceless, thus the voicing of codas may represent a sonorization process. Contrast this with the apparently later development in Southern Tiwa (and the development in Kiowa) wherein coda voiced stops are devoiced. This is a typologically common process of assimilation to the devoicing that follows word-final position.
### Table 10-12: Cognate Sets, Stem-Final PKT */kʃ/ 

<table>
<thead>
<tr>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>blow</td>
<td>pʰɒt (&lt; pʰ'ɒt (ROOT))</td>
<td>pʰuy (VT) ; pʰucí (VT)</td>
<td>phuy (VT), phušį (VT)</td>
<td>φisė</td>
<td>*pʰukʲ ; *pʰuk/i</td>
<td></td>
<td></td>
</tr>
<tr>
<td>take out ; draw out, pull out</td>
<td>yɑŋ ; yqwaŋ bit off (???)</td>
<td>wiy take out, add ; wici draw out</td>
<td>wiy ; wice draw out</td>
<td>wiy take out ; wiši stretch out</td>
<td>*hʷIkʲ ; *hʷIk/i</td>
<td></td>
<td></td>
</tr>
<tr>
<td>stand upright (S/D)</td>
<td>če̞l</td>
<td>čą́ ~ čą̃ŋ ~ čą́ (&gt; ki (INC))</td>
<td>ki</td>
<td>kiay</td>
<td>*qikʲ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>wipe</td>
<td>pʰit (&lt; pʰ'it (ROOT))</td>
<td>píriv pídi</td>
<td>pici</td>
<td>piči</td>
<td>piši</td>
<td>*pik'i (?) ; *pʰik'i (?)</td>
<td></td>
</tr>
<tr>
<td>throw at, strike</td>
<td></td>
<td></td>
<td>yəci</td>
<td>yaši</td>
<td>*yak'i (?)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is a comprehensive list of the Tiwa forms that appear to fall in this formal class.

There are not clear distinct cognates in the other languages to the /y/-final forms we see in Tiwa. Where we find possible cognates with the other languages, we see what appears to be an alveolar correspondence /ɾ/ (< /d/) in Rio Grande Tewa and an alveolar /l ~ t/ in Kiowa, but the same alveolar fricative reflex /s/ in Towa that we found with */q/ above.

This correspondence set is pointed out more clearly in Table 10-13.

### Table 10-13: Stem-Final Consonant Correspondence, PKT */kʃ/ 

<table>
<thead>
<tr>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>t ~ l</td>
<td>r (&lt; d)</td>
<td>d</td>
<td>c ~ y</td>
<td>č ~ y</td>
<td>š ~ y</td>
<td>s</td>
<td>*kʲ</td>
</tr>
</tbody>
</table>
As with the */q/ cases above, we do not find an apparent correspondence set exactly identical to our stem-initial sets. We do find some familiarity here, however. The Tiwa plain affricate TA /c/, PI /č/, ST /š/ descends from a front velar */kʲ/, as proposed in chapter 9.5.1, as does the Towa fricative /s/ and some instances of Kiowa /t/. The regular Tewa correspondence would be an alveolar affricate /c/. However, we do find fronting to alveolar stop in Tewa with other front velars, cf. chapter 9.4.2. Furthermore, we saw in the stem-final */q/ correspondences above that Kiowa and Tewa display a historical intervocalic voicing process (see also section 10.1 and chapter 0), which would give us (along with other lenition) the Kiowa reflex /l/ and the Tewa reflex /d/ (> [r] intervocally in RGT).

Considering the above data, it seems reasonable to propose that we have here a historical stem-final front velar */kʲ/. When this consonant fell in coda position, it appears to have merged with */q/ to become modern Tiwa coda /y/. Of course given such a small data set, this account is more tentative than the above proposal regarding */q/, but pending further research, it is a definite possibility.

10.2.2.3 Other Possible Velar Stops

Having suggested a connection between Tiwa coda /y/ and velar consonants, we can consider other cognate sets where we find a coda /y/ in Tiwa. Table 10-14 presents a correspondence where we find an intervocalic /w/ in Tewa corresponding to a stem-final /y/ in Tiwa.
In coda position, all Tiwa languages show a /y/ corresponding to the Tewa /w(V)/, except in \textit{become}. In this verb we see a diphthong /uɔ/, / oa/ (never itself followed by a coda /y/), but Picuris and Southern Tiwa show an alternation between a CV form, \textit{pu} and \textit{poa} respectively, and a form with a coda /y/, \textit{puy} and \textit{poy}. (The /b/ in the Taos Tiwa form will be addressed in section 10.2.2.4 below.) In the word for \textit{louse, flea}, the Tiwa consonant corresponding to Tewa /w/ occurs intervocally and shows the stem-initial consonant correspondence TA /y/, Pt /ɛ/, ST /ɛ/. This correspondence suggests the PKT segment */gʲ/. Whether the voiced front velar stop should be reconstructed whenever we see this Tiwa /y/-Tewa /w/(-Kiowa /y/) correspondence in coda position is uncertain.

Note in these instances that the Tewa /w/ follows a synchronic /o/ or /u/ vowel and is followed by a vowel /a/. It is unclear how to deal with the final vowel. It could be original to Proto-Kiowa-Tanoan (and so there may have been more CVCV stem forms in the language than it otherwise appears) or it could be a later development within Tewa. The labiovelar glide /w/ may simply be the resolution of an intervocalic glide following a rounded vowel. That is, the lenited velar */gʲ/ (or whatever it might have been) may have taken on the labiovelar quality after the preceding vowel had developed its modern back
rounded pronunciation. I will tentatively reconstruct such cases with a stem-final */g/ for now.

Possibly related to the above cases, at least sometimes, there are a few cognate sets where a Tewa intervocalic /w/ usually corresponds to no apparent consonant in Tiwa, Kiowa, or Towa. However, in Tiwa we see the diphthong /uɔ, oa/, suggesting a possible stem-final consonant. These sets are given in Table 10-15.

Table 10-15: Cognate Sets, Stem-Final PKT */Q/  

<table>
<thead>
<tr>
<th></th>
<th>Kt</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>sheep</td>
<td>k'úwá</td>
<td>k'ú</td>
<td>k'u</td>
<td>k'oa</td>
<td>k'á</td>
<td>*q'íQ(V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>warm</td>
<td>súwá</td>
<td>súwá</td>
<td>łuć ;</td>
<td>łum</td>
<td>loa ;</td>
<td>loami</td>
<td>heat</td>
<td>*k'íb(V)</td>
</tr>
<tr>
<td>steam</td>
<td>əokhúwá</td>
<td>əokhúwá</td>
<td>p'çxoć</td>
<td>p'akhoa</td>
<td>wáháe</td>
<td>humid</td>
<td>cloud</td>
<td><em>p'aq</em>bíQ(V)</td>
</tr>
</tbody>
</table>

These cases appear to be comparable to the become cognate set given in Table 10-14. In that set we found a Tewa /w/ corresponding to a diphthong /uɔ, oa/ in Tiwa, but in Southern Tiwa the diphthong CV form poa alternated with a form poy, suggesting an original consonant. Since none of these are active verb forms, however, there is less morphological context to show such alternations. We do find a stem-final /m/ appearing in Tiwa in morphologically complex forms based on TA łuć, Pt łu, ST loa warm, indicating a stem-final bilabial */b/ or */m/ in this case.

Aside from the bilabial in Tiwa warm, there is not a whole lot of evidence one way or another for interpreting the correspondence sets in Table 10-15 above. In the Towa words k'á: sheep and wáháe cloud, we find the low front vowel /æ/, which is a regular vowel reflex when we find a coda /y/ in Tiwa and/or a /VwV/ sequence in Tewa (cf. person, skin in Table 10-14, the Towa pronominal proclitic bæ 2>1 in chapter 0).
This suggests that the final consonant could have been a velar in these cases, but the evidence is not particularly strong. I tentatively reconstruct such cases with a stem-final velar of unspecified articulation, notated here with a capital */Q/.

Lastly, there is also at least one cognate set where we find a /y/ in Tiwa, but no consonant in Tewa (or Kiowa), as in Table 10-16.

Table 10-16: Cognate Set, KT *nose* (Stem-Final */q/)

<table>
<thead>
<tr>
<th></th>
<th>K</th>
<th></th>
<th>RGT</th>
<th>AT</th>
<th>T</th>
<th>P</th>
<th>ST</th>
<th>T</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>nose</em></td>
<td>pʰʔ-o-ʔ-o - pʰʔ-o-ʔ-o</td>
<td>ŋu ~ ŋu</td>
<td>kʰʔ</td>
<td>pʰiy</td>
<td>pʰiy</td>
<td>pʰiy</td>
<td>φůsę</td>
<td>*pʷʰIq(V)</td>
<td></td>
</tr>
</tbody>
</table>

A lot is going on in this cognate set beyond the issue of the stem-final consonant: the palatalized velar realization of the initial aspirated stop in Tewa (chapter 9.5.3), variable nasalization, and labialization interacting with the vowel (chapter 0). However, regarding final consonants, we see a palatal glide /y/ in the Tiwa languages corresponding to /s/ in Towa, a correspondence that above was reconstructed as a velar stop. Possibly in support of a velar stop interpretation is the Tewa word *šugó* mosquito. This appears to be a morphologically complex word, perhaps *šu-yó* *nose-AUGMENTATIVE*\(^\text{15}\). This analysis is far from certain, but it is the only word I have seen to date that seems to have a velar stop before the vowel of the old augmentative suffix. Thus, it could represent a Proto-Tewa composition *kʰyug-yó*, where the /g/ is a stem-final consonant. The voicing of the Tewa velar is expected in intervocalic position (section 10.1.1). Since we find this rather than /d/, the Tewa intervocalic reflex of */kʲ/ in section 10.2.2.2 above, we can reconstruct this stem-final consonant as */q/.

\(^\text{15}\) Alternatively, it may be somehow derived from *šuwa-yó* *flea-AUGMENTATIVE*.
Much remains to be studied in the above proposed stem-final velar stops. The next section will address one final class of cognates that may be reconstructed with stem-final labialized velar consonants.

10.2.2.4 Labiovelar Codas?

As a final note on correspondences that appear to reflect stem-final velar consonants in Proto-Kiowa-Tanoan, we should also consider whether there might have been stem-final labiovelar stops. These series of stops are highly frequent in the reconstruction of stem-initial consonants I present in chapter 0, showing much the same behavior and distribution of non-labialized consonants. While there is no evidence of articulatorily complex consonants like ejectives or aspirated stops in stem-final position, this of course does not rule out labiovelars.

In fact we do find cognate sets in which we find mixed reflexes that suggest a velar element and a labial element. Such sets are shown in Table 10-17.
| Table 10-17: Cognate Sets, Stem-Final PKT */Kʷ/ |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                | Ki             | RGT            | AT             | TA             | Pi             | ST             | To             | *PKT           |
| dove           | dṓ pé         | k'o'wiˀ        | k'yayba        | k'aypyia       | k'aybe         | k'aybe         | *q'aKʷi        |                 |
| command, request | dṓ pop (IPF) | yōŋ (> yómpa; yôme; coŋ (INC)) | yōŋ (> yoyba (PASS)) | čače (> čaypyia (PASS)) | čači (> čaybe (PASS); šači (INC)) | zér-yǒ́ | g'ɑKʷ(V) |
| carry, have    | m’i (> m‘ivei (POT)) | m’ya           | m’ya           | m’ya           | m’ya           | m’ya           | *bqKʷ(V)       |                 |
| become         | po (> puvu; pu'wave (IMP)) | po             | po             | po             | poa (~ poy)   | pq act, behave | *p'lkʷ(V)       |                 |
| put in         | dṓ (> dōp (PF), dṓ gु́ (NEG)) | tōgi (> tōni (POT)) | tay (> tāki (NEG)) | tay (> tāki (PASS)) | tay (> take (PASS)) | tēsē   | *taKʷ(i) (?) | *taq(i) |
| descend; carry down | sṓ (> sép (PF); sṓ (> sṓ gú (NEG)) | liw descend; liayi carry down | liaw descend; liawi carry down | liaw descend; liawi carry down | liaw descend; liawi carry down | liaw descend; liawi carry down | *k*iKʷ; *k*iKʷi |
| name, be named | kʰy be named; kʰým name (VT); kʰýgya name (N) | kʰýwé be named; khýyê name (VT) | x̂ be named; x̂yê name (VT) | x̂ be named; x̂yê name (VT) | khâ be named; khâyê name (VT) | hí | *q'qKʷ (V) *q'qKʷi |
In the Tewa and Tiwa verbs *request* and *carry*, we find a stem-final consonant that appears to reflect a PKT velar—/y/ in Tiwa, coda /ŋ/ and intervocalic /y/ in Tewa—alternating partly or wholly with a bilabial stop of some kind. Thus, we find a nasal /m/ in the Tewa form **yómæ** request (IPF) and a sequence **yômbe** request (IMP) while in Tiwa we have an oral bilabial stop added following the palatal glide, giving the sequence /yb/, as in Ta **yɔyba**, ST **čaybe** request (PASS). In *carry* we end up with the same alternation in Tiwa as in *request*, ST **mače** > **mąybe**, but in Tewa the intervocalic /y/ is replaced by a /v/ sequence, **mú** > **múvei**. We see a similar formal realization in the word meaning *dove*: a /w/ sequence in Tewa and a /yb/ or /yp/ sequence in Tiwa. In these cases there is a labial element following an element which could descend from a velar stop.

Less apparent, in *become* we see vowel and consonant reflexes to suggest a possible velar, as discussed in Table 10-17. However, we also find a bilabial stop /b/ in the Taos negative stem **puɔbɔ**. We also find a labial consonant /v/ in the Tewa imperative form **pu’wawve**, although it is not clear whether this could be cognate with the Tiwa /b/ or not.

We could interpret these as indicating a historical stem-final consonant velar-bilabial or glide-bilabial sequence, or as representing some morphological complexity, i.e. where the reconstructed velar and bilabial consonants do belong to different morphemes. The possibility to consider here, however, is that the velar/palatal element and labial element belonged to a single segment: a labiovelar stop. Certain constructions preserved a reflex of the velar, certain ones preserved the labial, and some preserved both as a consonant sequence.
This interpretation may also explain the Kiowa verbal inflection in *request, put in,* and *descend/take down.* With these verbs, we find a perfective form with a /p/: intervocalic in *dópé request (PF),* and in coda position in *dóp put in (PF)* and *sép descend (PF).* It can be noted that a coda -p is a perfective marker found on a large, but unpredictable, minority of verbs. It might be interpreted as a suffix in the modern language, but its idiosyncratic distribution also could point to an origin as a stem-final consonant. In both of the above given verbs with a coda /p/ in the perfective, we also find a negative stem form that ends in -gû: *dó’gû: put in (NEG) and só’gû: lower (NEG)\(^{16}\).* The -gû suffix is found on oral vowel-final transitive verbs (Watkins 1984: 177), but again is distributed so as to suggest some lexical idiosyncrasy. This is an especially interesting suffix because the other allomorphs of the negative suffix all have the vowel /ɔ/ and, moreover, the vowel /u/ only occurs in Kiowa following a velar stop as a reflex of a historical labialized velar.

These stem forms of Kiowa verbs could find an explanation under the labiovelar hypothesis. When followed by a vowel-initial suffix, as in the negative, the labialization of the historical labiovelar could have fused with the vowel, leaving a velar onset to give the modern ending -gû. When not followed by a vocalic suffix, as in the often unmarked perfective, the velar and labial elements of the segment could then have fused into a single bilabial stop /p, m/, especially when in coda position. This suggestion is made stronger by the /w/ > /y/ alternation seen in the Tewa and Tiwa cognates to *name* and *descend/lower.* Whatever is going on in such stems, at least part of it must be reconstructed to Proto-Kiowa-Tanoan.

\(^{16}\) The negative stem form of intransitive *sô: descend* is *sô yô:.* The transitivized form meaning *lower* is based on the same stem, but shows different inflectional forms, cf. the cognate Tewa and Tiwa verb pairs.
Further support for positing stem-final labiovelar stops will require digging further into verbal morphology than I aim to undertake in this chapter. Outside the alternations involved with such morphology, it is difficult to distinguish potential labiovelar stops from non-labialized velars or from bilabials. I include tentative reconstructions with labiovelar stops in Table 10-17 above, although I cannot yet be sure of the specific identity of these stops. That is, distinguishing between potential stem-final consonants */kʷ/, */qʷ/, */gʷ/, and */ɢʷ/ will necessitate further research, assuming they should be reconstructed at all. I therefore mark these as */Kʷ/ in the reconstructions above.

10.2.2.5 Summary of Stem-Final Velar Stops

The above sections propose that Proto-Kiowa-Tanoan included velar stops in its stem-final consonant inventory. This would include word-final syllable coda position, a situation not found in any of the modern Kiowa-Tanoan languages. The inventory of stem-final velars consisted of at least a plain voiceless back velar */q/ and perhaps also front velar */kʲ/ and voiced */gʲ/. A velar stop of uncertain quality is indicated as */Q/. One or more of the labiovelar stops */qʷ/, */kʷ/, */gʷ/, and */ɢʷ/ may also have been found in stem-final position. These are collectively marked as */Kʷ/ until further analysis distinguishes them further.

Table 10-18 summarizes the reflexes of the reconstructed velars as they appear in the modern Kiowa-Tanoan languages. The uncertainty of the labiovelar stop renders summary a bit messy.
In short, the velars are realized as velar stops (or the appropriate reflex) when followed by a vowel. When falling in coda position, the stops have voiced and lenited to a glide or have disappeared entirely. Labiovelar stops, if they existed as stem-final consonants, are variably preserved with their labial or velar features dominant in different constructions.

10.2.3 Bilabial Consonants

In comparison to velar consonants, the evidence for stem-final bilabial consonants is more sparsely attested: this, despite the fact that bilabials, and not velars, constitute acceptable coda consonants in the modern languages. However, while the evidence may be sparse, it is also relatively clear that stem-final bilabial consonants did exist in the proto-language. Specifically I will argue that there were three stem-final bilabials: */b/, */p/, and */m/.

10.2.3.1 Stem-Final */b/

The strong suggestion of stem-final bilabial consonants in Proto-Kiowa-Tanoan comes from the cognate sets in Table 10-19.
In these sets we find a bilabial nasal in Tiwa and Kiowa. In Tewa this is the ambiguous coda nasal /ŋ/, the only coda nasal permitted in the modern language (but note the potential stem form ˀɑ̨̄mí do which retains the bilabial stop). Importantly, however, Tewa does show a corresponding final consonant. In Towa, where virtually all stem-final consonants have been lost except in certain constructions, we see a stem-final /b/ in the verbs do and tell. We see almost identical reflexes in the cognate set for new in Table 10-20, where the bilabial consonant is often realized intervocalically.

### Table 10-19: Cognate Sets, Stem-Final PKT */b/ (After a Nasal Vowel)

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGṬ</th>
<th>AT</th>
<th>TA</th>
<th>Pl</th>
<th>ST</th>
<th>To</th>
<th>*Pkt</th>
</tr>
</thead>
<tbody>
<tr>
<td>do</td>
<td>ˀʁə̄m·</td>
<td>ˀʁə̄ŋ</td>
<td>ˀʁə̄ŋ</td>
<td>ˀʁə̄m</td>
<td>ˀʁə̄m</td>
<td>ˀʁə̄m</td>
<td>ˀʁə̄·</td>
<td>*(w)ʁə̄b(V)</td>
</tr>
<tr>
<td>earth</td>
<td>dɔ̄m</td>
<td>nəŋ</td>
<td>nəŋ</td>
<td>nəm</td>
<td>nəm</td>
<td>nəm</td>
<td>nʊ̄-pæ</td>
<td>ʰ�b</td>
</tr>
<tr>
<td>porcupine</td>
<td>sɒŋ</td>
<td>ʰsə̄ŋ</td>
<td>ʰsə̄m</td>
<td>ʰsə̄m</td>
<td>ʰsə̄m</td>
<td>ʰsə̄m</td>
<td>ʰt̑és</td>
<td>*(k)pə̄b(?)</td>
</tr>
<tr>
<td>father</td>
<td>ʰdɔ̄m</td>
<td>(ˀdɔ̄b)</td>
<td>ʰtɔ̄m</td>
<td>ʰtə̄m</td>
<td>ʰtə̄m</td>
<td>ʰtə̄m</td>
<td>ʰt̑ō</td>
<td>*(k)pə̄b(?)</td>
</tr>
<tr>
<td>lion</td>
<td>ʰt̑ə̄mdel</td>
<td>ʰkæŋ</td>
<td>kʰʕə̄ŋ</td>
<td>ʰʃə̄m</td>
<td>ʰʃə̄m</td>
<td>ʰʃə̄m</td>
<td>ʰʃə̄və̄</td>
<td>*(k)pə̄b(?)</td>
</tr>
<tr>
<td>tell</td>
<td>ʰʔə̄m</td>
<td>ʰʔə̄m</td>
<td>ʰʔə̄m</td>
<td>ʰʔə̄m</td>
<td>ʰʔə̄m</td>
<td>ʰʔə̄m</td>
<td>ʰʔə̄b(V)</td>
<td>*(ʔ)b(V)</td>
</tr>
<tr>
<td>chase, follow</td>
<td>ʰkæŋ</td>
<td>ʰhə̄m</td>
<td>ʰhə̄m</td>
<td>ʰhə̄m</td>
<td>ʰhə̄m</td>
<td>ʰhə̄m</td>
<td>ʰhə̄b(V)</td>
<td>*(ʔ)b(V)</td>
</tr>
</tbody>
</table>
Table 10-20: Cognate Set, KT *new* (Stem-Final */b/)

<table>
<thead>
<tr>
<th></th>
<th>Kt</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pl</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>new</td>
<td><em>k'om</em> (&gt; <em>k'ø bɔ</em> <em>(?)</em>)</td>
<td>c'ŋ b'iː ; c'ŋ</td>
<td>c'ŋ</td>
<td>c'ŋma</td>
<td>c'ŋma</td>
<td>c'ŋbe</td>
<td>t'i (&gt; t'i miš <em>(?)</em>)</td>
<td>*k'ø b(i)</td>
</tr>
</tbody>
</table>

While the Kiowa cognate is uncertain, here we find a coda */ŋ* in Tewa alternating with intervocalic */b/*. This corresponds to intervocalic */m* in Northern Tiwa and */b* in Southern Tiwa. Towa here shows */m* in its inverse form, where the consonant can surface as an onset.

The frequent realization as a nasal stop above might at first lead to the conclusion that the original coda was */m/*. However, it can be noted that in modern Taos Tiwa and Southern Tiwa, we never find an oral stop */b* as the coda of a syllable with a nasal vowel. Coda */m*, on the other hand, seems to occur following oral vowels and nasal vowels. We find a full complementary distribution in Kiowa: */m* can only occur as the coda following a nasal vowel while its oral bilabial stop coda */p* can only occur following oral vowels. But, if these consonants occur in the onset of a syllable following a nasal vowel, such restrictions no longer apply, cf. the forms Kt d'ø bɔ *father/son-in-law* *(?)*, Kt k'ø bɔ *old* *(?)*, ST c'ŋbe *new*17. We can also add to this Yumitani's (1998) proposed stem for Towa do, ṭø b, where the */b* is realized as */p* in the perfective passive form ṭø p'äe, a regular development of */b* in the language following a falling tone when not being nasalized.

---

17 I am not sure of the status of the final vowel in the Tiwa forms for *new*.  
723
All of these observations suggest that the stem-final consonant here was in fact oral rather than nasal. Specifically, with no clear sign of the voicing having been changed, I propose that the consonant was */b/. This consonant then became nasalized following a nasal vowel across all branches of the family when it fell in coda position. Such nasalization may already have applied before the break-up of Proto-Kiowa-Tanoan, although it was not so thoroughly integrated into the phonology as to cause these */b/ > *[m] codas to undergo the same developments as original PKT */m/ (see below).

There is only a single cognate set I have found to date that could suggest */b/ following an oral vowel. This set is given in Table 10-21.

Table 10-21: Cognate Set, Stem-Final PKT */b/ (After an Oral Vowel)

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>shoot</td>
<td>tʰɔ́pkyay</td>
<td>thoŋ</td>
<td>tʰɔ́ŋ</td>
<td>tʰɔ́m</td>
<td>tʰan</td>
<td>tham</td>
<td>šɑ́pe</td>
<td>tʰɑ́b</td>
</tr>
<tr>
<td>(with an arrow)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here we see the expected nasal reflexes in the Tiwa languages, but a voiceless oral stop /p/ in Kiowa and Towa. Moreover, the vowel correspondences of the stems indicate an oral vowel */a/. If these reflexes illustrate instances of */b/, then we may be able to make the generalization that */b/ became nasalized in coda position following all vowels in Tiwa and Tewa (nasalized */b/ > *[m] > /ŋ/ in Tewa). In Kiowa and Towa, on the other hand, the stem-final */b/ became devoiced.

In the absence of more cognate sets showing the same correspondences, it is difficult to be certain of the occurrence and development of */b/ following oral vowels. The reflexes following nasal vowels, on the other hand, are adequately attested to be
certain that they represent some Proto-Kiowa-Tanoan stem-final bilabial stop. These cases can then be contrasted against the correspondence sets we find in the next section.

10.2.3.2 Stem-Final */p/

Having tentatively identified a coda voiced stop */b/, and given that we did reconstruct a stem-final voiceless velar stops in section 10.2.2 above, it is reasonable to surmise that we may have had a coda voiceless stop in Proto-Kiowa-Tanoan as well. There are two classes of occurrences that suggest an original */p/.

One set of words that appear to show a stem-final */p/ consists of a small number of verbs that bear the transitivizing suffix realized as -i or -e in the modern languages. In the Tiwa languages, the stem-final bilabial is realized as /p/ when followed by this suffix. For those verbs where I have an attested stem without the suffix—when the bilabial is in coda position—it is realized as /b/ (devoiced to /p ~ f/ in Southern Tiwa). The attested set of verbs is given in Table 10-22.

Table 10-22: Cognate Sets, Stem-Final PKT */p/ (Intervocalic)

<table>
<thead>
<tr>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>tear, break</td>
<td>sá· (&gt; sá·l-(IPF)) (?)</td>
<td>sive</td>
<td>siw</td>
<td>liapi ; liab crack (ITR)</td>
<td>liapi ; liap crack (ITR)</td>
<td>še·w (?)</td>
<td>*tip ; *ti pi</td>
</tr>
<tr>
<td>stick</td>
<td>tʰe·be·</td>
<td>cive</td>
<td>li pi (&lt; tlib be stuck)</td>
<td>li pi (&lt; tip be stuck)</td>
<td></td>
<td></td>
<td>*kʲip ; *kʲipi</td>
</tr>
<tr>
<td>massage, rub</td>
<td>mɔnsepkə</td>
<td>mqsúŋ</td>
<td>mɔsupi</td>
<td>mɔsupi</td>
<td>mʲ šipe</td>
<td></td>
<td>*m(q(t)-kʰup(i)</td>
</tr>
</tbody>
</table>

The regular Tewa correspondence to the /pi/ ending is /ve/ or coda /ŋ/ in Rio Grande Tiwa. In Kiowa we see /p/ when the consonant is a coda (massage), but is /b/ when
intervocalic (stick). In Towa we get corresponding /p/ when the consonant is intervocalic in one cognate. Given the intervocalic environment of the /p/ reflex in Tiwa and Towa, it seems reasonable to suggest that the stem-final consonant was */p/. This then became voiced intervocalically in Kiowa and Tewa. It became voiced word-finally in Tiwa, just as we found with the velar stops in section 10.2.2.

Aside from such verbs above, we also find evidence for */p/ in coda position, although perhaps not as much as we do for */b/ word-finally. Indeed, insofar as Taos Tiwa coda /b/ appears to be the primary reflex of */p/ in that branch, coda /b/ is not altogether common in the synchronic languages. The cognate sets in Table 10-23 seem promising, however.

Table 10-23: Cognate Sets, Stem-Final PKT */p/ (Coda)

<table>
<thead>
<tr>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>Ta</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>flower</td>
<td>pávi</td>
<td>pobi</td>
<td>pɔb</td>
<td>pam</td>
<td>pap</td>
<td>pù (&gt; pâpeš (I))</td>
<td>*pap(V)</td>
</tr>
<tr>
<td>chokecherry</td>
<td>ʔávé</td>
<td>ʔib</td>
<td>ʔim</td>
<td></td>
<td></td>
<td></td>
<td>ʔIp(V)</td>
</tr>
<tr>
<td>flute, reed</td>
<td>tɔ́-bá</td>
<td>teŋ</td>
<td>tub</td>
<td></td>
<td></td>
<td></td>
<td>ʔtuNp (?), *tup(V)</td>
</tr>
<tr>
<td>first</td>
<td>tʰm-</td>
<td>c'åŋ-</td>
<td>c'åŋ-</td>
<td>c'ub (&gt; c'upi (ADV))</td>
<td>c'on</td>
<td>č'up (&gt; č'upi (ADV))</td>
<td>*kʷįp</td>
</tr>
<tr>
<td>corn tassel</td>
<td>kqøj</td>
<td>køb-tu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*qap</td>
</tr>
</tbody>
</table>

We find a coda /b/ in flower and chokecherry in Taos Tiwa corresponding to Pt /m/ and ST /b/ (> [p ~ f]). Note that in certain compounds, including personal names, the Picuris stem for flower is pap-, with a coda /p/ instead of /m/. These Tiwa reflexes
correspond to an intervocalic\textsuperscript{18} \(v\) (< \(/b/\) (RGT) or \(/b/\) (AT) in Tewa and an intervocalic \(/p/\) in the Towa inverse stem. For these two stems I have yet to identify a cognate in Kiowa. Nonetheless, the intervocalic \(/p/\) in Towa and the rare compound form \textit{pap-} in Picuris suggests that the stem-final bilabial may have been voiceless */p/.

The cognate sets for \textit{flute}, \textit{first}, and \textit{corn tassel} are all slightly more complicated. We do find indications of a stem-final bilabial stop, realized as coda \(/b/\) in Tiwa alternating with intervocalic \(/p/\), cf. TA \textit{c'ub} \textasciitilde \textit{c'upi} \textit{first}. In the Kiowa word for \textit{flute}, we find a \(/b/\) preceding the basic and inverse suffixes. Watkins (1984: 94-95) analyzes this \(/b/\) as part of the suffix—and indeed the bilabial is stripped away when the stem occurs in compounds in modern Kiowa—but the limited distribution of such bilabial forms suggest it may actually represent a historical stem-final consonant. However, in Kiowa, Tewa, and Towa, we appear to have nasal reflexes at the end of the stems here: Tewa coda \(/\text{ŋ}/\), a nasal vowel in Towa \textit{flute}, and in Kiowa either a nasal coda \(/m/\) (in \textit{first}) or vowel nasalization (in \textit{flute}). Nasalization aside, the vowel correspondence set in \textit{flute} indicates an oral vowel while the vowels of \textit{first} and \textit{tassel} are ambiguous for historical nasality\textsuperscript{19}.

In light of this nasal quality, sometimes in addition to the reflex of what seems to be oral */p/ by analogy with the couple of cases above, we should consider the possibility of a nasal-stop cluster in coda position. Under this hypothesis, an original cluster of */Np/ following an oral vowel is simplified in different ways in the four branches (where */N/ is a nasal stop of uncertain value, although probably homorganic to the following oral stop). In Tiwa the nasal stop was entirely lost, but the voiceless oral stop */p/ is voiced to

\textsuperscript{18} I am not sure of the source for the final vowel in these Tewa words.

\textsuperscript{19} The morpheme \textit{first} looks like it could be related to \textit{face} *\textit{kʷʰi} (via a possible metaphoric chain: \textit{face} \textasciitilde \textit{in front} \textasciitilde \textit{first/lead}). I mention this as a possible avenue of pursuit. I am far from certain of a connection. If it is related, it would suggest the vowel may be oral.
modern /b/ in coda position. The voiceless quality is preserved when the consonant occurs as an onset, as in Taos c'upi first, ST č'upi. In Kiowa and Towa the nasal stop appears to be lost as a consonant, but is retained as vowel nasalization, e.g. Kiowa tó-, Towa tí: flute. The oral stop */p/ has then developed in Kiowa into a nasal stop /m/ in coda position (in t'ɔ́m-first), but is retained as an oral stop in onset position, but voiced intervocalically, as in tó b-á flute (BAS). In Tewa the development is less clear, but the oral vowel reflex /e/ in teŋ flute, reed suggests that, as in Tiwa, the nasal stop was lost entirely. The stop */p/ then became voiced in coda position, like in Tiwa, and then further sonorized to a nasal stop and finally became the neutral coda /ŋ/ (which then phonetically nasalizes the preceding vowel).

Proposing a cluster allows for a quick account in these few cases, but the evidence is not particularly robust. Instead, one could develop an account wherein the single stem-final stop */p/ voiced and sonorized to a nasal stop in each of Kiowa, Tewa, and Towa. This derived nasal stop caused nasalization to the preceding vowel in Kiowa and Towa. The nasal stop is retained in the Kiowa word for first, but was either lost in flute (witness that we do not find a nasal stop /m/ when this morpheme occurs without the basic or inverse suffixes\(^{20}\)), or the nasal became re-oralized as /b/ in onset position before the number suffixes. It is also possible the vowel was originally nasal followed by a single stop /p/, but became denasalized in Tewa and Tiwa early enough to cause the vowels to follow regular sound changes for oral vowels.

\(^{20}\) Under this account, the full increment -bá (inverse -bó́t) would then be a suffix. The initial /b/ could be a coincidence or could have been caused by assimilation to the stem-final bilabial which used to be found on the stem.
10.2.3.3 Stem-Final */m/

Given that the coda inventories of the modern languages include more sonorants than stops, and given typological tendencies on top of that, there was probably a stem-final bilabial nasal */m/ to go with the */b/ and */p/ above. Evidence for original Proto-Kiowa-Tanoan stem-final */m/ comes mostly from Kiowa. It is also spottily attested in Tewa and Towa as /ŋ/ and /n/ respectively, having been neutralized for contrastiveness with other codas. In the Tiwa languages, it has almost entirely disappeared, popping up only occasionally in a few constructions.

Table 10-24 illustrates some correspondence sets that show proposed reflexes of */m/.
Table 10-24: Cognate Sets, Stem-Final PKT */m/

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>secretly</td>
<td>sém-</td>
<td>sæŋ-</td>
<td>tě-</td>
<td>těmɛ</td>
<td>lě-</td>
<td>lěmi</td>
<td>tě-</td>
<td>*t̂im</td>
</tr>
<tr>
<td>blood</td>
<td>ʔóm</td>
<td>ʔηŋ</td>
<td>ʔŋa</td>
<td>ʔa</td>
<td>ʔa</td>
<td>ʔa</td>
<td>ʔi</td>
<td>*wqm</td>
</tr>
<tr>
<td>jackrabbit</td>
<td>k’ɔm-sɔ</td>
<td>kʷ’uŋ</td>
<td>k’ŋ</td>
<td>k’ŋ</td>
<td>k’ŋa</td>
<td>k’ŋa</td>
<td>gó-tve</td>
<td>*qʷ’qm</td>
</tr>
<tr>
<td>wind</td>
<td>góm-</td>
<td>wq̥</td>
<td>wq̥</td>
<td>wq̥</td>
<td>wq̥</td>
<td>k’ŋ</td>
<td>k’ŋ (&gt; k’ŋ n̥s wind)</td>
<td>*gʷqm</td>
</tr>
<tr>
<td>tooth</td>
<td>zém- (COMP) (&gt; zó ’, zèm (I))</td>
<td>wę’</td>
<td>wę’</td>
<td>wę’</td>
<td>wę’</td>
<td>wę’</td>
<td>k’’nô’</td>
<td>*gʷim</td>
</tr>
<tr>
<td>bag, sack</td>
<td>bjm-</td>
<td>mų’</td>
<td>mų’</td>
<td>mų’</td>
<td>mų’</td>
<td>k’-mų’ (I)</td>
<td>*bʷim</td>
<td></td>
</tr>
<tr>
<td>break</td>
<td>tʰɛm</td>
<td>thá’ (&gt; thá’ní (POT))</td>
<td>tʰa’ (&gt; tʰim (INC))</td>
<td>tʰi (INC)</td>
<td>thi (INC)</td>
<td>šó (&gt; šátæ (PASS.PF)) ; šá break (ITR)</td>
<td>*tʰIm</td>
<td></td>
</tr>
</tbody>
</table>

In secretly, blood, and jackrabbit, we find a stem-final /m/ in Kiowa corresponding to /ŋ/ in Tewa while in Towa my records, at least, do not show any reflex, and in Tiwa we find no final consonant at the end of a morpheme. However, note in the verbal form rob, when the transitivizing suffix -i (> -e) is added in Tiwa, a /m/ appears before the suffix.

In bag, wind, tooth, and break, on the other hand, we see /m/ in Kiowa, but no stem-final consonant in any of the other languages in the usual form. The exception is wind, where the Towa inverse form has a stem-final /n/ that shows up intervocally,
kʷí ṇíš wind (i). Also, we find /m/ appearing in certain constructions of Tiwa with the active verb stem tʰí break. In the cognate verb of Tewa, we have a nasal stop /n/ appearing in the potential stem, thû’ní. Conversely, when not the first member of a compound, the /m/ in Kiowa bím- bag and zém- tooth is lost, cf. s̪ó’bí’ quiver, ṭó’bí’ tripe (?), zó’ tooth.

Assuming that the above consonants do represent original stem-final consonants (and not later affixation), the wind set could indicate that Towa underwent a neutralization of its stem-final consonants just as Tewa did. That is, just as Tewa neutralized all of the codas it kept to /ŋ/, Towa may have neutralized at least the nasals */m, n/ to /n/ before codas were lost entirely, only being retained in constructions where they can surface intervocalically. This is hard to say for certain with only one form to go on.

These forms where we find /m/ in Kiowa but where all Tanoan languages lack any stem-final consonant in the citation construction constitute a formal set insofar as all but wind include some reflex of a high front vowel. This could indicate that PKT */m/, preserved in Kiowa, was lost in Tewa following a high vowel and lost in Tiwa and Towa in all environments (except in a few constructions). Alternatively, further investigation of morphology may reveal that only some of the nasal consonants in the above sets are reflexes of */m/. For now, however, I will propose that these examples do indeed represent cases of an original */m/.
10.2.3.4 Kiowa Bilabial Suffixes

One particular complexity involving bilabial consonants is a number of word-final bilabial consonants in Kiowa that do not seem to fall under any of the accounts given above. That is, they have no immediately apparent correspondence in the Tanoan languages. Many of these are synchronically analyzable as suffixes—or at least have been so analyzed—but they are highly lexically specified with no immediately apparent functional or formal motivation. This could suggest that these bilabials represent some kind of original stem-final consonant that only appears in certain constructions. Or, they could indeed be suffixes historically, but their lexical specificity may indicate some interaction with a different stem-final consonant. Several of these bilabial stops may be accounted for as reflexes of labiovelar stops, as discussed in section 10.2.2.4 above. However, this does not necessarily account for all of them.

Already mentioned in brief in chapter 6.1 is the handful of nominal and adjectival forms that end in /p/ (/m/ following a nasal vowel) and are invariant for the basic-inverse number distinction. This would almost suggest that the /p ~ m/ could be part of the stem. Examples of these Kiowa words are given in (1).

(1) Kiowa Invariant Stem-Final /p/

<table>
<thead>
<tr>
<th>Kiowa</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>t'áp</td>
<td>deer, antelope</td>
</tr>
<tr>
<td>pʰóp</td>
<td>spotted</td>
</tr>
<tr>
<td>pʰép</td>
<td>bush</td>
</tr>
<tr>
<td>tʰáp</td>
<td>dry</td>
</tr>
<tr>
<td>k'óp</td>
<td>mountain</td>
</tr>
<tr>
<td>k'yagóp</td>
<td>brain</td>
</tr>
</tbody>
</table>

Note that despite the formal similarity, they are not semantically coherent. The nouns do not all belong to a common noun class when it comes to agreement and indexation.
constructions nor do they show any independent indication of being semantically non-count nouns.

However, their invariability in inflectional morphology aside, we do see lexical pairs involving some of these stems where the /p ~ m/ is stripped away. Sometimes another coda consonant appears in its place—only /l/ attested so far—sometimes the stem is vowel-final. In addition, there is usually a change in the vowel, as mentioned in chapter 6.1, although only the /e/ ~ /o/ is regularly described in the literature (cf. Watkins 1984: 163). Examples of such pairs are given in (2).

(2) Kiowa Vowel Alternations

<table>
<thead>
<tr>
<th>Stem</th>
<th>Meaning</th>
<th>New Stem</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>t'áp</td>
<td>antelope, deer</td>
<td>t'ɔ-</td>
<td>antelope, deer (COMP)</td>
</tr>
<tr>
<td>tʰáp</td>
<td>dry</td>
<td>tʰol</td>
<td>thin, skinny</td>
</tr>
<tr>
<td>pʰép</td>
<td>bush</td>
<td>pʰol</td>
<td>branch</td>
</tr>
<tr>
<td>zép</td>
<td>woman’s breast</td>
<td>zó-</td>
<td>flow (ROOT) (but cf. zép flow (PF))</td>
</tr>
<tr>
<td>sép</td>
<td>rain (N)</td>
<td>só-</td>
<td>descend, rain (ROOT) (cf. sép descend, rain (PF))</td>
</tr>
<tr>
<td>k'óp</td>
<td>mountain</td>
<td>c'ó-</td>
<td>rock</td>
</tr>
<tr>
<td>tʰém-</td>
<td>bone (COMP)</td>
<td>tʰó-se</td>
<td>bone (BAS) (also cf. tʰó-dé leg (BAS))</td>
</tr>
<tr>
<td>zém-</td>
<td>tooth (COMP)</td>
<td>zó-</td>
<td>tooth (BAS) (cf. zém tooth (I))</td>
</tr>
</tbody>
</table>

Such alternations suggest more of an affixal interpretation of the final consonant, although we can note that the Tewa cognate of Kiowa t'áp antelope, deer is t'onŋ antelope, with an invariant coda /ŋ/, suggesting some original stem-final consonant. (No

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21 See chapter 8.6.1.3 for discussion of this pair and the reason for believing them to be related.

22 It is not actually clear if these two stems are directly related. The word c'ó rock is almost certainly cognate with the Tanoan root of the same meaning by regular sound correspondences, e.g. Tewa k'u rock. However, I do leave open the possibility that Kiowa k'óp mountain could be cognate, directly or indirectly, with the Tanoan word for mountain by a complicated relationship between bilabial and (labio)velar consonants, cf. Taos Tiwa p'ian. If this were the case, then there could still be a historical relationship between the rock and mountain morphemes throughout the family.
reflex of a stem-final consonant is seen in Tiwa or Towa that I have found to date, cf. TA t’ɔ. It can be noted also that all of the stems except those that show the /a ~ ɔ/ alternation are reconstructed with a high back vowel */u/ or a labialized stem-initial consonant, realized in the modern Kiowa vowel. This original labialization is obfuscated when the /p/ is present in all but k’óp mountain, a troublesome stem as noted in footnote 22.

Another class of bilabial consonants can be more readily analyzed as suffixes synchronically insofar as they appear only in certain inflectional constructions. They are still lexically restricted, however. There is a suffix -p (-m following a nasal vowel) attached in the perfective of a number of verbs, illustrated in (3).

(3) Kiowa Perfective Bilabial

<table>
<thead>
<tr>
<th>ROOT</th>
<th>PERFECTIVE</th>
<th>ROOT</th>
<th>PERFECTIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>c’ó’</td>
<td>set down (S/D)</td>
<td>c’ép</td>
<td>t’h’</td>
</tr>
<tr>
<td>zó’</td>
<td>flow</td>
<td>z’ép</td>
<td>k’é’</td>
</tr>
<tr>
<td>só’</td>
<td>sew</td>
<td>s’ép</td>
<td>h’é’</td>
</tr>
<tr>
<td>dó’</td>
<td>put in</td>
<td>d’ép</td>
<td>-gú’</td>
</tr>
<tr>
<td>có’</td>
<td>think</td>
<td>c’ép</td>
<td>-gôm</td>
</tr>
</tbody>
</table>

The stem vowel often changes when the perfective suffix is added, but not always. It is verbs of this class that were suggested to have a stem-final labiovelar consonant in section 10.2.2.4. However, if that hypothesis does not pan out, this perfective bilabial consonant will need to be accounted for.

With a different set of verbs, namely those that seem to bear some kind of historical derivational morphology, we find a -p suffix (with a concomitant vowel change) marking the imperfective form (cf. Watkins 1984: 166-167). These are shown in (4).
These instances appear even more suffix-like than the previous. However, the fact that they regularly occur after what appear to be derivational morphemes—the detransitive/passive suffix and what Watkins (1984) calls “thematic suffixes”, which are implied here to be stem-final consonants followed by a vocalic derivational suffix—suggests that they could represent a consonant historically associated with this suffix.

Finally, there is a lexically determined allomorph of the inverse suffix realized as -p ~ -m or as -op. Such examples are given in (5).

(5) Kiowa Inverse /p/

<table>
<thead>
<tr>
<th>BASIC</th>
<th>INVERSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>tʰá dé</td>
<td>match</td>
</tr>
<tr>
<td>sᵃ né</td>
<td>snake</td>
</tr>
<tr>
<td>kʰə lék'yᵃ lᵉ</td>
<td>frog</td>
</tr>
<tr>
<td>pa'bi</td>
<td>male's brother</td>
</tr>
<tr>
<td>p'i</td>
<td>woman's sister</td>
</tr>
</tbody>
</table>

The last two examples illustrate that there are a few inverse forms variably reported as ending in -op or -oy. The /o/ vowel of the apparent suffix seems to replace the vowel found in the basic form, indicating the possibility that the morpheme boundary may not actually be as well-defined as a suffixal analysis implies.

If some or all of these coda bilabial stops in Kiowa can be shown to be historical stem-final consonants rather than affixes—although their appearance may be motivated
by historical affixes that have otherwise disappeared—then one major issue becomes what kind of sound the consonant can be reconstructed as. Some could turn out to be stem-final labiovelar consonants, as mentioned in section 10.2.2.4, where coarticulation of the velar stop and the labialization results in a bilabial stop. Such cases will probably be most apparent in verbs, where the rich morphology creates the environments for alternation. With nouns, it may be more difficult to arrive at solid conclusions.

Aside from these cases of potential labiovelar consonants, some of the above bilabials may be reconstructed as bilabials. One notable gap in the analysis of the preceding sections is the paucity of */b/* following an oral vowel. The one cognate set that does seem to show a reflex of */b/* shows the consonant following a reflex of a low vowel. It was mentioned in the discussion of */m/* that this consonant may have been elided throughout Tanoan when following a high (front) vowel. If this applied to */b/* as well, then some of the above coda bilabials may find no cognate in Tanoan because of such a phonologically induced loss—perhaps the apparently functionless */p/* seen on various nouns and adjectives in (1) above. It is striking that the vowel we see before the bilabial is often */e/*, usually a reflex of PKT */i/*, or */o/*, a reflex of */u/* or of labialization (which obscures the original vowel quality).

Determining the origin of many of these Kiowa coda bilabial stops will require further study of morphology from a comparative-historical perspective. This set of coda consonants probably does constitute the largest set of unresolved stem-final consonants—if they are indeed stem-final—across the Kiowa-Tanoan languages.
10.2.3.5 Summary of Stem-Final Bilabial Stops

Proto-Kiowa-Tanoan stem-final bilabial consonants leave behind reflexes that are fewer and farther between than the velar consonants of section 10.2.2 or the alveolar consonants to be discussed in section 10.2.4. While it may simply be a distributional quirk of the family that stem-final bilabial consonants are less common than others, resolution of Kiowa stem-final and/or morphological /p/ and /m/ will likely provide evidence of more occurrences. That issue notwithstanding, we can tentatively propose that */b/, */p/, and */m/ were all found in stem-final position in Proto-Kiowa-Tanoan.

Table 10-25 summarizes the reflexes of these reconstructed bilabial consonants in the modern languages.

Table 10-25: Summary of Stem-Final Bilabial Correspondences

<table>
<thead>
<tr>
<th>*PKT</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>*b</td>
<td>ṣm</td>
<td>ṣŋ</td>
<td>ṣŋ</td>
<td>ṣm</td>
<td>ṣm</td>
<td>ṣm</td>
<td>b ~ m</td>
</tr>
<tr>
<td>*p</td>
<td>ṣp</td>
<td>ṣŋ</td>
<td>ṣŋ</td>
<td>ṣm</td>
<td>ṣm</td>
<td>ṣm</td>
<td>ṣp</td>
</tr>
<tr>
<td>*m</td>
<td>m</td>
<td>ṣŋ</td>
<td>ṣŋ</td>
<td>ṣm</td>
<td>ṣm</td>
<td>ṣm</td>
<td>Ø</td>
</tr>
</tbody>
</table>

The voiced bilabial stop */b/ became a nasal stop in all branches when falling in coda position after a nasal vowel and after all vowels in Tewa and Tiwa. In Kiowa and Towa, it may have instead devoiced in coda position following an oral vowel. The voiceless bilabial stop appears to have become voiced in coda position across all branches, but is preserved as voiceless when intervocalic in Tiwa and Towa. Finally, nasal bilabial stop */m/ is only preserved as such in Kiowa. It is sometimes retained as coda /ŋ/ in Tewa, perhaps when following low vowels, but is elided following high vowels in Tewa and in all positions in Tiwa and Towa.
10.2.4 Alveolar Consonants

Compared to the velar and bilabial consonants above, we find far more evidence for stem-final alveolar consonants in Proto-Kiowa-Tanoan. The problem here is that there are numerous correspondence sets where at least one modern Kiowa-Tanoan language shows an alveolar reflex, making it difficult to determine what each of these sets actually reflects. But, having considered the patterns of velar and bilabial stem-final consonants, we can begin to make sense of this at first dizzying array of correspondences.

Given the reconstructions of the previous sections, we can hypothesize that the alveolar codas consisted of at least a voiceless alveolar */t/, a voiced alveolar */d/, and a nasal stop */n/. Considering that we find reflexes of a stem-final lateral consonant /l/ across all four branches of the family (/ɾ/ in Southern Tiwa)—a consonant that does not occur stem-initially and thus is not reconstructed in chapter 0—we can also suspect that we may have to reconstruct a lateral */l/ in Proto-Kiowa-Tanoan, although this segment does appear to be closely related to */d/ and will be addressed alongside the voiced stop.

10.2.4.1 Stem-Final */t/

We saw in previous sections that voiceless stops */p/, */kʲ/, and */q/ appear to have become voiced when in coda position, the velars further leniting across all branches. These stops sonorized to nasals in Tewa and sometimes also Kiowa. The voiceless stops still surfaced as such, however, when in onset position followed by a derivational morpheme, although they were then prone to intervocalic voicing in Kiowa and Tewa.
If the above is generalized across the voiceless stops at these other places of articulation, then we might expect to see similar reflexes for a proposed */t/*. Table 10-26 demonstrates that this is indeed what we appear to find in the few cognates so far found.

Table 10-26: Cognate Sets, Stem-Final PKT */t/

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>jaw, chin</td>
<td>ḥl</td>
<td>ʔoŋ</td>
<td>ʔd</td>
<td>ʔad</td>
<td>ʔad ~ ʔaŋ</td>
<td>ʔad ~ ʔaθ</td>
<td>ʔe·t-e-ʃ</td>
<td>ʔaŋ</td>
</tr>
<tr>
<td>enter</td>
<td>c’ú ~ c’úŋ (POT), c’úde enter</td>
<td>c’úŋ</td>
<td>c’iad (NEG), ciad (INC) enter; c’iti bring in</td>
<td>c’in enter; c’ite bring in</td>
<td>č’iat (INC) enter; č’iati bring in</td>
<td>t’ό</td>
<td>*kʷit (&gt; *kʷit); *kʷiți</td>
<td></td>
</tr>
<tr>
<td>backside</td>
<td>t’él</td>
<td>t’ú ·</td>
<td>t’ú ·</td>
<td>t’ud buttocks, behind</td>
<td>t’on behind</td>
<td></td>
<td>*k’út</td>
<td></td>
</tr>
<tr>
<td>dipper</td>
<td>k’éré</td>
<td>k’utu</td>
<td>k’olo</td>
<td>k’uru</td>
<td></td>
<td>*q’utu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hand</td>
<td>mën</td>
<td>mŋ</td>
<td>mŋ</td>
<td>mën</td>
<td>män</td>
<td>män</td>
<td>mute hand; mû finger</td>
<td>*mŋt(V)</td>
</tr>
<tr>
<td>hit</td>
<td>xʷéri (&gt; xʷə (IPF), xʷéni (POT), xʷgri (INC))</td>
<td>kʷk̑di</td>
<td>xʷiad</td>
<td>xʷiat (&gt; xʷiate (PASS))</td>
<td></td>
<td></td>
<td>*qʷi(i)</td>
<td></td>
</tr>
</tbody>
</table>

We see here that a coda voiced stop /d/ in Tiwa (> /n/ in Picuris Tiwa and [θ] in Southern Tiwa) corresponds to a coda nasal stop /ŋ/ in Tewa (except in back), a lateral /l/ in
Kiowa\textsuperscript{23}, and a voiceless stop /t/ in Towa (when preserved intervocally, otherwise elided in coda position). When a derivational suffix occurs, as in \textit{bring in}, we find an intervocalic voiceless stop /t/ in Tiwa corresponding to an intervocalic voiced stop /d/ in Tewa (> [r] in Rio Grande Tewa). Unfortunately Kiowa and Towa cognates to \textit{bring in} have yet to be identified. Similarly, in the cognate set for \textit{hit}, we see a Tewa /d \sim r/ corresponding to a Tiwa /d/, which is realized as /t/ when intervocalic. The vowel correspondences of this set are anomalous, however, so it is not certain if these stems are actually cognate.

Following a nasal vowel, the \textit{hand} cognate set suggests that */t/ not only voices, but also becomes nasal itself in Kiowa, Tewa, and Tiwa. The Towa cognate for hand, \textit{mǻte}, suggests that the final alveolar was */t/ due to the intervocalic voiceless stop we find here. Unfortunately I have not been able to find any other similar cases so far.

We also find one instance of an intervocalic */t/ that appears to be stem-internal. In the word for \textit{dipper}, Taos Tiwa shows an intervocalic /t/ corresponding to liquids in the other two Tiwa languages. The Tewa correspondence, however, is the expected voiced stop /d/, which becomes a flap intervocally. Cognates of comparable form have not so far been forthcoming.

Seemingly related to the */t/ suggested by the above cognate sets, we find a small number of Tiwa and Towa stems that do not show a stem-final consonant in most forms, but we find a /t/ in certain constructions. Such stems are given in Table 10-27.

\textsuperscript{23} But recall from chapter 6.1 that in coda position, the Kiowa /l/ is pronounced as an affricate [dl], perhaps partially retaining its origin as a stop.
In the Tiwa languages, these verb stems are vowel-final in active forms, but in the passive construction and sometimes in the negative construction, a /t/ appears before the vocalic suffix. The same is found in the Towa cognate of *kill*. I have found no correspondence to this /t/ in the Tewa languages as of yet. In Kiowa, however, we regularly find a stem-final alveolar consonant in the perfective (as well as other constructions). In *kill* this is the regularly expected /l/ while the /n/ in *find* is a regular allophone of an alveolar consonant following a nasal vowel. In *tell* we also find /l/, although this belongs to a class of verbs in Kiowa which harden the lateral to a voiceless stop /t/ when a coda in the perfective.

I do not have an explanation for why these alveolar stops appear less consistently than in the previous cognate sets. If it is to be reconstructed as a distinct consonant, I do not know what the identity of this consonant might be. As such, I reconstruct the consonant as */T/*, the capitalization indicating the uncertain nature of the segment until further study can be done.
The evidence for a reconstructed voiceless alveolar stop */t/ is shaky, but we
definitely do find stem-final alveolar stops that require explanation. Proposing that the
voiceless alveolar stop underwent voicing (and sonorization) in coda position does
provide parsimony with the behavior of the other reconstructed voiceless stops above.
There are cases that do not fit the regular pattern, namely the proposed stop may have
elided in word-final position under certain conditions that have yet to be determined.

Having proposed a voiceless stop, the next section will explore the possibility of a
voiced oral stop to complement it.

10.2.4.2 Stem-Final */d/ and */l/

We have seen that voiced stops in coda position undergo lenition processes just as
the voiceless stops do, but to different results. In Tewa and Tiwa, the result is always a
nasal consonant by a process of sonorization. Thus, for a proposed */d/ we would expect
/ŋ/ in Tewa and /n/ in Tiwa. In Kiowa the result was a nasal stop only after nasal vowels,
so we should expect /n/ as a reflex of */d/ sometimes. Following oral vowels, */b/ in
section 10.2.3.1 had become Kiowa /p/ in coda position, so we would expect to find /t/
coming from */d/. In actuality, however, we find /l/ to be the more common reflex, /t/
only occurring in certain constructions (namely the perfective aspect of verbs). Insofar as
can be determined for Towa, lacking codas as it does, we seem to find a voiceless stop
following oral vowels and a voiced stop following a nasal vowel, which is then nasalized
when also followed by a nasal vowel.

Table 10-28 illustrates cognate sets that appear to reflect PKT */d/.
Table 10-28: Cognate Sets, Stem-Final PKT */d/ (Coda)

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>man</td>
<td>t'əl-i'</td>
<td>seŋ</td>
<td>seŋ</td>
<td>sian</td>
<td>sin</td>
<td>sian</td>
<td>šô' (&gt; šó teš (I))</td>
<td>*kʷid</td>
</tr>
<tr>
<td>mountain</td>
<td>mə̣-p'āl</td>
<td>p'iŋ</td>
<td>p'iŋ</td>
<td>p'ian</td>
<td>p'in</td>
<td>p'ien</td>
<td>p'ë (&gt; p'ëtëš (I))</td>
<td>*p'id</td>
</tr>
<tr>
<td>buffalo</td>
<td>kəl</td>
<td>kə̣</td>
<td>kə̣n</td>
<td>kam</td>
<td>kan</td>
<td>*qad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>foot</td>
<td>ʔə̣n-só</td>
<td>ʔə̣ŋ</td>
<td>ʔə̣ŋ</td>
<td>ʔə̣n</td>
<td>ʔə̣n</td>
<td>ʔə̣n</td>
<td>ʔə̣n ( &gt; ʔə̣ t'æ (I))</td>
<td>*qad(V)</td>
</tr>
</tbody>
</table>

In these sets we do regularly find a nasal stop in Tewa and Tiwa corresponding to /l/ following an oral vowel and /n/ following a nasal vowel in Kiowa. In Towa we see an intervocalic /t/ in the inverse following an oral stem vowel (an intervocalic /d/ never appears in inverse forms as such). In foot nasal spreading causes the vowel following the stop to be nasalized leading to a pronunciation as [n] in the basic form. The vowel change and the falling tone lead the stop to be realized as an ejective /t'/ in the inverse form.

One thing we can notice in the above set is that there are no verbs. This could simply be an accidental gap coming from the limited number of forms I have identified with the above correspondences. With their elaborated morphology as compared to other categories, verbs more readily fall into the context for the stem-final consonant to occur intervocally. However, we do not readily find intervocalic /d/, /t/, or /n/ in the family reflecting */d/; aside from the limited Towa /t/ reflexes. What we do find plenty of in all of the branches, on the other hand, is /l/, an alveolar continuant. These /l/’s do not always line up across all branches, but there is the suggestion that some of these /l/’s represent...
*/d/. Other of these /l/'s may reflect an original PKT */l/. This is where things become muddied.

There are a number of stems where almost all branches (where we have cognates) show a lateral correspondence, taking into account Towa's loss of codas and the nasalization of coda consonants following nasal vowels in Kiowa. Tewa sometimes lacks a lateral correspondence. Table 10-29 demonstrates such correspondences.

Table 10-29: Cognate Sets, Stem-Final PKT */d/ (Intervocalic)

<table>
<thead>
<tr>
<th></th>
<th>Kí</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>eat</td>
<td>k'ɔ́lɛ́ ; k'yótkó devoteur</td>
<td>k'ɔ (&gt; k'o (IPF))</td>
<td>k'ɔ́lo chew</td>
<td>k'al</td>
<td>k'al</td>
<td>k'ar</td>
<td>t'élé (&gt; séle (INC))</td>
<td>*ki'udV</td>
</tr>
<tr>
<td>fly (v)</td>
<td>šųŋ</td>
<td>kʷbóli</td>
<td>tʰiəl-</td>
<td>tʰiar-</td>
<td>šó lo-</td>
<td>*kʰadV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bring</td>
<td>kɔ́n</td>
<td>kʒŋ</td>
<td>kaɺ</td>
<td>kəl</td>
<td>kaɺ</td>
<td>kir</td>
<td>kí</td>
<td>*qʷdV</td>
</tr>
<tr>
<td>sew</td>
<td>pəŋ</td>
<td>pəl</td>
<td>pər</td>
<td>pəni</td>
<td>*pídV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dig</td>
<td>hɔ́n (&gt; tʰɔ́n (INC))</td>
<td>yəq' ~ šəq'</td>
<td>kʰɔ́lɛ́</td>
<td>wɛ́l (&gt; xʷɛ́l (INC))</td>
<td>wɛ́l (&gt; xʷɛ́l (INC))</td>
<td>wirá</td>
<td>hó'le</td>
<td>*hʷidV (&gt; *qʰidV)</td>
</tr>
<tr>
<td>aspen</td>
<td>nq'ŋa</td>
<td>nq'la</td>
<td>nəl</td>
<td>nəl</td>
<td></td>
<td></td>
<td></td>
<td>*dáda</td>
</tr>
<tr>
<td>hot</td>
<td>sál</td>
<td>sí-p'o</td>
<td>lil- ; lila-mɔ́ be hot</td>
<td>lèl-</td>
<td>lir-</td>
<td>tʰiəl be hot to touch</td>
<td>*tidV</td>
<td></td>
</tr>
<tr>
<td>jump, throw</td>
<td>ōt (&lt; 'ɔ́l (ROOT)) drop, fall</td>
<td>əe'</td>
<td>əe le</td>
<td>əole</td>
<td>əuri carry up</td>
<td></td>
<td></td>
<td>*udV</td>
</tr>
<tr>
<td>sick</td>
<td>hóɺ</td>
<td>he'</td>
<td>he'</td>
<td>hιl</td>
<td>hil</td>
<td>hir</td>
<td>fó'</td>
<td>hʷadV</td>
</tr>
<tr>
<td>spruce, evergreen</td>
<td>k'ol</td>
<td>c'e'</td>
<td>c'ele</td>
<td></td>
<td>k'ol-</td>
<td></td>
<td></td>
<td>*kʰidV</td>
</tr>
<tr>
<td>chicken, fowl</td>
<td>tʰá kil (prairie chicken (?))</td>
<td>dí</td>
<td>ni li</td>
<td>lilu</td>
<td>lelo</td>
<td>diru</td>
<td>délı</td>
<td>*didu</td>
</tr>
</tbody>
</table>
In Arizona Tewa and Tiwa, these sets present us with a lateral /l/ following both oral and nasal vowels. The one salient exception is bring, where no lateral is found in Arizona Tewa. In Kiowa and Towa the reflex is /l/ after an oral vowel and /n/ after a nasal vowel, when a consonant shows itself in Towa at all. Note that in stem citation forms, these laterals may appear morpheme-finally or intervocally from a synchronic perspective. The set also contains nouns, active verbs, and stative properties, indicating multiple formal morphological environments.

In another correspondence set, we see a lateral in only certain constructions in Tanoan languages. No consonant appears in citation form, however. When a consonant does appear (in Tiwa) it is a lateral or rhotic reflex.

Table 10-30: Cognate Sets, Stem-Final PKT */l/ (Intervocalic) I

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>breath</td>
<td>hɔ́ˑ</td>
<td>hɔ́ˑ</td>
<td>hɔ́ˑ breath ; hɔ́lia breathe</td>
<td>hɔ́lia breathe</td>
<td>hɔ́ breath ; hɔ́re breathe</td>
<td>hɔ́l-hise</td>
<td>*hɔ́ ; *hɔ́lV</td>
</tr>
<tr>
<td></td>
<td>swim,</td>
<td>kɔ́-</td>
<td>ʔɔ́ (&gt; kɔ́ (INC))</td>
<td>ʔa (&gt; ʔalik (NEG), kə (INC))</td>
<td>ʔa (&gt; ʔalik (PASS), ka (INC))</td>
<td>ʔe (&gt; ʔe-tɛ́ (PASS.PF), kɛ́ (INC))</td>
<td>*ʔalV (&gt; *qa)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>bathe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>day</td>
<td>kʰi-dá</td>
<td>thɑ́</td>
<td>tʰaw</td>
<td>tʰi</td>
<td>tʰi</td>
<td>thi</td>
<td>ʃò</td>
<td>*kʰlIV</td>
</tr>
<tr>
<td></td>
<td>(BAS) (&lt; kʰi- (ROOT))</td>
<td>day ; ʃəŋ sun</td>
<td>day ; ʃɨŋ sun</td>
<td>(&gt; tʰili counting form)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The lateral in Tiwa only shows up in limited morphological constructions. Insofar as correspondences can be established, we do not find any particular regularity, which could suggest such /l/s have multiple sources.

24 This may indeed indicate that this item belongs with a different correspondence set. No other regular ones are comparable so I leave it here for now.
We also have stems where we find a lateral in (Arizona) Tewa and sometimes a consonant in Kiowa, but not in Tiwa or Towa, as we see in Table 10-31.

Table 10-31: Cognate Sets, Stem-Final PKT */l/ (Intervocalic) II

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>breast</td>
<td>zép</td>
<td>wá·</td>
<td>wá·la</td>
<td>wi</td>
<td>wi</td>
<td>wi</td>
<td>kʷô·</td>
<td>*gʷIIV</td>
</tr>
<tr>
<td>road</td>
<td>ṭn</td>
<td>p̥'ô·</td>
<td>p̥'o·lo</td>
<td>p̥'i̥</td>
<td>p̥'i̥</td>
<td>p̥'e·</td>
<td>p̥'ô·</td>
<td>*p̥'IIV</td>
</tr>
<tr>
<td>dirty</td>
<td>kh̥'i·</td>
<td>kʰa·la</td>
<td>xi̥</td>
<td>xi̥</td>
<td>xi̥</td>
<td>kh̥</td>
<td>h̥ô·</td>
<td>*qʰIIV</td>
</tr>
</tbody>
</table>
| kernel| khe· (?) | kʰi̥li· (?) | xi | xi | khi | *qʰIIV (?)

No consonant has been found to occur in any constructions following these stems in Tiwa and Towa. In Kiowa we find a nasal /n/ corresponding to the /l/ in Tewa following a nasal vowel in the road cognate set25. In the breast set, on the other hand, we find Kiowa /p/. A cognate has not yet been found in Kiowa for dirty while kernel is a questionable set on the whole anyway.

Finally, we find cases where Kiowa has a stem-final /l/ corresponding to a glide in Tiwa and to a consonant or nothing in Tewa. Such sets are presented in Table 10-32.

---

25 This stem appears to have denasalized throughout Tewa.
We see in *stand upright* and *wing* that the Kiowa /l/ can correspond to Tewa /ŋ/ and to Towa /t/. In *onion* we get an apparent correspondence with /w/ in Tiwa and Towa, but no consonant correspondence in these languages in most of the rest of these forms. Note that the Kiowa /l/ alternates with /t/ following a falling tone vowel in nominal inverse forms.

The devoicing may actually be associated with the laryngealization caused by the falling tone (Watkins 1984), but it does illustrate an alternation with a stop.

The outstanding issue is how to deal with all of these instances of laterals. A proposal was made for the reflexes of */d/ in coda position in Table 10-28 above, ruling out such a segment as the source for these other sets. However, we still have */d/ in non-

---

26 It is not at all certain that the forms with these meanings are related. The words are homophonous in Rio Grande Tewa and there are suggestive features in the lexical pairs in Arizona Tewa and Northern Tiwa that indicate they could be related.
coda position and a possible PKT segment */l/ in either intervocalic or stem-final position to work with. Additional stem-final alveolar consonants could also be posited, but there is a question of their actual articulatory quality. Another feature to work with from previous sections is a process of lenition and the relative weakness of sonorants. Namely, Kiowa tends to preserve sonorants better than the Tanoan languages.

With these observations, a tentative proposal takes shape. An original lateral */l/ in coda position is retained as such in Kiowa but is typically lost in the Tanoan languages (Table 10-32). It may be sometimes be preserved as /w/ in Tiwa and as /η/ in Tewa, although the conditions for these preservations are not yet clear. The Tiwa /w/ may be attributable to an environment following a stem-initial labialized consonant, but this is far from certain.

When */l/ was intervocalic it may have been preserved as such only in Arizona Tewa (Table 10-31). In the other languages, the final vowel has elided and subsequently the lateral was lost in coda position, except in Kiowa. In Kiowa the consonant is retained as a coda, nasalizing to /n/ following a nasal vowel. The source of /p/ in *zép breast is uncertain. This same intervocalic */l/ may also be what we see reappearing in certain morphological constructions in Table 10-30, although more is probably going on in these cases to explain the lack of regularity. Note in the Arizona Tewa word *tʰaw day, the purported final vowel appears to have elided, leading to the same lenition to a glide that we find in Tiwa.

Finally, when */d/ was intervocalic, it lenited to an allophonic pronunciation *[l] (Table 10-29). This consonant was then preserved as final vowels eroded away, even though it would merge with the original lateral */l/ across all branches.
This account is highly speculative at the moment. Resolving these stem-final alveolar consonants will involve both a better understanding of suffixal morphology and an analysis of possible stem-final vowels. Significantly, the above proposal necessitates reconstructing stems as CVCV forms without much evidence on which to base a reconstruction of a final vowel. However, without either positing a large number of consonants in coda position or claiming that all “irregular” final consonants must belong to some (unidentified) bound morphology, this proposal seems the most parsimonious with the analysis of stem-final consonants that has been developed up until this point.

Implicating stem-final vowels as it does, this proposal would indicate that as Proto-Kiowa-Tanoan was breaking up into its daughter languages, sound change was leading to a reanalysis of many stems from being CVCV to being CV. This could very well explain why we must reconstruct a large number of stem-final consonants compared to the actual inventory that we see in the modern languages. It is not that Proto-Kiowa-Tanoan (or Pre-Proto-Kiowa-Tanoan) necessarily had a more complex syllable structure. Instead, these stem-final consonants were actually simple word-internal syllable onsets. As the final vowels eroded away, the consonants now falling in coda position must then have begun merging and themselves eliding, such contrasts being historically illicit in the family. While a promising avenue of pursuit, this proposal must await future investigation.

10.2.4.3 Stem-Final */n/

In section 10.2.3.3 above, it was implicated that Kiowa showed the greatest preservation of coda nasal */m/ of all of the Kiowa-Tanoan languages. It has also already
been noted that Kiowa shows a neutralization in coda consonants: there is a one-to-one correlation between nasal codas and nasal vowels and between oral codas and oral vowels. Considering this and the confusion of alveolar consonants we saw above, it is difficult to find any traces of an original PKT nasal alveolar coda */n/. There are some suggestive, if ambiguous, cases to mention. Such instances are given in Table 10-33.

Table 10-33: Cognate Sets, Stem-Final PKT */n/

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>pine</td>
<td>zōn</td>
<td>wæŋ</td>
<td>wɛ</td>
<td>wɛ</td>
<td>wį-la</td>
<td>kʷɛ́ˑ</td>
<td>*cʷɛ́ˑ</td>
<td></td>
</tr>
<tr>
<td>tail</td>
<td>tʰόn</td>
<td>xʷɛŋ</td>
<td>xʷɛ</td>
<td>xʷɛ</td>
<td>khwí</td>
<td>hí</td>
<td>*qʷí</td>
<td></td>
</tr>
<tr>
<td>flour</td>
<td>khæŋ</td>
<td>kʰɛŋ</td>
<td>tʰi</td>
<td>tʰi</td>
<td>tʰia</td>
<td>hí</td>
<td>*kʰí</td>
<td></td>
</tr>
<tr>
<td>five</td>
<td>tʰɔntɔ</td>
<td>pʰʼuŋũ</td>
<td>pʰʼuŋũ</td>
<td>pʰʼanũ</td>
<td>pʰʼandoa</td>
<td>pʰʼtʼö</td>
<td>*pʰʼŋkʷi</td>
<td></td>
</tr>
<tr>
<td>cloud</td>
<td>pʰʼn̥n</td>
<td>pʰɛ</td>
<td>pʰɛ</td>
<td>phì</td>
<td>φɛ́ˑ</td>
<td>*pʰjang</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In these cases a stem-final consonant is found only in Kiowa and Tewa. The /n/ is preserved in all but Towa in the five set, but this may be associated with the onset consonant of the second syllable in some way. The ambiguity of these cases comes from the fact that, since these nasal stops must follow a nasal vowel in Kiowa, these correspondences are actually almost identical to those in Table 10-32 above, which were reconstructed as stem-final */l/. The main difference is that we have /ŋ/ regularly occurring in Tewa here.

There almost certainly was a stem-final */n/ in Proto-Kiowa-Tanoan to complement the bilabial */m/ and the assortment of alveolar consonants of the previous two sections. Digging it out to distinguish it from reflexes of */t/, */d/, and */l/ will, however, be more of a challenge than isolating the bilabial nasal stop. I will leave this matter unresolved until further study of the stem-final alveolar consonants—including the proposal of disyllabic forms—can be undertaken.

750
10.2.4.4 Summary of Stem-Final Alveolar Stops

It is fairly certain that Proto-Kiowa-Tanoan possessed stem-final alveolar consonants. Reflexes of such consonants are scattered amongst numerous correspondence sets, making it difficult to arrive at an account of all of these possibilities. However, we can conjecture that there were at least four alveolar stem-final consonants: voiceless */t/, voiced */d/, lateral */l/, and nasal */n/.

In trying to account for all of the alveolar reflexes we see in the modern language, there is the suggestion that there may have been more CVCV forms that synchronically occur. The consonant preceding the final vowel in such structures has become the coda after the vowel elided. The consonant may have thence elided as well. The proposed major reflexes of alveolar stem-final consonants appear in Table 10-34.

Table 10-34: Summary of Stem-Final PKT Alveolar Consonants

<table>
<thead>
<tr>
<th>*PKT</th>
<th>Ḳl</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>*t</td>
<td>l~n</td>
<td>η</td>
<td>η</td>
<td>d~t</td>
<td>n~t</td>
<td>d~t</td>
<td>t</td>
</tr>
<tr>
<td>*d</td>
<td>l~n (V_#)</td>
<td>η</td>
<td>η</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>t</td>
</tr>
<tr>
<td></td>
<td>l~n (V_V)</td>
<td></td>
<td>1 (V_V)</td>
<td>1 (V_V)</td>
<td>1 (V_V)</td>
<td>r (V_V)</td>
<td>l~n (V_V)</td>
</tr>
<tr>
<td>*l</td>
<td>l~n (V_#)</td>
<td>η~Ø (V_#)</td>
<td>1</td>
<td>Ø~w</td>
<td>Ø~w</td>
<td>Ø~w</td>
<td>Ø</td>
</tr>
<tr>
<td></td>
<td>l~Ø</td>
<td>Ø</td>
<td>1 (V_V)</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
<tr>
<td>*n</td>
<td>n</td>
<td>η~n</td>
<td>η~n</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
</tbody>
</table>

The voiceless stop became voiced in coda position, even sonorizing in Kiowa. It resurfaces as a voiceless stop when intervocalic. The voiced stop is realized as a nasal stop in stem-final position in Tewa and Tiwa and otherwise merges with the voiceless stop in Kiowa and Towa. When historically intervocalic, it developed into a lateral,
preserved as such in the modern languages. The lateral was preserved primarily in Kiowa and to a lesser degree in the Tewa languages. It may be somewhat reflected in Tiwa as a glide /w/. The nasal stop is also largely attested only in Kiowa and Tewa. Also, all of the alveolar stops are pronounced as nasal stops following a nasal vowel in Kiowa.

Stem-final alveolar consonants require much more study to piece together their history and development. The above description attempts to account for the most regular patterns, but there is undoubtedly more to the story than what I have presented.

10.2.5 Glides

Of all of the potential codas reconstructed in this chapter, the evidence for glides is at its most minimal, just as the evidence for glides in stem-initial position is (cf. chapter 9.8). In all four branches of the family we see synchronic glides that appear in stem-final position. But, as seen in the preceding sections, many of these seem to be attributable to lenition of historical velar and alveolar segments. Data unambiguously indicating the continuation of any historical */y/ or */w/ codas is thus hard to come by.

Table 10-35 demonstrates cognate sets that show a palatal glide in the modern languages but do not necessarily show the correspondences associated with any of the above sets that result in glides.

Table 10-35: Cognate Sets, Stem-Final PKT */y/ ?

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
<th>*P KT</th>
</tr>
</thead>
<tbody>
<tr>
<td>fire</td>
<td><strong>pʰyá-</strong> (comp)</td>
<td>pha’</td>
<td>pʰa’</td>
<td><strong>pʰa</strong></td>
<td>pʰia</td>
<td>pʰe</td>
<td>φo’</td>
<td>*pʰi-y? (V)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>fire ;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pʰayi</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>burn</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fly (n.)</td>
<td>phuu</td>
<td>pʰuyu</td>
<td>pʰyu</td>
<td>pʰo’</td>
<td>pʰy</td>
<td>φo’</td>
<td>*pʰu’u</td>
<td></td>
</tr>
</tbody>
</table>
The stem *fire* does not have a stem-final consonant in any of the languages in its citation form, notwithstanding one of the terms for *fire* in Towa. However, in at least one compound form in Kiowa, *phyáysón kindling*, a morpheme-final glide appears. Correspondingly when a derivational verbalizing suffix is added to the stem in Tiwa, we get an intervocalic /y/, as in Taos Tiwa *pʰayi burn*. The Southern Tiwa cognate to this is *pheči*, however, where we see the same correspondence as between reflexes of */gʲ/* in section 9.4.3.2. However, this correspondence does not extend outside of Tiwa, so this consonant may in fact represent a stem-final */y/*. Also, there are two similar words for *fire* in Towa, although I do not know the difference in usage. Importantly, one of them shows an intervocalic /y/ while the other, the shorter, has no consonant. This suggests a more archaic form, *φáyá*, and a more innovative and reduced form, *φëː*. 

In the *fly* cognate set, there is an intervocalic /y/ across all Tewa and Tiwa varieties. This is unusual within Tiwa because Taos Tiwa /y/ usually has a correspondence of /c, č/ in the other two Tiwa varieties. Most instances of those /y/’s, however, seem to descend from */gʲ/*. The motivation for the difference in this set could very well be that the /y/ here actually does descend from PKT */y/*. 

Stem-final */w/* is less apparent. Instances of word-internal and/or stem-final labiovelar glides /w/ are seen in Tewa, Tiwa, and Towa. Correspondences, however, have not yet provided a coherent picture among these. Many appear to be the products of lenition from labiovelar stops (section 10.2.2.4), the alveolar lateral approximant (section 10.2.4.2), and perhaps also bilabial stops. Since modern palatal glides beyond those mentioned above also result from such lenition processes, determining actual original glides will have to await further study beyond the proposals put forth in this dissertation.
10.3 Conclusion

This chapter has presented an analysis that takes the first steps towards determining the inventory of stem-final consonants and the modern reflexes from which we can identify them. As this is just a first step, there is much that is still not understood. In particular it remains to be determined what consonants and modern phonotactic structures reflect actual codas and what reflect intervocalic stem-final consonants. If we begin finding more and more evidence for the latter, we will have to change our picture of Kiowa-Tanoan from having a predominately CVC base form to a predominant CVCV form.

Analyzing and determining stem-final consonants will ultimately prove crucial to reconstructing Kiowa-Tanoan morphology, most of which is suffixal. It is via this morphology that stem-final consonants appear and disappear. Only by tracking the occurrence of these consonants can we seriously approach and tackle this suffixal morphology.

With the preceding three chapters in hand, something of an understanding of sound change in Kiowa-Tanoan under our belt, we can turn to the next topic. Part III of this dissertation will analyze the formal and functional properties of a particular domain of grammar: the pronominal indexation proclitics. Chapter 0 will pick up the topic of sound correspondences and provide the formal reconstruction of these grammaticalized elements, both building on and adding to our understanding of Kiowa-Tanoan phonology that has been described in Part II.
Part III: Grammatical Reconstruction—Pronominal Indexation

Proclitics


11 Synchronic Pronominal Indexation Systems

Having spent Part II working through the formal correspondences that will allow us to identify cognates with a fair degree of reliability, Part III will explore developments within Kiowa-Tanoan grammar. This exploration will attempt to tackle one of the most immediately daunting morphosyntactic features of the family: the large array of synchronically portmanteau verbal proclitics that index from one to three clausal arguments. Each of the languages has such a set and they all show very similar patterns in their general organization, suggesting something of the original system that they have inherited from Proto-Kiowa-Tanoan. The number of differences between the languages is not insignificant, however, and the individual correspondences indicate some interesting reanalyses and reshuffling within the systems between the time of the ancestral language and the modern state of affairs. Part III will thus attempt to account for these developments and reconstruct what the original Proto-Kiowa-Tanoan pronominal indexation proclitic system may have been like. As the grammatical sketch of chapter 5 will have suggested, analyzing the indexation system will also require addressing something of the noun class and number marking system and the suffixal voice and valence marking. Because these topics require further detailed study in their own right, I only take on those formal and/or functional points most pertinent to the discussion at hand.

This first chapter, chapter 0 will provide an overview of the synchronic pronominal proclitic systems in each of the modern languages. The chapter is organized according to the four major branches of the family, plus some general comments about independent pronominal forms.
After the synchronic overview, chapter 0 will briefly survey the previous attempts to analyze the internal constituency of the proclitics. While very little comparative-historical work has been done in this area, several previous researchers have attempted to determine morphological composition within individual modern languages. Most such analyses have consisted of simplistic agglutinative divisions within the proclitics that I personally have not found to be all that fruitful towards a diachronic analysis. That is not to say that they lack insight, however. There has also been one study in particular into the internal constituency of Kiowa proclitics that adopts a more phonologically sophisticated approach and does prove invaluable to my own investigation. Thus, it is useful to address what has been done in this area before pursuing my own lines of thought on the matter.

The next several chapters undertake my own comparative-historical reconstruction analysis. Chapters 0-0 revolve around identifying cognates and non-cognates for given pronominal functions in order to determine the rough form to be reconstructed to Proto-Kiowa-Tanoan. This analysis does take into account sound correspondences in order to be sure of comparability, but only aims to reconstruct the schematic shape of the proto-proclitics. In doing so, I also attempt to provide explanations for non-cognate proclitics within a given function and the motivations for such innovations. Because of the lack of direct evidence (e.g. written records of earlier forms of the languages) and the complexities involved, the reader will find that I often present multiple possible explanations for an innovation or in argument for the reconstruction I choose. In most such cases, I argue for one particular scenario while acknowledging that further research may lead to revision of my proposals, but there are
one or two instances where I am not yet certain how a given innovative pronominal form developed.

These cognate evaluation chapters proceed paradigm-by-paradigm. Chapter 0 begins with the relatively simple intransitive set. Chapter 0 turns to the intransitive-dative paradigm and the number markers that index the non-dative argument in this and the other dative paradigm. Chapter 0 wades through the extensive transitive paradigm, omitting those forms that index a speech act participant as O argument. Chapter 0 discusses the problems in reconstructing the reflexive paradigm as a subset of the transitive. Having reached this point, chapter 0 is able to go quickly through the transitive-dative paradigm, which is not as complex as it seems at first glance, also omitting the proclitics that index a SAP D argument. The transitive and transitive-dative SAP forms are then the center of focus in chapter 0.

Having established schematic reconstructions of the pronominal proclitic paradigms on the basis of the cognate evaluation process of the above chapters, chapter 0 undertakes the analysis of the regular formal sound correspondences and proposes full reconstructions for the pronominal proclitic paradigms of Proto-Kiowa-Tanoan. In other words the analysis of chapters 0-0 identifies which forms should even be compared for reconstruction under consideration of morphosyntax and semantics while chapter 0 harkens to the findings of Part II and considers the actual phonology of the proclitics.

The last chapter of Part III, chapter 0, returns to a discussion of morphosyntax and considers the modern voice and valence systems and the historical developments between Proto-Kiowa-Tanoan and the modern Kiowa-Tanoan languages. This will involve consideration of the debate in the literature between calling constructions "inverse" or
"passive", looking in particular at the discussion in Klaiman (1991, 1993), Zúñiga (2006), and Croft (2001). Moreover, I will also consider the developments of the voice and valence systems within the individual languages from a typological perspective and analyze how it has affected person and number indexation, case marking, and grammaticalized semantic roles.

11.1 Synchronic Systems of Pronominal Proclitics

Depending on one’s analysis, each Kiowa-Tanoan language contains somewhere between 40 and 80 pronominal indexation proclitics. Lower counts reflect either more streamlined systems where one could regularly separate a morphological component (Towa) or systems where whole paradigms are absent either due to language change or to simple lack of adequate documentation (Arizona Tewa and Picuris Northern Tiwa). There may also be variation in pronominal forms among dialects or among speakers and generations (Rio Grande Tewa and Southern Tiwa). Material from different points in the 20th century describing Isleta Southern Tiwa in particular show a notable amount of variation. Kiowa contains by far the largest number of pronominal proclitics, although it must be noted that there are many that are homophonous but for tone patterns. Homophonous forms in Picuris Northern Tiwa and Southern Tiwa must be treated with caution for the same reason: with inadequate documentation of tone in these languages, it is difficult to be certain when to pronominal forms are truly homophonomous. Kontak and Kunkel’s (1987) transcription of tone in Taos Northern Tiwa pronominal proclitics provides clues from which to analogize in the other Tiwa languages, but this is an
unfortunate shortcoming for this study. Fortunately it affects grammatical reconstruction very little.

Attacking such a large set of highly grammaticalized forms could become quickly unwieldy without some principle of organization. Luckily their occurrence with verb stems in well-defined argument marking constructions compels an ordering of all of these forms into functionally based paradigms in each of the languages. Moreover, there is a high degree of comparability between the different paradigms amongst the languages. Thus, while there is a lot of synchronic and diachronic crossover of individual forms between paradigms within a given language, this natural paradigmatic organization provides us with a means of addressing the pronominal proclitics in an orderly fashion.

The pronominal morphemes index, or at least are driven by the presence of, four different broad types of arguments: S, A, O, and D(ative), using the classificatory labels of Comrie (1978) Dixon (1979) and subsequently used throughout the typological literature. S indicates the single argument of an intransitive predication. A and O represent the two arguments of a transitive predication, grammaticalized based on the prototypes of a volitional, controlling agent (A) and an affected, non-controlling patient (O). Kiowa-Tanoan also has D well entrenched in its grammar, which encodes arguments that are indirectly affected by the events of a predicate, including the possessor of an entity involved in the event, the recipient of an entity transferred by an action, and the beneficiary of the proceedings or outcome of the event. The grammatical person and/or number (and thence, noun class) of these differentiated arguments are the categories that are encoded within the pronominal proclitic forms.
The different paradigms are derived from the combinatory possibilities of these different types of arguments. The basic paradigms common to all of the Kiowa-Tanoan languages are: the intransitive, which encodes only a single (S) argument; the transitive, which encodes the A and the O arguments; the intransitive-dative, which encodes an S argument as well as a D argument; and the transitive-dative, or ditransitive, which encodes an A, O, and D argument. All of the languages also have a reflexive series, which encodes a transitive A and O that are coreferential—i.e. the A is acting upon itself—but which also has developed in all of the languages to encode S in some predicates. Tewa, Rio Grande Tewa in particular, also has developed some additional paradigms. Originally within Proto-Kiowa-Tanoan and as analogical developments within the daughter languages, there is some formal overlap between the members of the different paradigms. A good chunk of Part III will in fact be spent tracing such interactions between the pronominal sets.

Although the primary focus of this chapter is on the formal and functional developments among the pronominal indexation markers themselves, we must also heed the greater morphosyntactic constructions in which they occur. In particular this means taking note of voice constructions—especially the passive/inverse as opposed to the active/basic voice—and the limited case marking that occurs on certain core arguments. The facts of the modern languages will be covered in this synchronic overview of the

---

1 This is a bit of an oversimplification in order to generalize over the facts of Kiowa-Tanoan. Typologists prefer to speak of the grammatical roles of a ditransitive construction as A, T (theme: the object being transferred), and the G/R (goal/recipient: the endpoint of the transfer) (Dryer 1986, Haspelmath 2011a). Indeed, it is not inaccurate to describe Kiowa-Tanoan languages using such notation, which we will see further below. But, because ditransitive constructions are expressed using the same pronominal indexation forms as a transitive with an A and O plus a possessor of the O, it seemed more optimal for this quick survey to describe the ditransitive as consisting of A, O, and D arguments.
languages in this chapter, but discussion of the diachronic changes that give rise to the modern voice and case systems won’t appear until after the reconstruction of the pronominal systems, in chapter 0.

The following sections will summarize the pronominal paradigm forms in each language as well as the distribution of the individual paradigms within each language. Because the pronominal systems of the two Tewa languages and the systems of the three Tiwa languages are respectively quite similar to each other, the languages will be addressed according to the four major language branches. Section 11.2 will described the pronominals of Kiowa. The Tewa languages will be addressed in section 11.3. The three Tiwa languages will follow in section 11.4. Section 11.5 will cover Towa, the last branch of the family. Finally, section 11.6 will summarize some of the independent pronoun forms that often accompany the indexation. Even though these pronouns are not analyzed in the present study, it is useful for reference to point them out since they do occur in example sentences throughout the dissertation.

11.2 Kiowa

Kiowa possesses the largest number of pronominal proclitics of all of the Kiowa-Tanoan languages. This is because it maintains the largest number of person-number category distinctions across its paradigms most consistently even though the forms fall into the same basic paradigm sets as seen across the family. These functionally defined paradigms are the intransitive (11.2.1), reflexive (11.2.2), transitive (11.2.3), intransitive-dative (11.2.4), and transitive-dative (11.2.5), although there has been some formal reshuffling across these series. It should also be noted that many forms are also almost
identical except for the accompanying tone patterns they bear, perhaps more so than in
any other branch.

11.2.1 Kiowa Intransitive

The Kiowa intransitive series of pronominal indexation proclitics, as its name
suggests, occurs primarily when there is only a single core argument being construed
within the event. In other words, it occurs with monovalent predicates, although not all
monovalent predicates require the intransitive series. The intransitive series appears most
consistently with basic and derived stative verbs (1)a, change of state verbs (1)b, basic
verbs of directed motion (1)c—but not necessarily manner of motion—and verbs of
position (1)d, as well as some other basic active verbs, e.g. *die*, *dwell*, and some basic
cognitive verbs, e.g. *dream* (1)e.

(1) Kiowa intransitive usages

a. Stative (Watkins 1984: 136)

\[
\begin{align*}
\text{sân } & \ k^b\text{ôpdó}' \\
\text{child } & \ 3.\text{ITR}=\text{sick-be.ST}
\end{align*}
\]

*The child is sick.*


\[
\begin{align*}
gyako \ & \ dósal'\text{̃mgya} \\
gya=ko \ & \ dó-sál-\text{̃mgya} \\
3.\text{ITR}=\text{very-hot-become.PF}
\end{align*}
\]

*It got very hot.*

c. Directed Motion (Watkins 1984: 217)

\[
\begin{align*}
sót \ & \ k^b\text{í}dêl \ ʒ\text{-gôto-kya} \ a=\text{cán} \\
\text{IMM.PST yesterday own=house-at} & \ 1.\text{ITR}=\text{arrive.PF}
\end{align*}
\]

*I just arrived yesterday.*
The above sentences demonstrate only a small selection. The intransitive paradigm appears to occur quite frequently with a large number of verb forms. Comparatively it may occur with more verbs than the intransitive does in Tewa, but with fewer than in Tiwa (and maybe Towa), as will be seen in the following sections.

The full series of Kiowa intransitive pronominal indexation proclitics is given in Table 11-35. Kiowa makes a three-way person distinction between first, second, and third person. First person makes only a two way number distinction between singular and non-singular, second person a three-way distinction among singular, dual, and plural, and third person a five-way distinction amongst singular/basic number, dual, inverse, inanimate plural, and a "human plural" category.

### Table 11-1: Kiowa Intransitive Paradigms

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>I</th>
<th>P</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a</td>
<td>e</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>çm</td>
<td>mą</td>
<td>ba</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ø</td>
<td>ç</td>
<td>e</td>
<td>gya</td>
<td>á</td>
</tr>
</tbody>
</table>

It will be seen amongst the Kiowa paradigms that dual and plural are almost never distinguished in the first person. When this is the case, the first person non-singular pronominal is always identical to the third person inverse. The distribution of
grammatical numbers in the third person is largely determined by noun class. The singular is the unmarked number and serves as the "basic" category in contrast to the inverse, which marks the plural of Class I (mainly animate) referents, the singular of Class II inanimate referents, and both the singular and plural of Class III inanimate referents. The inverse is never used with dual number in Kiowa—the dual proclitics are used for the dual of all but a subset of Class IV nouns—and is also never used with Class IV nouns. The plural (P) number category is used only with lexically determined inanimate referents of Class II and Class IV. Nouns which do not mark the plural with either the plural or the inverse—i.e. the rest of the Class II and Class IV nouns—index plural number with the singular proclitics. Indeed, Kiowa actually appears to make more noun class distinctions as determined by the combinatorial possibilities of number indexation than any other Kiowa-Tanoan language.

The "human plural" (H) number is a uniquely Kiowa category which does not exactly fit into the noun class designation. It is used only for humans with high empathetic value, e.g. for fellow Kiowas, but not for members of other tribes. Humans not falling under this high empathy rubric are indexed with the inverse, like other animate referents.

It can also be noted that Kiowa is the only Kiowa-Tanoan language to distinguish exclusive and inclusive first person non-singular to any extent in the pronominal indexation. The first person non-singular pronominals express the exclusive. The inclusive is contrastive only for A and S arguments, but there is no unique morphology for the category. Second person plural proclitics are used instead, meaning there is
ambiguity between second person non-singular and first person inclusive outside of context.

As in the other languages to be reviewed, the intransitive paradigm is perhaps the simplest of all of the Kiowa paradigms. It is more complex than the others primarily in its number distinctions interacting with noun classes and in the presence of the human plural category.

11.2.2 Kiowa Reflexive

The other major monovalent series of pronominal indexation markers in Kiowa is the reflexive paradigm. As indicated by the label, these pronominals are used when both the A and the O of a transitive predicate refer to the same entity or set of entities. That is, when a participant reflexively affects him- or herself in the event or when two or more participants reciprocally affect each other. Because of the coreferentiality of the two participant roles, only a single argument need be indexed in the pronominal proclitics, as seen in (2).

(2) Transitive reflexive-reciprocal usage (Watkins 1984: 141)

\[
\begin{align*}
t'\text{ או} p^h \cdot e & \text{n}p'\text{ åyг} \o \\
t'\text{ או} p^h \cdot e & = p'\text{ åyг} \\
\text{buck} & \quad 3\text{D.RFL}=\text{fight.PF} \\
\text{The (two) bucks fought each other.}
\end{align*}
\]

The pronominal indexation may be the only indicator of reflexive or reciprocal meaning in such constructions, although Kiowa does also make use of an independent reflexive pronominal form ḟ ḡó.

The use of the reflexive series has also been extended beyond basic reflexive and reciprocal usage in Kiowa, however, occurring with numerous monovalent predicates. In
Kiowa this set of predicates seems to include change of position verbs (3)a, verbs of (voluntary and involuntary) bodily activity (3)b, and predicates denoting manner of motion (3)c as well as other active verbs expressing movement.

(3)  

a. Change of position (Watkins 1984: 238)

\[
\text{emsö̞·gya·} \quad \text{mön} \quad \text{emto·dō·gugə} \\
\text{em=sö̞·gya·} \quad \text{mön} \quad \text{em=tō·dō·gu=gə} \\
3\text{S.RFL=sit.down.S/D.PF} \quad \text{probably} \quad 3\text{S.RFL=shoe-put.on-IPF=and.SS}
\]

*He sat down probably in order to put on his shoes.*

b. Bodily activity (Paddlety 1998: 19)

\[
\text{emk'ö̞lzémhá·tóp} \\
\text{em=k'öl-zémhá·tóp} \\
3\text{S.RFL=gum-chew.IPF}
\]

*S/he is chewing gum.*

c. Manner of motion (Harbour 2008: 146)

\[
\text{hágyáco} \quad \text{dehó·ot} \\
\text{hágyá=co} \quad \text{de=hó·ot} \\
\text{somewhere=indeed} \quad 1\text{S.RFL=travel-drop.S/D.PF}
\]

*I turned off somewhere.*

Kiowa may be second only to the Tewa languages in the extent to which it uses the reflexive pronominal paradigm for monovalent predicates. These pronominals thus occur with a high frequency.

Although the reflexive paradigm is functionally distinguishable in the above uses, the pronominal forms in Kiowa are identical to transitive proclitics indexing a third person human plural O argument. That is, the reflexive paradigms appears to originate as a subset of the transitive series which have taken on a special reflexive-reciprocal and monovalent function. Thus, further uses of the reflexive paradigm are transitive in nature and will be illustrated in section 11.2.3.
The forms of the reflexive pronominal proclitics in Kiowa are given in Table 11-2. The same person and number categories as occur in the intransitive occur in the reflexive, but note that there are fewer number distinctions in the third person. Because the predicates with which the reflexive series occurs overwhelmingly take an animate participant, there is no third person inanimate plural. Kiowa does still show the inverse, used for most animate plurals, and the human plural, used for humans of high empathetic value.

Table 11-2: Kiowa Reflexive Paradigms

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>I</th>
<th>H</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>de</td>
<td>ét</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>be</td>
<td>mé</td>
<td>bé</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>ěm</td>
<td>én</td>
<td>ét</td>
<td>ěm</td>
</tr>
</tbody>
</table>

Because of the semantic animacy restrictions in the predicates which take the reflexive, noun class is not as rigorously defined with the number differentiation in the reflexive proclitics as in the intransitive. Also, as in the intransitive, the first person non-singular is not distinguished for dual and plural and this non-singular form is identical to the proclitic indexing third person inverse.

11.2.3 Kiowa Transitive

The remaining three primary series of pronominal indexation markers are grammaticalized to encode more than one argument. Kiowa, more than any of the other languages, regularly maintains person-number contrasts rather than conflating them, making these paradigms quite large in the number of forms included. The most straightforward of these, although it is one of the largest paradigms, is the transitive. The
intransitive-dative and transitive-dative are somewhat more complex in their semantics, and will be addressed in the following sections.

The transitive is prototypically used in a divalent predicate when the factors motivating the two dative series do not apply. There is an A argument that tends to be at least somewhat volitional and a distinct O argument that is at least somewhat affected by the event (4)a. Kiowa distinctly marks A arguments that lack volition or control, as will be illustrated in 11.2.4. Kiowa, like other Kiowa-Tanoan languages, also tends to encode perception predicates as transitive, with the perceiver encoded as A and the percept encoded as O argument, as in (4)b.

(4) Kiowa transitive
   a. Active predicate (Watkins 1984: 138)
      \[
      \text{zébó}t \quad \text{dézóntó́} \\
      \text{zébó}t \quad \text{dé=zon-tó́} \\
      \text{arrow.1} \quad \text{1S>3I=pull.out.PF-FUT} \\
      I \text{ will pull out the arrow.}
      \]
   b. Perception predicate (Sivertsen 1956: 121)
      \[
      \text{tógúl} \quad \text{gyabó́} \\
      \text{tógúl} \quad \text{gya=bó́} \\
      \text{young.man} \quad \text{1S>3S=see.PF} \\
      I \text{ saw the young man.}
      \]

The grammatical role of each core participant in a transitive event is expressed in the proclitic. In both of the sentences in (4), there is a first person singular A argument and a third person O argument, inverse in (4)a, as indexed by dé=, and singular in (4)b, as marked by gya=.

Many verbs that take the reflexive series when monovalent tend to take the transitive series when an argument is added. In some cases this suggests the historical
precedence of the verb as transitive with the reflexive pronominal usage derived from actual reflexive meaning. Contrast the uses of the verb gûn in (5).

(5) Transitive or reflexive (Watkins 1984: 141)
   a. Reflexive
      
      degûn
degûn
    1S.RFL=throw.away.PF
    I danced/jumped in.

   b. Transitive
      
      gyagûn
gyagûn
    1S>3S=throw.away.PF
    I threw it away.

The transitive meaning throw away expressed in (5)b appears to be the original, while the meaning jump in of (5)a appears to be a reflexive use derived from that transitive meaning, i.e. throw oneself away = jump. The meaning dance may be a further extension from that basic reflexive use.

The remaining functional purview of the transitive pronominal series is best revealed through a survey of the actual forms the paradigm. Because of the extensiveness of the series, the paradigm is best divided into two tables. Table 11-3 presents the pronominal forms that index a speech act participant (first or second person) as the O argument.
Table 11-3: Kiowa Transitive X>SAP Paradigm

<table>
<thead>
<tr>
<th>A ↓ / O →</th>
<th>1s</th>
<th>1D</th>
<th>1P</th>
<th>2s</th>
<th>2D</th>
<th>2p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1NS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2s</td>
<td>ĕ́</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td></td>
<td>mấ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2p</td>
<td></td>
<td>bấ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3NS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notice that neither first person nor third person A arguments make any distinctions in non-singular number. There are also other conflations that can be observed in the table. When the O argument is non-singular, there are no number contrasts at all in a first or second person A argument. When the A argument is third person, a three-way number contrast is found with first person O arguments when the A is singular, but no number distinction is made for the first person O when the A is non-singular. With a second person O argument, on the other hand, a three-way number distinction is always made while there is no number distinction in the third person A argument.

It will be seen in contrast to the other languages that Kiowa has the most robust distinctions in this part of the paradigm. Indeed, Tewa is the only other branch that has pronominals that index a third person A argument with a SAP O argument. The Kiowa forms that index SAP arguments with a third person A are in fact identical to forms found in the dative paradigms of the next two sections. Such reanalysis is taken up in the reconstruction chapters to follow.

More prototypical to the transitive predicate construction is when the O argument is third person. This part of the paradigm is thus much more elaborated, with greater

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2 This is one of the few paradigms where a dual-plural distinction is found in the first person at all.
number contrasts for both the A and the O arguments. Table 11-4 presents the rest of the Kiowa transitive paradigm, when the O argument is third person.

Table 11-4: Kiowa Transitive $X>3$ Paradigm

<table>
<thead>
<tr>
<th>A ↓ / O →</th>
<th>3S</th>
<th>3D</th>
<th>3P</th>
<th>3I</th>
<th>3H</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>gya</td>
<td>nęn</td>
<td>gyat</td>
<td>dé</td>
<td>de</td>
</tr>
<tr>
<td>2S</td>
<td>a</td>
<td>mën</td>
<td>bat</td>
<td>bé</td>
<td>be</td>
</tr>
<tr>
<td>3S</td>
<td>Ø</td>
<td>e</td>
<td>gya</td>
<td>ée</td>
<td>em</td>
</tr>
<tr>
<td>1D</td>
<td>é</td>
<td>et</td>
<td>ét</td>
<td>ét</td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>má`</td>
<td>mën</td>
<td>män`</td>
<td>mën`</td>
<td>mé</td>
</tr>
<tr>
<td>3D</td>
<td>e`</td>
<td>én</td>
<td>én`</td>
<td>én</td>
<td></td>
</tr>
<tr>
<td>1p</td>
<td>é`</td>
<td>et</td>
<td>ét`</td>
<td>ét</td>
<td></td>
</tr>
<tr>
<td>2p</td>
<td>bá`</td>
<td>bet</td>
<td>bát`</td>
<td>bét</td>
<td>bé</td>
</tr>
<tr>
<td>3H</td>
<td>a`</td>
<td>et</td>
<td>gyá`</td>
<td>et</td>
<td>ém</td>
</tr>
<tr>
<td>3I</td>
<td>e`</td>
<td>et</td>
<td>ét`</td>
<td>ét</td>
<td></td>
</tr>
</tbody>
</table>

The “floating” grave accent seen accompanying some of the proclitics indicates that all tones on the verb word following the pronominal are lowered to low tone. The A arguments show the same person and number contrasts as seen in the reflexive. (Indeed, recall that the reflexive is derived from this part of the transitive paradigm and is identical to the column of forms indexing a third person human plural O argument.) Kiowa shows the familiar syncretism between first person dual and plural and third person inverse seen in the intransitive and reflexive.

The human plural and the inverse are syncretized in certain configurations. They are expressed by identical forms as A arguments only when combined with a third person dual O argument. When O arguments, the human plural and inverse are identical with a

---

3 Note that the pronominal thus bears the only high tone on the morphological verb word. While there are arguments that the pronominal morphemes in Kiowa are clitics (cf. Harbour 2003) and thus have some phonological independence from the verb word, the pitch accent system otherwise prevalent in the language suggests that such tone-lowering pronominals have some phonological integration with the verb word to which they are morphologically bound. This is distinct from the behavior seen among Towa and Tewa pronominal proclitics mentioned in chapter 5 and may suggest quite an interesting analysis of phonological words in Kiowa.
first person non-singular, third person dual, or third person inverse A argument. Note too
that many pronominals in this paradigm, especially in the inverse and human plural,
differ only in tone or in the presence of a final consonant.

One final usage to note with the transitive paradigm is that the third person
inanimate plural O argument forms are used when the O argument is unspecified. This is
illustrated in (6).

(6) Unspecified O argument (Watkins 1984: 138)

ę mˀą́ˑg ɔ batp ɔ́ˑn ɔ̨́ˑęˑ
ę m=ˀą́ˑg ɔ bat=p ɔ́ˑn ɔ̨́ˑęˑ=2
2s=come.IMP and. SS 2S>3P=eat.IMP 1=LOC
Come and eat something at my house.

No particular O argument referent is being indexed on the transitive verb .po· eat in the
second clause. Rather than using an indefinite pronoun (as in the English translation) or
reducing the valence, a plural O argument transitive proclitic is used here instead, bat=.
Indefinite use of plural O argument proclitics is also found in Towa (cf. section 11.5).

11.2.4 Kiowa Intransitive-Dative

The two dative series of pronominal indexation markers may be considered
functional derivatives from the two main non-dative series with respect to distribution
across the Kiowa-Tanoan languages. That is, most predicates that take the intransitive set
may also take the intransitive-dative set while those that take the transitive may also take
the transitive-dative. Kiowa shows some additional constructions that pair transitive and
intransitive-dative proclitics as well. While there are a number of verbs that do take the
dative series in their most basic meanings, this number is small compared to those that
tend to take the intransitive, reflexive, or transitive series. It is thus more conducive to
generalize over the constructions in which the dative series occur than over semantic classes of lexical items.\(^4\)

The intransitive-dative series, a uniquely Kiowa-Tanoan set of indexation markers, is used whenever a speaker wishes to add a dative argument to an intransitive predicate. Probably one of the most common function is to introduce a possessor of that single participant of the intransitive. The S argument in such cases overwhelmingly tends to be inanimate and the D argument overwhelmingly tends to be animate. The example in (7) illustrates the possession of an inanimate body part S argument.

(7) Possession (Watkins 1984: 102)

\[
\begin{align*}
\text{tá·de} & \quad \text{někⁿóp} \\
\text{tá·de} & \quad \text{ně=kⁿóp} \\
\text{eye-BS} & \quad \text{3D>>1s=ache.ST} \\
\end{align*}
\]

*My eyes hurt.*

The pronominal proclitic here indexes the (dual) number of the possessed S argument as well as the person and number of the first person singular possessor. Since information structure tends to give prominence to animate (and especially human) participants, the intransitive-dative series provides a means to express the animate possessor as a core participant even though it is the possessed item that is under discussion. Since a possessor is likely to have a vested interest in the fate of his or her possession, any affectedness on the possessed entity would also have bearing on the possessor, which also motivates indexing the latter as a core participant.

\(^4\) From a construction grammar perspective, of course all of the pronominal series are specified by construction rather than by lexical items *per se*. But, for the purpose of quick and maximally general summary, an implicit cross-correlation of token and type frequency of both pronominal proclitics and lexical stems makes it more succinct to appeal to semantic classes of lexical items for some series and morphosyntactic constructions for others. There are certainly semantic classes of verb stems that might take the intransitive-dative series quite frequently—perhaps even more often than not—but are described as taking the intransitive series “basically”, e.g. verbs of position. In these cases the correlation between semantic classes and constructions can be made explicit in order to capture the distribution of the pronominal series under discussion.
It is possible in Kiowa for the possessed entity to be animate in a dative construction. However, often when the S argument is animate, the possession will not be expressed with a dative pronominal on the main predicate. In Kiowa such animate possession is often accomplished by possessive marking on the possessed referent itself.

(8) Possession without indexation (Watkins 1984: 107)

\[
\begin{align*}
\text{nɔ́ tɔ́ cegʊn} & \quad \text{hɔldó} \\
\text{nɔ́=tɔ́=cegʊn} & \quad \text{Ø=hɔl-dɔ́} \\
1.\text{poss}=\text{opp.sex.sibling}=\text{dog} & \quad 3\text{S.ITR}=\text{sick-be.ST} \\
\text{My brother's dog is sick.}
\end{align*}
\]

In the sentence in (8), the possessor is indicated by a possessive pronoun procliticized to the possessed noun tɔ́, sibling of the opposite sex. This possessed animate noun is itself in turn a possessor of the animate noun cegʊn dog, to which it is compounded to show this possession relationship. However, the verb simply indexes a third person singular argument indicating the argument which is actually sick, namely the dog.

While it appears that any intransitive verb may occur with an intransitive-dative pronominal to express possession, these pronominals occur quite frequently on stative predicates, copulas, and verbs of position. The latter two in particular are common as the primary means of expressing the predication of possession as well as co-occurring with attributive possession as seen above. The sentence in (9)a illustrates the intransitive-dative with an active verb of directed motion while sentence (9)b shows a predication involving possession with a stative positional verb.

(9) Possession with intransitive predicates

a. Possession with active motion verb (Watkins 1984: 136)

\[
\begin{align*}
\text{mɔ́ gi} & \quad \text{cɛɛn} \\
\text{mɔ́ gi} & \quad \text{ɛ=cɛɛn} \\
\text{grandson} & \quad 3\text{S}>>1\text{S}=\text{arrive.PF} \\
\text{My grandson came home.}
\end{align*}
\]
b. Possession with positional verb (Watkins 1977: 430)

\[ \text{ɛkóm\textsuperscript{m}k\textsuperscript{\textacute{y}}} \]
\[ \text{ɛ}=\text{kóm-k\textsuperscript{\textacute{y}}} \]
\[ 3s>>1s=\text{friend-be.lying.S/D.ST} \]
\[ S/he's \text{ my friend}. \]

This kind of predicational possessive construction is common across the family. Tiwa and Towa especially make use of it in relative clauses to denote attributive possession. Kiowa, however, has different types of attributive possession constructions and so mainly seems to use the intransitive-dative possession in main clause predications\(^5\).

The dative argument may also express a beneficiary, although this usage is not as common as the possessive interpretation. It does not appear that a monovalent predicate that takes the reflexive series can take the intransitive-dative series, or at least they do not tend to. Whatever the exact grammaticality judgment on attaching these pronominals to reflexive verbs, the class of verbs that take the reflexive series would be under little functional pressure to make use of the intransitive-dative series. Their single participant tends to be animate and would usually have a higher or equal degree of informational prominence as a possessor or beneficiary. The animate participant would thus tend to be indexed in the predicate it is involved in while the added participants are thus more likely to be expressed obliquely in order to maintain the appropriate degree of prominence (or rather for lack of motivation for the latter to replace the former as central participant to the predicate).

Given its most common usage in the expression of possession, the S argument is overwhelmingly third person while the D argument may be of any person or number.

---

\(^5\) Kiowa has two special sets of prefixes derived from its independent pronouns for expressing pronominal possession of kinship terms and common nouns respectively. Nominal possession may be expressed by suffixing -\textsuperscript{fé} to a proper name or by compounding the possessor and possessed nominals. These constructions may or may not be accompanied by intransitive-dative pronominals on the predicate.
Perhaps stemming from this functional tendency during its development, the S argument indeed makes no distinctions for person, only number.

Kiowa has a construction unique in the family that makes use of the intransitive-dative proclitics. It is similar in form to the passive found in Tiwa and Towa (and is indeed cognate), but is functionally quite different. In this construction a transitive verb is marked with a detransitivizing suffix and a transitive pronominal with a third person O argument is swapped out for an intransitive-dative pronominal. But, rather than marking the agent as an oblique as in a passive construction, the would-be A argument is indexed as a D argument and the O argument as the intransitive-dative S argument. Thus, the two transitive arguments are still indexed. This construction is used to indicate that the agent is not in control of the action, that the event transpires by accident or involuntarily (10)a, or that the agent can only accomplish the event with difficulty (10)b and/or through greater than average effort (10)c.

(10) Control voice construction

a. Lack of control (Watkins 1984: 142)
   
   k'ɔ́ːʔáttɔ̀ ɔʔótkyá
   k'ɔ́ːʔáttɔ̀ ɔ́=ót-kyá
   dish.1 3I>>3S=drop-DTR.PF
   S/he dropped the dish (accidentally).

b. Overcoming difficulty (Watkins 1984: 143)
   
   hó  heqɔ́ ĝɔ́t̂ étkyá
   hó  heqɔ́ ĝɔ́=t̂ ét-kyá
   Q  now 3I>>2S=cut.open-DTR.PF
   Did you manage to get it cut open?

c. Effort (Watkins 1984: 144)
   
   hágyá yáhe̲ d̂áyt'ɔ́
   negõ  babá
   sometime 3P>>1S=remove.DTR-FUT then.DS 2P.ITR=go.IMP
   If I can get things cleared away, let's go!
The agent in sentence (10)a does not have control of the situation and undertakes the transitive event by accident. In (10)b and (10)c, on the other hand, the agent may have control and volition, but is faced with a serious challenge or impediment to the completion of the task. The dative thus serves to express the agent’s lack of control but also a degree of affectedness from the event, which is in keeping with the dative’s general usage across the family.

Similar semantics can be seen among those small numbers of verbs in Kiowa that take the intransitive-dative pronominals as their “default” paradigm. This set includes monovalent verbs where a relatively agentive participant lacks control, but moreover includes (monovalent or divalent) verbs with a non-volitional experiencer, such as certain mental states. Example (11) contains a short list of such verbs in Kiowa.

(11) Monovalent dative verbs

\[
\begin{align*}
\text{hágyá} & \quad \text{learn} \\
\text{ʾó dép} & \quad \text{like} \\
\text{tʰɛndɔ̂} & \quad \text{want} \\
\text{ʾɔ́ dep} & \quad \text{be unable}
\end{align*}
\]

\[
\begin{align*}
\text{séˑ} & \quad \text{emit smell} \\
\text{táy} & \quad \text{be awake} \\
\text{yóttep} & \quad \text{blunder}
\end{align*}
\]

Many of these predicates are, or tend to be, monovalent or are divalent with an event-type stimulus participant. The intransitive-dative paradigm is constructed to index two arguments in most of the languages, however. In Kiowa, the dative indexes the single participant while the S argument in such cases tends to be marked as third person plural (inanimate), the category used for unspecified arguments. Such constructions, also seen in the other languages, could be described as having an “empty” argument (cf. Frantz 1995, Singer 2011), but it appears on functional grounds that Kiowa-Tanoan languages are making use of the resources they have at their disposal to mark an argument as dative.
Lacking a specialized paradigm that only indexes a single argument as D, the intransitive-dative series is the next best thing.

Having covered the general functions of the intransitive-dative series in Kiowa, Table 11-5 presents all of the pronominal forms. As noted above, the languages make no person distinctions for the S argument, only number distinctions. The D argument, on the other hand, makes the usual three-way person distinction as well as a three-way number distinction for all persons, except first person where there is simply a singular/non-singular contrast. A third person D argument never makes more than a three-way number distinction: singular, dual, and (animate) plural. There is no distinct inanimate plural or inverse in the dative, since it always expresses an animate referent.

Table 11-5: Kiowa Intransitive-Dative Paradigms

<table>
<thead>
<tr>
<th>D ↓ / S →</th>
<th>S</th>
<th>D</th>
<th>P</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>ē</td>
<td>nē</td>
<td>yā</td>
<td>ný</td>
</tr>
<tr>
<td>2S</td>
<td>gyā</td>
<td>nēn</td>
<td>yān</td>
<td>gō</td>
</tr>
<tr>
<td>3S</td>
<td>á</td>
<td>ūn</td>
<td>ān</td>
<td>ū</td>
</tr>
<tr>
<td>2D</td>
<td>mē</td>
<td>mēn</td>
<td>mān</td>
<td>mōn</td>
</tr>
<tr>
<td>3D</td>
<td>mē</td>
<td>mēn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1NS</td>
<td>dō</td>
<td>dēt</td>
<td>gyāt</td>
<td>dāt</td>
</tr>
<tr>
<td>2P</td>
<td>bó</td>
<td>bēt</td>
<td>bāt</td>
<td>bōt</td>
</tr>
<tr>
<td>3P</td>
<td>bē</td>
<td>bēt</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As seen in the table Kiowa distinguishes four grammatical numbers for the S argument on top of the person and number distinctions for the dative. There is no human plural category distinction here. A syncretism seen in these pronominals not found in any of the above Kiowa paradigms is the reduced number contrasts for the S argument in the third person non-singular dative forms. For both a third person dual and plural, the pronominal has the same form whether the S argument is dual, inverse, or plural. Note
that the forms, \textit{mén}= for \(3NS>>3D\) and \textit{bét}= for \(3NS>>3P\), are identical to the \(3I>>2D\) and \(3I>>2P\) forms respectively. Otherwise, the number contrasts are maintained for the S argument throughout the paradigm. Kiowa thus has the greatest number of distinctions in its intransitive-dative paradigm compared to the other languages.

\subsection*{11.2.5 Kiowa Transitive-Dative}

The last paradigm is the transitive-dative, or ditransitive, which indexes a transitive A and O as well as a dative argument. Taking into account, as it does, three arguments, this paradigm is perhaps at its most complex in Kiowa. Formally it shows some overlap with the intransitive-dative as well as some unique characteristics. It is not used as the “default” paradigm for many verbs, but does appear in a number of constructions.

The function of the D argument in this paradigm is comparable to the D in the intransitive-dative: it primarily expresses a possessor, but also frequently a beneficiary. As an extension of the latter, it may also express the recipient of a transfer event. The recipient (12)a and beneficiary (12)b functions are simple insofar as they add a third, indirectly affected participant to a transitive event.

(12) Beneficiary and recipient usage

a. Recipient dative (Watkins 1984: 139)

\begin{verbatim}
 kút bágî pó'ʒy
 kút bágî=pó'-ʒy

book 2p>3p>1s=see.INC-give.IMP
\end{verbatim}

You (pl.) show me the book.
b. Beneficiary dative (Watkins 1984: 139)

\[
\begin{align*}
\text{zébat} & \quad \text{gózóntó́} \\
\text{gó} & = \text{zón-tó́}
\end{align*}
\]

arrow.1 1s>3i>2s=pull.out.PF=FUT

*I will pull out the arrow for you.*

The first person argument in (12)a expresses a metaphorical recipient—the transfer-like event is experiential rather than material—in an event involving three participants. In (12)b there is a basic divalent transitive event, *pulling out*, to which a third participant is added, one who benefits from the action.

The possession function requires further comment since it entails a specific, possessive relationship between two of the participants. The dative argument may only express the possessor of the O argument, never the possessor of the A argument, as seen in (13).

(13) Possessive dative (Watkins 1984: 139)

\[
\begin{align*}
\text{ˀá } \text{do} & \quad \text{bóthêm} \\
\text{ˀá } \text{-do} & \quad \text{bót} = \text{thêm}
\end{align*}
\]

stick-1 X>3I>2P=break.PF

*They broke your (pl.) stick.*

The A argument will almost always be animate (and human) while an O argument that is likely to be possessed will tend to be inanimate. Note too in such a construction that the O argument will always be third person. In fact the O is not differentiated for person in the transitive-dative paradigm at all.

As with the intransitive-dative series, there are a few verbs that take the transitive-dative proclitics by default, although not as many as take the intransitive, reflexive, or transitive. Trivalent verbs such as *give to, sell to, bring to* almost always appear to take the transitive-dative proclitics as expected, which is not necessarily the case among the Tanoan languages.
There are also some divalent verbs in Kiowa that take the transitive-dative series by the same motivation that some monovalent verbs take the intransitive-dative. That is, the semantics of the affected participant are more in accord with the semantics expressed by dative arguments. Because Kiowa does not have a pronominal series encoding only an A and a D argument, the transitive-dative is used as the nearest functional equivalent. Because the O argument is so tightly encoded in the pronominal form, some convention has to be established as to which dative proclitic to use. Usually this means marking it as inanimate plural since that is the category used for unspecified objects, as in (14)a. Watkins (1984) however notes a handful of Kiowa verbs that use dual O indexation, an example seen in (14)b.

(14) Divalent transitive-dative verbs
   a. Unspecified plural O (Adger et al 2009: 52)
      hâˑtel yáⁿtʰaˑʔɨ mɛˑʔ
      hâˑtel yáⁿ=tʰaˑʔɨ mɛˑʔ
      who 3s>3p>2s=help.pf
      Who helped you?
   b. Unspecified dual O (Watkins 1984: 145)
      néⁿtʰ̪ˑhát
      néⁿ=tʰ̪ˑhát
      1s>3D>2s/3s=listen.to.PF
      I listened to you/him.

Both of the expressed events, help and listen, involve two participants. The non-agentive participant is not a prototypical patient directly affected by the event in any physical way. The indirect affect upon the second party is thus indicated by the dative. The motivation for the O argument indexation is lexicalized within the language. The plural indexation in
(14)a is undoubtedly motivated by the unspecified object use of the third person plural, but the use of dual indexation as in (14)b is not as clear.6

Finally with respect to function, animacy and topicality must be considered. As already noted, the O argument will tend to be third person—and indeed the paradigms make no person distinction—and will also tend to be inanimate. Therefore of the three arguments, it will tend to rank lowest in terms of information structure. On the other hand, both the A argument and the D argument tend to be animate and may be of any person or number and are therefore potentially tied for general discourse prominence. Agents tend to be ranked quite high in topicality and information structure in general, but the very fact of mentioning a dative lends the latter a high degree of prominence. Indeed this contest is reflected in the structure and organization of the transitive-dative pronominals. In Kiowa greater differentiation in person and number is maintained for the D argument than for the A argument, suggesting the D tended to outrank the A in saliency in the development of the system. There are however some configurations where there are surprising confluences in the D argument while the A argument is more clearly distinguished. Thus, on top of the general complexity of indexing three participants, this paradigm is rendered more interesting by the competing motivations to reconcile grammatical role, person, and information structure. This is not as transparent in Kiowa as in the other languages, but it does make appearances.

Like in the transitive, the transitive-dative proclitics will be distributed amongst more than one summary table due to their complexity. Table 11-6 presents those

---

6 One could develop an account linking duality to listening in this particular example—humans having two ears with which to listen—but this reasoning does not obviously apply to other predicates which require such indexation, cf. Watkins (1984: 145-146).
proclitics that index a first person D argument. This first person D is distinguished for singular versus non-singular number.

Table 11-6: Kiowa Transitive-Dative $X>X>1$ Paradigm

<table>
<thead>
<tr>
<th>A ↓ / D →</th>
<th>$I_S$</th>
<th></th>
<th></th>
<th></th>
<th>$I_{NS}$</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>O →</td>
<td>$S$</td>
<td>$D$</td>
<td>$P$</td>
<td>$I$</td>
<td>$S$</td>
<td>$D$</td>
<td>$P$</td>
<td>$I$</td>
</tr>
<tr>
<td>2S</td>
<td>²é</td>
<td>ⁿé</td>
<td>²yá</td>
<td>ⁿó</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>²mâˑ</td>
<td>²ménˑ</td>
<td>²mâǹˑ</td>
<td>²mâǹˑ</td>
<td>²dó</td>
<td>²dét</td>
<td>²gyát</td>
<td>²dôt</td>
</tr>
<tr>
<td>3D</td>
<td>³êˑ</td>
<td>³éǹˑ</td>
<td>³éǹˑ</td>
<td>³éǹˑ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2P</td>
<td>²bâˑ</td>
<td>²bédêˑ</td>
<td>²báǧêˑ</td>
<td>²bódóˑ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3I</td>
<td>³êˑ</td>
<td>³éďêˑ</td>
<td>³éďêˑ</td>
<td>³éďêˑ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3P</td>
<td>³âˑ</td>
<td>³dêˑ</td>
<td>³gyâˑ</td>
<td>³dôˑ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here, as throughout most of the transitive-dative paradigm, a four-way number distinction is maintained for the (third person) O argument, as shown in the columns of the table. There are some interesting mergers among the A indexation of these pronominals. Second and third person singular A arguments are indexed by the same forms, but second and third person dual, plural, and inverse A forms are all kept distinct when the D argument is first person singular. However, when the dative is first person non-singular, then Kiowa makes no person or number contrasts for the A argument.

The configuration of distinctions maintained are different when the D argument is second person, as shown in Table 11-7.
Table 11-7: Kiowa Transitive-Dative $X>X>2$ Paradigm

<table>
<thead>
<tr>
<th>A ↓ / D →</th>
<th>O ↓</th>
<th>2s</th>
<th>2D</th>
<th>2P</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS</td>
<td>S</td>
<td>gyá</td>
<td>mʒ</td>
<td>bό</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>nén</td>
<td>mën</td>
<td>bét</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>yán</td>
<td>män</td>
<td>bát</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>gó</td>
<td>mön</td>
<td>bót</td>
</tr>
<tr>
<td>INS/3</td>
<td>S</td>
<td>gό</td>
<td>mʒ</td>
<td>bό</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>dét</td>
<td>mën</td>
<td>bét</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>gyát</td>
<td>män</td>
<td>bát</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>gót</td>
<td>mön</td>
<td>bót</td>
</tr>
</tbody>
</table>

There is always a three-way number contrast for the second person argument, no matter what the A argument is. The four-way contrast in number of the O is also maintained. However, note that distinctions in the A argument are severely reduced. A contrast between first person singular and non-singular is only retained when the D argument is second person singular. When the D is dual or plural, the same forms are used whether the A is first person singular or non-singular (note the repetitions in the $2D$ and $2P$ columns). Moreover, a third person A argument is never distinguished in number and is expressed using the same pronominal forms as a first person non-singular A argument. That means that when the D argument is second person dual or plural, the A argument is effectively unspecified for person and number. When the D is second person singular, the A argument only has a contrast between first person singular as opposed to everything else. We will see such reductions in configurations involving SAP dative arguments in the other Kiowa-Tanoan languages as well.

When the D argument is third person, there are typically more distinctions made for the A argument than was found in the above two tables. Kiowa does here show some
curious loss of its typical contrasts, however. These third person transitive-dative forms are seen in Table 11-8.

Table 11-8: Kiowa Transitive-Dative $X>X>3$ Paradigm

<table>
<thead>
<tr>
<th>A ↓ / D →</th>
<th>3S</th>
<th>3D</th>
<th>3P</th>
</tr>
</thead>
<tbody>
<tr>
<td>O → S</td>
<td>D</td>
<td>P</td>
<td>I</td>
</tr>
<tr>
<td>1S gyá</td>
<td>nén</td>
<td>yán</td>
<td>gó</td>
</tr>
<tr>
<td>2S á</td>
<td>én</td>
<td>ân</td>
<td>3</td>
</tr>
<tr>
<td>3S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D mâ·</td>
<td>ménê·</td>
<td>mâ‘nî·</td>
<td>mônê·</td>
</tr>
<tr>
<td>3D ê·</td>
<td>énê·</td>
<td>énî·</td>
<td>énê·</td>
</tr>
<tr>
<td>1NS ê·</td>
<td>édê·</td>
<td>égî·</td>
<td>édê·</td>
</tr>
<tr>
<td>2P bâ·</td>
<td>bédê·</td>
<td>bågî·</td>
<td>bódê·</td>
</tr>
<tr>
<td>3I ê·</td>
<td>édê·</td>
<td>égî·</td>
<td>édê·</td>
</tr>
<tr>
<td>3H â·</td>
<td>dê·</td>
<td>gyá·</td>
<td>dê·</td>
</tr>
</tbody>
</table>

When the D argument is third person singular, the four-way number distinction of the O argument is maintained as always. We also find other familiar patterns. There is a simple singular/non-singular contrast in the first person A argument, the non-singular forms being identical to the third person inverse A forms. There is no contrast between a second and third person singular A argument, the same merger as was found (for the D argument) in the intransitive-dative paradigm. In fact, the $XS>X>3S$ pronominals here are identical to the $X>3X$ pronominals of the intransitive-dative series.

The strange part of this paradigm is that when the D argument is third person dual or plural, there is rampant reduction of contrasts. No distinction is made in person or number for the A argument whatsoever. Also, all non-singular numbers in the O argument are merged to a single form. That means that instead of the 30-odd proclitic forms we would expect, there are only four. Also, just as in the singular A argument
forms, these \( X \times X > 3^N S \) proclitics are identical to the \( X >> 3^N S \) proclitics of the intransitive-dative paradigm.

Further formal properties of these transitive-dative proclitics and of the other Kiowa proclitics will be commented on in the following chapters, as the PKT pronominal system is reconstructed.

### 11.3 Tewa Languages

In comparison to Kiowa above and to Tiwa and Towa in the next sections, the Tewa languages appear to have had a radical reduction in their pronominal systems. There are fewer distinct forms—although still a large number—and the forms in the more complex paradigms tend to explicitly index fewer arguments. However, the pronominals still fall into comparable paradigms: intransitive (11.3.1), reflexive (11.3.2), transitive (11.3.3), intransitive-dative (11.3.4), and transitive-dative (11.3.5). In contrast to the simplifications that Tewa has undergone, there is increased complexity in the addition of further functionally defined paradigms. In addition to the above listed, we find a transitive-dative reflexive (11.3.6) set and imperative counterparts to the major paradigms (11.3.7).

#### 11.3.1 Tewa Intransitive

The Tewa intransitive series occurs primarily when there is only a single core argument within the event, just as described above for Kiowa. The intransitive paradigm may be at its most restricted distribution in the Tewa languages, however, the reflexive series having spread to most active monovalent predicates. The intransitive is still used for numerous high frequency monovalent verbs, however. Much like in Kiowa, it is used
for basic (and derived) statives (15)a, changes of state (15)b, basic verbs of directed motion (15)c, verbs of static position (15)d, predicates denoting monovalent speech action and mental events (15)e, as well as a number of other basic active verbs. The following sentences illustrate from Rio Grande Tewa.

(15) Rio Grande Tewa intransitive usages
a. Stative (SIL 1969: 25)
   \[\text{ok'óhsé} \quad \text{o=k'óhsé}\]
   \[1\text{S.ITR}=\text{feel.cold.ST}\]
   \[I'm \text{ cold}.\]
b. Change of state (Dozier 1953: 125)
   \[\text{nqsihe pó-} \quad \text{nq}=\text{si}-\text{he}-\text{ pó-}\]
   \[3\text{S.ITR}=\text{guts.ache-become.PF}\]
   \[S/he \text{ developed a stomachache}.
   
   c. Directed motion (Oke 1982: 29)
   \[\text{ovəŋcureyǒndiho} \quad \text{dac'ú}\]
   \[\text{ovəŋ}=\text{cude- yôndi}=\text{ho}\]
   \[3>3\text{D}=\text{enter.INC-command.PF-SB=already} \quad 3\text{D.ITR}=\text{enter.PF}\]
   \[They \text{ went in when they were told to}.
   
   d. Position (Oke 1982: 38)
   \[\text{wæŋ kônnú?} \quad \text{wí wéyu nqwŋ}\]
   \[\text{wæŋ kôn}=\text{nú?} \quad \text{wí wéyu nq}=\text{wŋ}\]
   \[\text{INDF.I arroyo}=\text{next.to INDF ox} \quad 3\text{S.ITR}=\text{be.standing.ST}\]
   \[There \text{ was an ox standing by the bank of an arroyo}.
   
   e. Speech Action (Oke 1982: 34)
   \[\text{heráhá?} \quad \text{ʔiŋ wë̄geʔiŋ wá' hqmbáditú}\]
   \[\text{hedi}=\text{á}=\text{há?} \quad \text{ʔiŋ wë̄ge}=\text{ʔiŋ wá' hqmbá di}=\text{tú}\]
   \[\text{and}=\text{TOP=then DF.I other}=\text{1 also same} \quad 3\text{P.ITR}=\text{say.PF}\]
   \[All \text{ the rest said the same thing}.
   
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Arizona Tewa provides some exceptions when it comes to verbs of position and other actives and the intransitive series largely seems restricted to statives and verbs of motion based on the examples in the literature\(^7\).

The full series of intransitive pronominal indexation proclitics for both Tewa languages is given in Table 11-9. Both languages make a three-way person distinction between first, second, and third person, and a three-way number distinction between singular, dual, and plural.

Table 11-9: Tewa Intransitive Paradigms

<table>
<thead>
<tr>
<th></th>
<th>RGT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>2S</td>
<td>ū</td>
<td>ū</td>
</tr>
<tr>
<td>3S</td>
<td>nq</td>
<td>nq</td>
</tr>
<tr>
<td>1D</td>
<td>ga</td>
<td>ga</td>
</tr>
<tr>
<td>2D</td>
<td>da</td>
<td>da</td>
</tr>
<tr>
<td>3D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1P</td>
<td>gi</td>
<td>gi</td>
</tr>
<tr>
<td>2P</td>
<td>í</td>
<td>bí</td>
</tr>
<tr>
<td>3P</td>
<td>di</td>
<td>di</td>
</tr>
</tbody>
</table>

There is a merger of the second and third person in the dual, a pattern that we will find across the other paradigms in Tewa as well.

Unlike in the other Kiowa-Tanoan languages, noun class is never reflected in the number distinctions made in the pronominal indexation markers. However, the use of these pronominals do reflect animacy. The third person plural is effectively only used with animate referents. Inanimate referents are indexed with the singular pronominal even when semantic plural number is being expressed, thus requiring context or other

\(^7\) This may be a recent development in Arizona Tewa of the latter half of the 20\(^{th}\) century. Verbs of position appear to take the intransitive pronominals in Yegerlehner’s research done in the 1950s.
morphosyntactic or lexical clues to indicate the intended number construal. All referents appear to be indexed for dual, however, no matter what their animacy. Also in the third person, and unlike in the other three Kiowa-Tanoan branches, there is an overt pronominal indexation proclitic indexing third person singular. In fact, there are no null-marked pronominals in the Tewa languages.

There is some small amount of dialect variation in Rio Grande Tewa for certain pronominal forms, which is indicated in the above table. The loss of the initial /g/ in the first person non-singular pronominals is phonologically motivated and the alternation is actively seen in the dialect at least. The alternation in the second person plural does not appear to be phonological and will be addressed in the reconstruction of chapter 0.

While the form and function of the intransitive proclitics is straightforward enough—the most straightforward of any of the paradigms, at least—they are not necessarily immutable. At least some dialects of Rio Grande Tewa may modify their proclitics in a negative construction. This modification appears to represent a former morphological increment added to the pronominal proclitic. In at least one dialect, the dialect, the original form of the negative prefix is no longer clear, but it is realized by lengthening the vowel of the intransitive proclitic and adding a falling tone. This has the effect of creating a unique series of pronominal proclitics, as seen in Table 11-10.

---

8 I have heard the third person plural used with an inanimate referent from a Tewa speaker. But, it was in an elicitation context and may reflect interference from the English target translation. It is possible though that there is meaningful distinction that has yet to be documented.
9 But see the reconstruction in chapter 0. The variant lacking the /g/ could instead represent a conservative form.
These pronominal forms are always accompanied by the negative enclitic -pí in the negation construction, as is the case in dialects that do not show such negative proclitic forms. This is seen in (16)a. These negative pronominal forms may also be accompanied by a negative increment wi= preceding the pronominal proclitic, as in (16)b.

(16)  

a.  

3S.ITR.NEG=be.sitting.S/D=NEG=AOR DIST 3S.POSS-REL  
S/he wasn't at home.

b.  

but NEG=1S.ITR.NEG=want.ST=NEG  
…but I don't want to.

The lengthened vowel and falling tone set these illustrated pronominal forms apart from the non-negative intransitive proclitics. It seems that not all dialects have this series, and many have replaced it with the proclitic wi=, still accompanied by =pí in a circumfixal construction. The negative pronominal proclitics probably represent the older negation construction, being more phonologically integrated into the pronominal proclitic. The wi= then probably developed from the indefinite modifier wi as a further reinforcement of negation.
11.3.2 Tewa Reflexive

The Tewa reflexive paradigm has a distribution very similar to that seen in Kiowa, although it may actually be used with more monovalent predicates in the Tewa languages. As its name indicates, the original function of these proclitics was probably to express an actual transitive reflexive or reciprocal event, as in the Arizona Tewa sentence in (17).

(17) Arizona Tewa transitive reflexive-reciprocal usage (Kroskrity 1985: 309)

\[
\begin{align*}
\text{nɛ́ hindi } & \text{seŋ ikʰɛ́di} \\
\text{nɛ́=i } & \text{seŋ i=kʰɛ́di} \\
\text{that=BS man 3S.RFL=hit.PF} \\
\text{This man hit himself.}
\end{align*}
\]

The pronominal indexation tends to be the only indicator of reflexive or reciprocal meaning in such constructions, although Tewa does occasionally make use of particles to clarify a reflexive versus reciprocal meaning. Note that unlike the corresponding Kiowa paradigm, the Tewa reflexive series is a unique set of proclitics, not shared with the transitive or any other paradigm language-internally.

More commonly occurring than the transitive reflexive use, a large number of active monovalent verbs in Tewa make use of the reflexive paradigm. The overwhelming majority of monovalent predicates that do not take the intransitive use the reflexive instead. This includes predicates expressing change of position (18)a, (voluntary and involuntary) bodily activity, including vocal actions (18)b, and manner of motion (18)c. The following examples are all from Rio Grande Tewa.
(18)  Rio Grande Tewa monovalent reflexive usage

a.  Change of position (Hoijer and Dozier 1949: 142)

\[
\begin{align*}
  \text{dé} \cdot \text{wínú} = \text{wínú} \\
  \text{1S.RFL=} \text{stand.up.PF}
\end{align*}
\]

I stood up.

b.  Vocal activity (Oke 1982: 29)

\[
\begin{align*}
  \text{nq} \cdot \text{t} \cdot \text{o} \cdot \quad \text{há} \cdot \quad \text{divísəŋhi'μु} = \text{ŋ} \\
  \text{3S.ITR=} \text{hear.ST} \quad \text{what.SB} \quad \text{3P.RFL=} \text{secret-talk.IPF=CPL}
\end{align*}
\]

and he heard what they were whispering.

c.  Manner of motion (Oke 1982: 5)

\[
\begin{align*}
  \text{hedi} \quad \text{owé} \cdot \quad \text{t} \cdot \text{ová}=\text{iyé} \cdot \text{piyé} \cdot \text{i}=\text{ã} \cdot \text{di} \\
  \text{and there cliff=} \text{up.to} \quad \text{3S.RFL=} \text{run.PF=} \text{SB} \quad \text{3S.RFL=} \text{support-stand.up.PF}
\end{align*}
\]

and he ran to the cliff and leaned against it.

Change of position, like standing up in (18)a, is construed as a transitive action effected upon oneself, and such predicates may also be used transitively. A vocal action such as whispering in (18)b may prototypically involve more than one participant, and thus may have a reflexive or reciprocal cast, even when no recipient of the vocalization is intended. In an active movement predication like run in (18)c, however, it is difficult to arrive at a synchronic reflexive analysis. The reflexive class is especially expanded in Tewa since all monovalent verbs derived by compounding a stem with the productive verbalizer \(\text{ʔuŋ do}\) require the reflexive series, a large proportion of verbs in the languages.

Arizona Tewa has expanded the reflexive series even more by also using the paradigm with verbs of position. This is in contrast to Rio Grande Tewa where such predications are indexed with the intransitive paradigm.
Verbs of position

a. Arizona Tewa (Kroskrity 1998: 106)
   \[he\-we\, k^b\-e\cdot\, i=k^w\-j\eta\]
   some clothing 3S.RFL=be.lying.P.ST
   There are some clothes lying.

b. Rio Grande Tewa (constructed example)
   \[h\-\, wí\, ?\-a\cdot\, nq\-k^w\-j\eta\]
   some.kind clothing 3S.ITR=be.lying.P.ST
   There are some clothes lying.

The documented Arizona Tewa in sentence in (19)a which uses the third person reflexive proclitic \textit{i=} would be translated into Rio Grande Tewa as in (19)b, which takes the intransitive third person proclitic \textit{nq=}. This appears to be a recent development in Arizona Tewa.

The forms of the reflexive pronominal indexation markers for the Tewa languages are given in Table 11-11. The same person and number categories as occur in the intransitive occur in the reflexive. Because the predicates with which the reflexive series occurs overwhelmingly take an animate participant, we do not find the plural use of the singular proclitics that occurs with inanimate referents in the intransitive paradigm.

Table 11-11: Tewa Reflexive Paradigms

<table>
<thead>
<tr>
<th></th>
<th>RGT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>dé()</td>
<td>déh ~ dí</td>
</tr>
<tr>
<td>2S</td>
<td>bí</td>
<td>bí</td>
</tr>
<tr>
<td>3S</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>1D</td>
<td>æŋ</td>
<td>æŋ</td>
</tr>
<tr>
<td>2D</td>
<td>dæŋ</td>
<td>dæŋ</td>
</tr>
<tr>
<td>3D</td>
<td>1P</td>
<td>íví ~ í</td>
</tr>
<tr>
<td>2P</td>
<td>úví ~ bí</td>
<td>óbí</td>
</tr>
<tr>
<td>3P</td>
<td>díví ~ dí</td>
<td>díbí</td>
</tr>
</tbody>
</table>
As we saw in the intransitive series, there is syncretism between the second and third person dual in both Tewa languages. Variation in Rio Grande Tewa forms is dialectal in nature while the variation in the Arizona Tewa first person singular is based on different forms given in different sources. It will prove pertinent to the reconstruction in chapter 0 that the plural A argument proclitic forms all show a bilabial-initial increment -ví= (RGT) / -bí=. The only exceptions are in those dialect forms on the right in Rio Grande Tewa where it appears the consonant has been elided and the vowel lengthened.

### 11.3.3 Tewa Transitive

The Tewa transitive paradigm is smaller in size than its counterpart in the other languages. This is because it eliminates distinctions in grammatical number in one or both arguments in certain configurations. However the Tewa languages do show some complexities that are unique to the Tewa branch.

Predicates that regularly take the transitive series consist of the usual suspects of active divalent predicates and perception verbs, just as in Kiowa. However, in Tewa we do find some exceptional cases among predicates of emotion where the experiencer is indexed as the O argument and the stimulus as the A argument, e.g. Rio Grande Tewa híŋ like.

(20)  

<table>
<thead>
<tr>
<th></th>
<th>Tewa (field notes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>1S=TOP x&gt;1=pumpkin-pie-like.PF</td>
</tr>
<tr>
<td></td>
<td><em>I like pumpkin pie.</em></td>
</tr>
</tbody>
</table>

b.  

| how=Q.FOC 3>2S=do.INC-like.PF |
| *What do you like to do?* |
As both of the sentences in (20) illustrate, the indexation of arguments is the reverse of that found in English and indeed the reverse of the indexation found in most other perception and emotion predicates in Tewa.

Interestingly, another set of verbs that regularly take the transitive pronominal proclitics are trivalent ditransitive predicates, including prototypical members like máγí (RGT) / më′gi (AT) *give, hand to*. With these verbs, the proclitic indexes the agent and recipient as A and O respectively and does not index the transferred object, as demonstrated in the Arizona Tewa sentence in (21).

(21) Arizona Tewa transitive trivalent indexation (Kroskrity 1985: 311)

\[
\begin{align*}
\text{'u} & \ k^\text{hóto} & \text{hë}\text{'i} & \text{sendi} & \text{wó} \ &= \text{mê}\text{gi} \\
\text{'u} & \ k^\text{hóto} & \text{hë}\text{'i} & \text{sen-di} & \text{wó} & \text{=mê}\text{gi} \\
\text{2S bracelet that man-AQT 3>2S=give.PF} & \\
\end{align*}
\]

*That man gave you a bracelet.*

The ditransitive verb takes the transitive proclitic wó′ which indexes the third person A argument expressed by hë′i sendi *that man* and the second person singular recipient ‘u *you*. The transferred object kʰóto is not marked on the predicate at all.

Finally, many verbs that express change of position using the reflexive proclitics of section 11.3.2 are also used with transitive proclitics to indicate the action is performed on a different entity. The forms in (22) contrast these functions in Rio Grande Tewa.

(22) Transitive and reflexive

a. Reflexive (constructed example)

\[
\begin{align*}
\text{dé} & \ =k^\text{'u} \? \\
\text{1S.RFL=lay.S/D.PF} & \\
\text{I lay down}. & \\
\end{align*}
\]
b. Transitive (Speirs 1966: 84)

\[
\begin{align*}
\text{dók’û} & \\
\text{dó=k’û} & \\
1\text{S}>3\text{S}=\text{lay.S/D.PF}
\end{align*}
\]

I set it down, laid it down.

The same verb stem \text{k’û} lay \((S/D)\) is used in both sentences. In (22)a, however, the verb takes a reflexive proclitic and the action is a monovalent change of position. In (22)b, on the other hand, a transitive proclitic is used and the action is a divalent caused change of position.

As with the complex paradigms in Kiowa, the pronominal forms of the transitive paradigm are most easily handled by dividing them amongst a number of tables. Table 11-12 presents those proclitics that index a first or second person O argument.

Table 11-12: Tewa Transitive \(X>SAP\) Paradigm

<table>
<thead>
<tr>
<th>A &gt; O</th>
<th>RGT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>(I&gt;2S)</td>
<td>wí</td>
<td>wí</td>
</tr>
<tr>
<td>(I&gt;2D)</td>
<td>wáŋ</td>
<td>wí ~ wobén</td>
</tr>
<tr>
<td>(I&gt;2P)</td>
<td>wê'</td>
<td>wí ~ wobé'</td>
</tr>
<tr>
<td>(X&gt;I)</td>
<td>dí</td>
<td>dí</td>
</tr>
<tr>
<td>(3&gt;2S)</td>
<td>wó'</td>
<td>wó'</td>
</tr>
<tr>
<td>(3&gt;2D)</td>
<td>wóvæŋ</td>
<td>wobén</td>
</tr>
<tr>
<td>(3&gt;2P)</td>
<td>wóvë'</td>
<td>wobé'</td>
</tr>
</tbody>
</table>

Number in these pronominal proclitics is only ever distinguished for a second person O argument, never for an A argument or for a first person O argument. Moreover, when the O is first person, only a single form is used no matter whether the A is second or third person. This is similar to what we saw in the \(X>SAP\) paradigm for Kiowa, but much more reduced. The variation in the \(I>2NS\) proclitics of Arizona Tewa stems from variable reports in the sources, Yegerlehner (1957) reporting contrastive forms while Kroskrity
(1977, 1993, *inter alia*) reports only a single form \(\text{wi}^=\) used for all instances of \(I>2\), number for both arguments being left unspecified.

Tewa, unlike what we will see in Tiwa and Towa, does have pronominal forms to index \(3>1\) and \(3>2\). This part of the paradigm has only minimal contrasts, as noted, as well as some interesting morphosyntactic features. All of the Tewa pronominal proclitics in Table 11-12 above are accompanied by a case marker on any lexical expression of an A argument in the clause\(^{10}\).

(23) Rio Grande Tewa case marking and \(X>SAP\) indexation (Oke 1982: 8, 32)

a. \(\text{pu}^t\text{a}^=\text{e} \text{ ráhá}^\gamma \quad \text{díhô} \text{ yó}^\gamma \text{qη} \)
\(\text{pu}^-\text{t}^\gamma \text{a}^=\text{e}^-\text{di}=\text{á}=\text{há}^\gamma \quad \text{dí}=\text{hô} \text{ yó}^\gamma \text{qη} \)
rabbit-dry=\(\text{DIM-AGT=TOP=then}\quad X>1=\text{lie.to.PF}\)
*That doggoned little rabbit has lied to me again.*

b. \(\text{ŋy}^\gamma \text{kavî} \quad \text{sündarori} \quad \text{wiwó}^\gamma \text{a}^\gamma \text{gimpí} \)
\(\text{ŋy}^\gamma=\text{á} \quad \text{kavî} \quad \text{sündaro}=\text{di} \quad \text{wi}=\text{wó}=\text{a}^\gamma \text{gín}=\text{pí} \)
\(\text{2S=TOP DUB soldier=AGT NEG=3>2S=respect.PF=NEG}\)
*I guess yours soldiers won't obey you.*

Both of the sentences in (23) take one of the \(X>SAP\) proclitics, \(\text{dí}=X>1\) in (23)a and \(\text{wó}^\gamma=3>2S\) in (23)b. On top of this, the third person arguments \(\text{pu}^t\text{a}^=\text{e} \text{ doggoned little rabbit}\) in (23)a and \(\text{sündaro soldier}\) in (23)b are required to take the agentive case suffix \(-\text{di}/\text{dí}\)\(^{11}\) when acting upon a first and second person argument respectively. These case markers are always required with a lexically expressed A argument with these \(X>SAP\) pronominals.

---

\(^{10}\) Kroskrity (1985a) thus classifies these Arizona Tewa proclitics as part of his “passive” paradigm. However, it is only co-occurrence with this case marker that motivates this passive analysis. The Tewa case marker is far more sensitive to animacy than is its counterpart in the Tiwa and Towa languages, which suggests a reanalysis and grammaticalization beyond a passive or inverse voice construction (see chapter 0).

\(^{11}\) The tone on this suffix assimilates to that of the preceding syllable: the suffix is high if preceded by high, and low elsewhere.

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When the O argument is third person, the Tewa languages show more elaboration in person and number, but still reduced from what is found in the other languages. These transitive proclitics can be divided into two sets for presentation purposes. In the first set, seen in Table 11-13, number is distinguished for the third person O argument, contrasting singular, dual, and animate plural. The A argument is first or second person singular or third person.

Table 11-13: Tewa Transitive X>3 Paradigm #1

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>RGT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1s</td>
<td>3s</td>
<td>dó</td>
<td>dó</td>
</tr>
<tr>
<td>2s</td>
<td>ṉ</td>
<td>ṉ</td>
<td>ṉ</td>
</tr>
<tr>
<td>3</td>
<td>ó</td>
<td>ó</td>
<td>ó</td>
</tr>
<tr>
<td>1s</td>
<td>3d</td>
<td>dovê̱</td>
<td>dovê̱</td>
</tr>
<tr>
<td>2s</td>
<td>ovê̱</td>
<td>mqbê̱</td>
<td>mqbê̱</td>
</tr>
<tr>
<td>3</td>
<td>ovê</td>
<td>obê</td>
<td>obê</td>
</tr>
</tbody>
</table>

Note that the third person A argument makes no number distinctions in the above forms. Also, as in the intransitive paradigm, inanimate third person plural referents are marked with the singular proclitics, never with the 3A plural forms. Dual referents of any animacy, however, do appear to be indexed with the dual proclitics. Finally, second and third person singular A arguments are expressed homophonously in Rio Grande Tewa, but not in Arizona Tewa, when the O argument is dual or animate plural.

The other set of transitive X>3 proclitics is given in Table 11-14. In these forms no number contrast is expressed in the third person O argument. The A argument is first or second person dual or plural or third person singular, dual, or plural.
Table 11-14: Tewa Transitive $X>3$ Paradigm #2

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>RGT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>3S</td>
<td>i</td>
<td>máŋ</td>
<td></td>
</tr>
<tr>
<td>1D</td>
<td>d̞ŋ</td>
<td>d̞ŋ</td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>d̞ŋ</td>
<td>d̞ŋ</td>
<td></td>
</tr>
<tr>
<td>3D</td>
<td>ê·</td>
<td>i·</td>
<td></td>
</tr>
<tr>
<td>1P</td>
<td>bĩŋ</td>
<td>obĩŋ</td>
<td></td>
</tr>
<tr>
<td>3P</td>
<td>dê·</td>
<td>dî·</td>
<td></td>
</tr>
</tbody>
</table>

As in the intransitive and reflexive paradigms, second and third person dual A arguments are expressed via the same form. Note from the configurations of the above two transitive paradigms that number of the O argument is never expressed when the A argument is explicitly non-singular.

Considering the above paradigms, it should be noted that the Tewa languages have a distinction in the $3>3$ part of the paradigm that is not found in its sister languages.

The forms given where the A argument is explicitly marked for number, third person singular (i= (RGT) / máŋ = (AT)), dual (d̞ŋ = (RGT) / d̞ŋ = (AT)), and plural (dê = (RGT) / dî = (AT)) are used to express especially when the A argument is animate and the O argument is inanimate. However, they are also used generally when the A argument simply has greater topicality than the O argument. These forms are illustrated for Rio Grande Tewa in the sentences in (24).


a. wí thá· hâ·, iví sa’yâ·  iʔgəŋpə·ʔihe·ri…
   wí thá· hâ· iví sa’yâ·  i=ʔgəŋ-pə·ʔihe·di
   INDF day then 3S.POSS grandmother 3S>3=atole-make.PF=when
   One day, when his (Fireside Boy’s) grandmother made atole…
b. ip’ ox*aye’ihe’ri  p’i ri bo’  ḻmp’o  sar’i,  

heri

i=p’o-x*aye’ihe’ri  p’i ri=bo  ḻŋ=p’o-su-dí

3S>3=water-lower.PF=when yield=ORI 3>>3S=water-be.set.P-ST.RES and

itege’ihe’rá,  t’ákhkí   i  p’o  ḻŋwé’pi

i=tege=3ihe’di=á  t’ákhkí  i  p’o  ḻŋ=wé=pi

3S>3=pull.PF=when=TOP all DF water 3>>3S=again=exit.PF

When he dipped it in, it filled with water; but when he drew it out, all the water ran out.

c. ṭįŋ  ḻhú’á  divíkhorámí ṣàq’,  ṭįŋ  p’ómbe  dê=mù’ihe’ri

拴 dedication to the top 3 P.RFL=elbow-dig.PF DF I skull 3P=3=see.PF=when

The wolves started nudging each other with their elbows when they saw the skull.

d. heriba  dê=mù?  ṭį púwéré, heri  ṭi tárá  nários...

hedi=ba  dê=mù?  ṭį púwédë  hedi  ṭi tádá  nù=tú

and=HSY  3P=3=see.PF DF chair and DF father 3S=say.PF

And they saw the chairs, and the father said...

Examples (24)a and (24)b illustrate the 3S>3 proclitic i=, the former with an inanimate mass noun, ḻaqẹŋ atole, as the O argument, and the latter with a singular inanimate noun as the O (a woven basket, mentioned in the previous sentence). Examples (24)c and (24)d show the 3P>3 proclitic dê=, the former with a singular inanimate O argument p’ómbe-skull, and the latter with a plural inanimate O argument ṭį púwéré the chair(s).

Usually if the O argument is animate or of greater topicality in general, the 3>3 proclitics of Table 11-13 are used instead, where the number of the O argument is explicit while the number of the A argument is suppressed. Thus in Tewa, third person arguments of greater topicality are marked by more elaborate number differentiation in the pronominal proclitics. Also in this construction, the A argument is case marked with the -di/dí agent suffix seen above. These O-prominent proclitics are illustrated in (25) for Rio Grande Tewa.

a. wí thá ba ʔíví jiyáří ó’tuʔŋ, “ná’i ʔagąŋ
wí thá:ba ʔíví jiyá-dí ó=tuʔŋ ná’i ʔagąŋ
INDF day=HSY 3S.POSS mother-AGT 3>3s=tell.PF this=BS atole

mąqąhú: ʔuví jiyák’ijo’piye ʔo’ ʔohke’
mąq=hú: ʔuví jiyák’i=jo=vi=ʔi=piye ʔo’ ʔohke’
2s>x>3s=IMPr. 2s.POSS=take.IMP grandmother=POSS=BS=toward DIST Ohkay

One day her mother said to her, “Take this atole to your grandmother’s house at Ohkay.

b. heri ʔi pu’e ri párébo’ ó’můʔ ʔi P’óséx’â. Sedó
heri ʔi pu’=e=di páré=bo ó=můʔ ʔi P’óséx’â. Sedó
and DF rabbit=DIM-AGT first=MIR 3>3s=see.PF DF Coyote Old.Man
The little rabbit saw Old Man Coyote first...

c. ʔá’ho’y ʔk’o’ʔįŋ ʔuŋhaɡginná
ʔá=á=ho ʔk’o’=j=įŋ ʔuŋ=haɡginná
DF=TOP=already 3>3s=eat=POT=CMP 3>>3s=know.ST
He knew he’d get eaten (by the wolves)...

In all three of the Rio Grande Tewa sentences in (25), the animate O arguments are indexed with the O-marking proclitic ʔó=, all referring to major characters in the respective narratives. The case marker is seen in (25)a and (25)b, where the A argument is overtly mentioned. Indeed in Tewa the A argument is case marked whenever the O argument is animate.

Although this contrast in 3>3 forms is unique to the Tewa branch, we will see an alternation in voice in Tiwa and Towa that is functionally comparable.

11.3.4 Tewa Intransitive-Dative

The function and distribution of the Tewa intransitive-dative is comparable to what we saw in Kiowa. The series is primarily used to add a dative argument to an otherwise intransitive predicate. Very few verbs take the intransitive-dative as their “default” paradigm. However, the constructions in which it occurs are quite frequent.
The primary use of the intransitive-dative within Tewa appears to be the expression of the possessor of the single participant of the intransitive. The S argument tends to be inanimate in such constructions while the D argument tends to be animate.

The sentence in (26) demonstrates this possessive use of the intransitive-dative with an inanimate possessum in Rio Grande Tewa.

(26) Rio Grande Tewa Possession (Harrington 1947: 113)

"há·wínnaŋ ʔuví k’u·fé ʔummuŋ '?' kįŋ ő·cikáyiŋ
"há·wín=qŋ ʔubí k’u=⁻fé ʔηŋ=mųŋ '?' kįŋ ő=cikáyiŋ
what.kind=Q 2S.POSS rock-stick 3>>2S=be.ST like.this 3>3S=ask.PF
"What kind of weapon do you have?" he asked.

Here the intransitive-dative proclitic ʔηŋ = 3>>2s is attached to a copula mų· be for the expression of predication of possession. This construction is the most common when the possessum is inanimate. When the possessed entity is animate, however, very often the possessor will not be indexed on the main predicate. Instead, some other means of expressing possession is used, as seen in the Rio Grande Tewa attributive possessive pronouns in (27).

(27) Rio Grande Tewa possession without indexation (Harrington 1947: 114)

ʔuví tárá nqví tárá wáʔ nqmu·
ʔubí tádá nqbi tádá wáʔ nq=mų·
2S.POSS father 1S.POSS father also 3S.ITR=be.ST
You father is also my father.

The copula here takes plain intransitive third person singular indexation while the possession of both the subject and the predicate nominal is expressed via possessive
pronouns ʔuví *your and nqví *my. However, it can be noted in (26) above that these pronouns can occur coreferentially with the possessor in an intransitive-dative.12

While it appears that any virtually intransitive verb may occur with an intransitive-dative pronominal to express possession, these pronominals occur most frequently on stative predicates, copulas, and verbs of position. The latter two in particular are common in Tewa as the primary means of expressing the predication of possession as well as co-occurring with attributive possession. The sentences in (28) illustrate the intransitive-dative proclitics marking possession on main verbs.

(28)  
Rio Grande Tewa predication and possession

a. heriho' ʔiví p'óséxʷ=ʔé=á  t'ákhí ōmp'o·sa'a·t'áqhą́ŋ
   and.so 3S.POSS Coyote=DIM=TOP all 3>>3s=die.of.thirst.PF
   ...and her little coyotes died of thirst.

b. wí'ikʷq'do'pirího'  wíriŋm'ó·yí'pí
   wí=i=kʷq'do=pí-dí=ho
   NEG=3S.RFL=rain.IPF=NEG-SB=already  NEG-3>>3P=water-be.about.ST=NEG
   dê p'o·sùwā́ří
   dê=p'o·-sùwā́=í=dí
   3P>3=water-drink-POT-SB

Since it hadn't rained, there wasn't any water for them to drink.

Example (28)a finds the intransitive-dative proclitic ōmk=3>>3s attached to an active verb sa'a·t'áqhą́ŋ *die of thirst serving as the main predicate. Note in this case that the possessum is animate. In (28)b the proclitic díŋ=3>>3p marks an inanimate possessum on a stative verb of position yíp *be about, walk about.

The intransitive-dative proclitics can only be used in Tewa in place of the intransitive series on a monovalent predicate. It does not appear that a predicate that

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12 The Tewa languages also have a possessive enclitic -bí ~ -ví which is affixed to an NP expressing a possessor. Like the possessive pronouns, such possession-marked NPs may co-occur with the intransitive-dative proclitics.

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normally takes the reflexive series can take the intransitive-dative for the same reasons as discussed in section 11.2.4 for Kiowa.

While Tewa does not have a construction like that seen in Kiowa to mark lack of volition or control of an event, those few predicates that take the intransitive-dative paradigm by default do appear to have similar semantic properties. These predicates in Tewa include non-agentive mental states and processes as well as modal concepts, as illustrated in (29).

(29) Rio Grande Tewa intransitive-dative predicates

\[ \text{?ôrê} \quad \text{forget} \quad \text{?æ}\text{?} \quad \text{should} \]
\[ \text{hăngînñî} \quad \text{know} \quad \text{kori} \quad \text{be able to} \]

This list is not comprehensive, but a fuller list would not be all that much longer. The experiencer is indexed as the dative argument. Because the Tewa proclitics do not actually index person or number information for the non-dative argument, these predicates are not any more complex morphologically than intransitive or reflexive verbs.

Table 11-15 presents all of the pronominal forms for the intransitive-dative paradigms of Rio Grande Tewa and Arizona Tewa. The D argument shows the normal three-way contrast in person (first, second, third) and number (singular, dual, plural). Because the D argument is always animate, there is no complexity regarding the expression of number among inanimate referents.
Table 11-15: Tewa Intransitive-Dative Paradigms

<table>
<thead>
<tr>
<th>D ↓</th>
<th>RGT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>dîŋ</td>
<td>dîŋ</td>
</tr>
<tr>
<td>2S</td>
<td>ū̑ ~ ūŋ</td>
<td>ū̑h</td>
</tr>
<tr>
<td>3S</td>
<td>ūŋ ~ ŏŋ</td>
<td>ū ~ ūŋ</td>
</tr>
<tr>
<td>1D</td>
<td>gæŋ ~ ąŋ</td>
<td>gâh ~ géh</td>
</tr>
<tr>
<td>2D</td>
<td>dæŋ</td>
<td>dēh</td>
</tr>
<tr>
<td>3D</td>
<td>dêŋ</td>
<td>dēŋ</td>
</tr>
<tr>
<td>1P</td>
<td>gin ~ įŋ</td>
<td>gîh</td>
</tr>
<tr>
<td>2P</td>
<td>ūŋ</td>
<td>ŏh</td>
</tr>
</tbody>
</table>
| 3P  | dîŋ | dó ~

The use of the Tewa intransitive-dative series is licensed by the presence of two arguments, but as shown in the table, the proclitics themselves only overtly index the D argument. This paradigm is thus no more elaborate than the intransitive or reflexive series in the two Tewa languages. It even shows the same conflation of second and third person dual, at least in Rio Grande Tewa\(^{13}\). The alternations shown in Rio Grande Tewa are dialectally and phonologically motivated. Those in Arizona Tewa are based on reports from different sources.

The main thing to note about the form of the Tewa intransitive-dative proclitics, aside from the lack of number marking for the S argument, is the clitic-final /ŋ/ seen in almost every form. While there are non-dative proclitics that end in /ŋ/, this increment does appear to have a strong correlation with the expression of the dative, as we will also see in the next section. Chapter 0 discusses the probable source of this element.

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\(^{13}\) I do wonder about the Arizona Tewa pronominals listed with a final /h/. Are these the actual phonemic forms or were these forms found in a context where laryngealization applied to a final nasal? If the latter, then the /h/ should actually be /ŋ/ and the merger of second and third person dual would also be found in this language as well. I do not have an answer to this at present.
11.3.5 Tewa Transitive-Dative

The transitive-dative is the last of the Tewa paradigms that is comparable to those found in other Kiowa-Tanoan languages. As in Kiowa, it is effectively a cross between the transitive and the intransitive-dative, a series that expresses a transitive event with a third core participant added. While this means increased formal complexity in the other three branches, in Tewa the transitive-dative shows the same level of complexity as the basic transitive, even a little less.

As in the other languages, the function of the D argument added in the transitive-dative is to express beneficiaries (30)a, recipients (30)b, and possessors (30)c, as the following Rio Grande Tewa sentences illustrate.

(30) Rio Grande Tewa transitive-dative functions
a. Beneficiary dative (Oke 1982: 24)

\[
\begin{align*}
&\text{\'o co'wa nq'æ'riba} & \text{wiyá ūŋxā'wŋŋ} \\
&\text{\'o co'wa nq=\'q-di=ba} & \text{wiyá ūŋ=xa'wŋŋ} \\
\text{DIST near 3S.ITR=come.IPF-SB=HSY again 3S=X>3S=sing.PF}
\end{align*}
\]

When she got near (to the Meadowlark), he sang for her again

b. Recipient dative (Harrington 1947: 114)

\[
\begin{align*}
&\text{næ'áho' } & \text{næ'í} & \text{cé=e} & \text{wïŋyo'qmi} \\
&\text{næ'á=\'ó=ho' } & \text{næ'í} & \text{cé=e} & \text{wïŋ=yo'qmi} \\
now=TOP=already this=BS dog=DIM 1>X>2S=leave.POT
\end{align*}
\]

And so now I shall give this little dog to you.

c. Possessive dative (Harrington 1947: 113)

\[
\begin{align*}
&\text{"qvi' } & \text{pá'rá wïmmųŋį!} & \text{kiŋ ō-tu'qŋ} \\
&\text{qvi-\'í } & \text{pá'rá wïŋ=munį } & \text{kiŋ ō-tu'qŋ} \\
&\text{2S.POSS-BS first 1>X>2S=see.POT like.this 3>3S=tell.PF}
\end{align*}
\]

"Let me see yours first!" he said to him.

The beneficiary and possessive functions are probably the more frequent. As indicated in section 11.3.3, ditransitive predicates expressing transfer (and thus, recipients) are typically indexed with transitive proclitics. Indeed, the interpretation of the construction
in (30)b could be considered ambiguous between a recipient reading and a beneficiary reading. Also, as we saw in Kiowa and will find in Tiwa and Towa, a dative may only express the possessor of the O argument, never of the A argument.

There do not appear to be many predicates that take the transitive-dative paradigm in their most basic usage. Those few that do appear to be motivated by the semantics of indirect affectedness as we saw in Kiowa. However, because the O argument does not have any formal reflex within the transitive-dative indexation, there are not the same formal quirks of non-referential indexing as we find in the other languages.

Functionally, the A and the D arguments both tend to be animate and highly salient referents while the O argument tends to be inanimate more often than not. These semantic properties are borne out by the formal indexation we see in the pronominal proclitics. The size of the paradigm and the configurations of person and number actually encoded lead to the same presentational design as was seen in the transitive.

The less elaborated portion of the paradigm involves the speech act participants indexed as the D argument, shown in Table 11-16. We find the same lack of number and person specification as with the transitive counterparts.

Table 11-16: Tewa Transitive-Dative \(X>SAP\) Paradigm

<table>
<thead>
<tr>
<th>A &gt; O&gt;D</th>
<th>RGT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&gt;X&gt;2s</td>
<td>wîŋ</td>
<td>wîŋ</td>
</tr>
<tr>
<td>1&gt;X&gt;2d</td>
<td>wâŋ</td>
<td>wobêŋ</td>
</tr>
<tr>
<td>1&gt;X&gt;2p</td>
<td>wê'</td>
<td>wobê'</td>
</tr>
<tr>
<td>X&gt;X&gt;1</td>
<td>dîŋ</td>
<td>dîŋ</td>
</tr>
<tr>
<td>3&gt;X&gt;2s</td>
<td>wôŋ</td>
<td>wôŋ</td>
</tr>
<tr>
<td>3&gt;X&gt;2d</td>
<td>wóvêŋ</td>
<td>wobêŋ</td>
</tr>
<tr>
<td>3&gt;X&gt;2p</td>
<td>wôvê'</td>
<td>wobê'</td>
</tr>
</tbody>
</table>
Number is never specified for the A argument, nor for a first person D argument. In contrast, a three-way number distinction is always made for a second person D argument. When the D is first person, there is also no specification for person of the A argument. Note too that many of the pronominal forms in both Tewa languages are actually identical to their transitive counterparts. The only exceptions are \( \text{wîŋ} = \text{(RGT) / wíŋ} = \text{(AT)} 1>X>2s, \text{díŋ} = X>X>1, \) and \( \text{wóŋ} = \text{(RGT) / wóŋ} = \text{(AT)} 3>X>2s, \) which appear to derive from transitive \( \text{wi} = 1>2s, \text{dí}=X>1, \) and \( \text{wó}=3>2s \) respectively by adding a dative marker \(-ŋ=\).

When the D argument is third person, we also find a system very similar to the transitive, although with one important simplification. As in the transitive, these pronominals can be divided into two sets on the basis of number distinctions in the non-A argument. Table 11-17 presents those proclitics where a three-way number contrast is maintained for the D argument.

### Table 11-17: Tewa Transitive-Dative X>X>3 Paradigm #1

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>RGT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>3S</td>
<td>dôŋ</td>
<td>dôŋ</td>
</tr>
<tr>
<td>2S</td>
<td>3S</td>
<td>máŋ</td>
<td>máŋ</td>
</tr>
<tr>
<td>3</td>
<td>3S</td>
<td>ôŋ</td>
<td>ôŋ</td>
</tr>
<tr>
<td>1S</td>
<td>3D</td>
<td>dovæŋ</td>
<td>dobéŋ</td>
</tr>
<tr>
<td>2S</td>
<td>3D</td>
<td>ovæŋ</td>
<td>mqbéŋ</td>
</tr>
<tr>
<td>3</td>
<td>3D</td>
<td>ově'</td>
<td>obě'</td>
</tr>
</tbody>
</table>

In this set the A argument is first or second person singular while number is unspecified for a third person A argument. In Rio Grande Tewa there is no distinction between second and third person singular A arguments when the D is non-singular, but there is
such a contrast in Arizona Tewa. In the second set of proclitics in Table 11-18, no
number distinctions are made for the third person D argument.

Table 11-18: Tewa Transitive-Dative X>X>3 Paradigm #2

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
<th>RGT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1D</td>
<td>3</td>
<td>ãŋ</td>
<td>ñå</td>
</tr>
<tr>
<td>2D</td>
<td>dãŋ</td>
<td>ñðã</td>
<td></td>
</tr>
<tr>
<td>1P</td>
<td>êˑi</td>
<td>ì</td>
<td></td>
</tr>
<tr>
<td>2P</td>
<td>bĩŋ</td>
<td>obĩŋ</td>
<td></td>
</tr>
</tbody>
</table>

In this series the A argument is first or second person non-singular. Just as in the
transitive, when the A argument is explicitly non-singular, no number distinctions are
made in the third person non-A argument. Distinct from the transitive, however, there are
no proclitics that specify the number of a third person A argument anywhere in the
paradigm. This means that there is no alternation in 3>X>3 proclitics on the basis of
animacy and discourse salience. When two third persons are involved, it is always only
the D argument that is specified for number, suggesting it tends to be given the higher
discourse saliency.

It can be observed that all of the above forms are identical to those found in the
transitive paradigm except for those proclitics indexing Xs>X>3s, which are distinctive.
As with the proclitics indexing SAPs, though, two of these distinctive forms do appear to
be derived from the transitive by addition of a dative marker -ŋ=: dôŋ= (RGT) / dôŋ= (AT)
1s>X>3s from do= 1s>3s and ôŋ= (RGT) / ôŋ= (AT) 3>X>3s from ô= 3>3s. The
second person proclitic is unique in the Tewa paradigms14.

---

14 Actually, mãŋ= 2s>X>3s in Arizona Tewa is homophonous with the transitive form indexing 3s>3.
These may be related, cf. chapter 0.
Another feature to note in Tewa is that the transitive-dative proclitics never index any information about the O argument, even though they are licensed by the presence of such a reference. This is one of the major points of reduction within the Tewa paradigms as a whole.

Finally, because the A and D arguments are both virtually always animate, any lexical expression of the A argument will always take the agent-marking case enclitic -di/dí. See chapter 0 for further information about the distribution of this case marker and the constructions in which it appears.

11.3.6 Rio Grande Tewa Transitive-Dative Reflexive

The Tewa languages, while certainly less elaborated than the other branches of the language family in the more complex paradigms above, do have some series of pronominal proclitics that have no unique functional equivalent in Kiowa, Tiwa, or Towa. One is indeed apparently only to be found in Rio Grande Tewa, while the other type of pronominal series is seen in both Rio Grande and Arizona Tewa and will be addressed in the next section.

The uniquely Rio Grande Tewa paradigm is a transitive-dative-reflexive series used when the A and the D argument of a transitive-dative construction are coreferential. Since transitive-dative pronominals never index the number or person of the O argument and the other two arguments are coreferential, the paradigm is the same size as the intransitive, reflexive, and intransitive dative series, as Table 11-19 illustrates.
As is common in Tewa paradigms, the second and third person dual are conflated. The alternation in the second person singular may be partly based on dialect and partly on speaker variation. The reader may recognize some of the specific forms from other paradigms, but the first and second person singular forms, at least, are only found in this set. This series is used when the A argument performs a transitive action for him- or herself as beneficiary (31)a or performs a transitive act on his or her own possession (31)b, as illustrated in the following sentences.

(31) Rio Grande Tewa transitive-dative reflexive usage

a. Reflexive beneficiary (Oke 1982: 14)
   
   \[
   \begin{align*}
   \text{næ} & \quad \text{θa} & \quad \text{nq} & \quad \text{døŋxú} & \quad \text{sæ} & \quad \text{pa}^\prime \\
   \text{næ} & \quad \text{θa} & \quad \text{nq} & \quad \text{døŋ=xú=sæ-pa}^\prime \\
   \text{now day 1S} & \quad 1\text{S.DRFL=corn-stew-make.IPF} \\
   \text{I've been making posole (for myself) today.}
   \end{align*}
   \]

b. Reflexive possession (Speirs 1966: 95)
   
   \[
   \begin{align*}
   \text{døndamúnde} & \\
   \text{døŋ=dá=múnde} & \\
   \text{1S.DRFL=surely=see.IPF} \\
   \text{I'm surely looking at something of mine.}
   \end{align*}
   \]

I know of no verbs that take this series as their basic paradigm. However, certain transitive verbs which may otherwise occur with the regular transitive paradigm do often occur with this series even with no explicit reflexive benefactive motivation within the discourse. This is especially common with verbs of ingestion and alternatively transitive or ditransitive acquisition verbs like buy or get. This usage is seen in (32).
(32) Rio Grande Tewa reflexive use in divalent predicates

a. Acquisition and ingestion (Oke 1982: 13)

\begin{align*}
\text{heriho}'ba \quad \text{nqṭú}, & \quad "h\text{ḥündirq}q\quad \text{doŋ}x^*\text{ahkéyí} \quad \text{hæ}=i \quad \text{ké}=su \\
\text{heriho}'=ba \quad \text{nq}=t\ddot{u} \quad \text{h\text{ḥündidæq}}\quad \text{doŋ}^*=\text{x^*ahkéyí} \quad \text{hæ}=i \quad \text{ké}=su \\
\text{and.then}=\text{HSY} & \quad \text{3S.ITR}=\text{say.PF} \quad \text{how} \quad \text{1S.DRFL}=\text{get.POT} \quad \text{that}=\text{BS cheese} \\
\text{doŋk'óíri}? & \\
\text{doŋ}=\text{k'ó'-i-dí} \\
\text{1S.DRFL}=\text{eat-POT-SB} \\
\text{So he said, "How can I get that cheese so I can eat it?"}
\end{align*}

b. Ingestion (Nambé Tewa (field notes))

\begin{align*}
\text{ti mæ} & \quad \text{mp'o}=s \ddot{w} \\
\text{ti mæ} & \quad \text{mp}=s \ddot{w} \\
\text{Q} & \quad \text{2S.DRFL}=\text{water-drink.PF} \\
\text{Did you drink water?}
\end{align*}

Example (32)a illustrates both an acquisition verb \text{x^*ahkéyí} \text{get} and an ingestion verb \text{k'óí} \text{eat} with a transitive-dative-reflexive proclitic indexing a first person performing a transitive action for himself. The sentence in (32)b shows usage of the dative-reflexive with a second person interrogative. While it is perfectly grammatical to express such sentences with simple transitive indexation, the transitive-dative reflexive seems to be more commonly used.

11.3.7 Tewa Imperative Proclitics

The type of pronominal found in both Arizona Tewa and Rio Grande Tewa, but in no other Kiowa-Tanoan language, is the imperative series. In terms of argument indexation, there are imperative pronominals to correspond to the different series presented above. One could therefore consider them to be several independent series of proclitics, sub-series within the above primary series that have a specialized distribution, or a single imperative series with diverse argument structures encoded. It doesn’t really matter for my purposes here. In any case these pronominals occur only with the
imperative verb stem in the imperative construction. Conversely, the imperative verb stem occurs only with the imperative pronominal proclitics. As such, the S or A argument is necessarily second person, which may or may not make distinctions for number, while O or D arguments may have different person and number references. Some pronominal forms used in the imperative series are identical to those found in the corresponding non-imperative paradigm, but some are wholly unique to the imperative (which of course is the reason for differentiating the imperative series).

The first set, and probably the most frequently used one, is composed of the latter type of wholly unique forms. It can be called the monovalent imperative series. It is used in the imperative construction with verbs that take either the intransitive or reflexive proclitics in the non-imperative constructions. That is, all non-dative monovalent predicates are treated the same in the imperative. It is also used for the imperative of transitive reflexive or reciprocal use of the reflexive series. These functions are illustrated in (33).

(33) Rio Grande Tewa monovalent imperative usage
   a. Intransitive (Oke 1982: 40)
      ya  ɑcuwɑve
      ya  ɑ=cuwɑve
      HORT 2S.IMP=enter.IMP
      Go in!

   b. Monovalent reflexive (Speirs 1966: 135)
      bikʷ'ɑʔ
      bĩ=kiʷ'ɑʔ
      2P.IMP=sit.down.P.IMP
      You (pl.) sit down!
c. Transitive reflexive (Speirs 1966: 163)

\[ \text{óc'á'} \]
\[ \dot{o}=c'a' \]
\[ 2S.\text{IMP}=\text{cut.IMP} \]

_Cut yourself!

The verb in (33)a normally takes the intransitive paradigm, the one in (33)b takes the reflexive when expressing a monovalent predicate, while the verb in (33)c is transitive in reflexive usage. All take the same pronominals in the imperative, though.

These imperative forms are limited to encoding a single second person S argument (or reflexive A) which makes a three-way distinction in number, as shown in Table 11-20.

Table 11-20: Tewa Monovalent Reflexive Paradigms

<table>
<thead>
<tr>
<th>S/A</th>
<th>RGT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2S</td>
<td>ó</td>
<td>ó</td>
</tr>
<tr>
<td>2D</td>
<td>bá</td>
<td>bá</td>
</tr>
<tr>
<td>2P</td>
<td>bí</td>
<td>bí</td>
</tr>
</tbody>
</table>

The tone in the Arizona Tewa forms is determined by polar dissimilation: it is high if the following tone is low and low if the following tone is high. The tone remains constant in the Rio Grande Tewa pronominal forms.

The transitive imperative is a series of mixed forms, some occurring in the regular transitive paradigm and some occurring only in this imperative paradigm. While the A argument is again limited to second person, it never shows a three-way number distinction. These proclitics show either no number distinction or only a singular versus non-singular contrast in the second person. Number in the O argument also shows mixed treatment as can be seen in Table 11-21.
Table 11-21: Tewa Transitive Imperative Paradigms

<table>
<thead>
<tr>
<th>A&gt;O</th>
<th>RG</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&gt;1</td>
<td>dí</td>
<td>dí</td>
</tr>
<tr>
<td>2S&gt;3S</td>
<td>nų</td>
<td>nų</td>
</tr>
<tr>
<td>2S&gt;3D</td>
<td>ovêŋ</td>
<td>bíŋ</td>
</tr>
<tr>
<td>2S&gt;3P</td>
<td>ovê</td>
<td>bíŋ</td>
</tr>
<tr>
<td>2NS&gt;3</td>
<td>bíŋ</td>
<td>nų / bíŋ</td>
</tr>
</tbody>
</table>

There is no number distinction at all for either argument when the O is first person. This form is shared with the regular transitive paradigm. In Rio Grande Tewa there is also no number contrasts made for a third person O argument when the second person A is non-singular. When the A is singular, however, there is a full three-way contrast for a third person animate O argument. An inanimate third person O argument will use the 2S>3S form for both singular and plural. In Arizona Tewa, on the other hand, there is apparently never a number distinction in the second person argument and the two third person forms contrast a singular (nų=) and a non-singular (bíŋ=) third person O argument. The tone on these two Arizona Tewa forms again dissimilates from the following tone: the proclitic is high if followed by a low tone and low if followed by a high tone. These pronominals and their Rio Grande Tewa cognates nų= and bíŋ= are similar but not identical to the corresponding regular Transitive forms.

Illustration of these Rio Grande Tewa transitive imperative proclitics appears in (34).

(34) Rio Grande Tewa transitive imperative (Speirs 1966: 164; Martinez 1982: 74)

a. ˀųˀ wäm fê núc’aˀ
    ˀųˀ wäŋ fê nų=c’aˀ
    2S INDF.1 stick 2S>3S.IMP=cut.IMP
    Cut a stick, you!
b. \( biŋ'\hat{o} \cdot \)
\( biŋ'=o' \)
\( 2P>3.IMP=\text{bathe.IMP} \)
You (du./pl.) bathe him/her/them!

In (34)a the A argument is singular, as is the inanimate object (unambiguously singular due to the co-occurring indefinite determiner \( wæ̂n\) marking inverse number, which gives a singular reading with Class II inanimate referents). In (34)b the A argument is non-singular and the O argument is third person of unspecified number.

There is no special imperative series to correspond to the intransitive-dative series. In the rare event where such an imperative is required, either the appropriate member of the regular intransitive-dative is used or a monovalent imperative form is used and the dative is expressed by other means, e.g. as a postpositional phrase. The Transitive-Dative, on the other hand does have an imperative series. Number distinctions are almost identical to those seen with the transitive, as shown in Table 11-22: no distinction for either argument when the dative is first person; a three-way contrast in a third person dative with a second person singular A argument in Rio Grande Tewa and with any second person A argument in Arizona Tewa. When the Rio Grande Tewa A argument is non-singular, a third person O makes no number distinction.

Table 11-22: Tewa Transitive-Dative Imperative Paradigms

<table>
<thead>
<tr>
<th>A&gt;O&gt;D</th>
<th>RGT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&gt;X&gt;l</td>
<td>( dîŋ )</td>
<td>( dîŋ )</td>
</tr>
<tr>
<td>2s&gt;X&gt;3s</td>
<td>( m\hat{a}ŋ )</td>
<td>( m\hat{a}ŋ )</td>
</tr>
<tr>
<td>2s&gt;X&gt;3d</td>
<td>( ov\hat{a}ŋ )</td>
<td>( m\hat{a}b\hat{e}ŋ )</td>
</tr>
<tr>
<td>2s&gt;X&gt;3p</td>
<td>( ov\hat{e} )</td>
<td>( m\hat{a}b\hat{e} )</td>
</tr>
<tr>
<td>2ns&gt;X&gt;3</td>
<td>( biŋ )</td>
<td>( m\hat{a}ŋ / m\hat{a}b\hat{e}ŋ / m\hat{a}b\hat{e} )</td>
</tr>
</tbody>
</table>
All pronominal forms are the same as in the non-Imperative paradigm except the Rio Grande Tewa $2S>X>3S$ and $2NS>X>3$ forms, which differ from their non-Imperative counterparts in tone. Use of these proclitics are simply illustrated in (35).

(35) Rio Grande Tewa transitive-dative imperative (Martinez 1982: 80)

a. $m\check{\text{a}}\check{n}h\check{\text{u}}$
   $m\check{\text{a}}\check{n}=h\check{\text{u}}$
   $2S>3S.$IMP=take.IMP
   *Take it for him/her!

b. $b\acute{i}mp\check{\text{u}}$
   $b\acute{i}=p\acute{\text{u}}$
   $2NS>3.$IMP=make.IMP
   *You (du./pl.) make it for him/her/ them!

Finally, the Rio Grande Tewa transitive-dative-reflexive construction may also be used in the imperative, as seen in (36).

(36) Rio Grande Tewa transitive-dative reflexive imperative (Martinez 1982: 80)

$m\check{\text{a}}\check{n}h\check{\text{u}}$
$m\check{\text{a}}\check{n}=h\check{\text{u}}$
$2SG.$DRFL.$IMP=take.IMP
*Take it for yourself!

The pronominals used are hardly different from the non-imperative proclitics in form, shown in Table 11-23, but differ slightly in function.

Table 11-23: RGT Transitive-Dative Reflexive Imperative Paradigm

<table>
<thead>
<tr>
<th></th>
<th>RGT</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2S$</td>
<td>$m\check{\text{a}}\check{n}$</td>
</tr>
<tr>
<td>$2NS$</td>
<td>$b\acute{i} = b\acute{n}$</td>
</tr>
</tbody>
</table>

There is no distinct second person dual form, the meaning simply being expressed by the non-singular. The singular form is always $m\check{\text{a}}\check{n}$ = and never apparently the alternative $\text{g}\check{\text{a}}\check{n}$ = sometimes found in the non-imperative. I have heard both of the given non-
singular forms from a single speaker but with different verbs. It is not yet clear if they are phonologically predictable or if there is something else going on.

The imperative proclitics, while unique to Tewa, will serve an important role in reconstructing certain of the pronominal proclitics in later chapters.

11.4 Tiwa Languages

The Tiwa languages stand beside Kiowa in the complexity of their pronominal system, although this complexity is distributed differently and is a little more transparent in its historical compositionality in certain areas. As such, there is a larger number of pronominal forms than is found in Tewa and a little less overlap between paradigms as is found in Kiowa. However, these can still be categorized according to the basic paradigms found across Kiowa-Tanoan: intransitive (11.4.1), reflexive (11.4.2), transitive (11.4.3), intransitive-dative (11.4.4), and transitive-dative (11.4.5). The gross organization of the pronominal proclitics is quite close across Taos Northern Tiwa, Picuris Northern Tiwa, and Southern Tiwa, so all three Tiwa languages will be treated together.

11.4.1 Tiwa Intransitive

The intransitive paradigm in the Tiwa languages appears to have a wider distribution than it does in Kiowa or Tewa, although the verbal semantics determining this distribution is still in need of further study. The overwhelming majority of monovalent predicates do seem to occur with the intransitive (and fewer with the reflexive than in the languages reviewed in the previous sections). That being said, the core occurrences that are definitively indexed with the intransitive paradigm are still
statives (37)a, changes of state (37)b, basic verbs of directed motion (37)c, verbs of static position (37)d, and mental state verbs (37)e.

(37) Tiwa intransitive usage

a. Stative, Southern Tiwa (Allen et al 1984: 300)
   ik'uruk'iwem
   i=k'uru-k'iwe-m
   3l.ITR=dipper-old-ST
   \textit{The dipper is old.}

b. Change of state, Taos Tiwa (Kontak and Kunkel 1987: 16)
   ωhialta
   ω=hiial-ta
   1s.ITR=sick-INCH.PF
   \textit{I got sick.}

c. Directed motion, Picuris Tiwa (Zaharlick 1982: 37)
   tamɛʔ̣an
   ta=mɛʔ̣an
   1s.ITR=go-PST
   \textit{I went.}

d. Position, Southern Tiwa (Leap 1970b: 212)
   wibaʔamen wimʔa kji̞de j̃ay
   wibaʔamen wimʔa kji̞-ide O=i̞-ay
   nah̃éỹax
   nah̃-h̃éỹ=i̞ag
   once one rabbit-S 3S.ITR=be.sitting.S/D-PST.IPF NA-hill=on
   \textit{Once upon a time there was a rabbit sitting on a hill.}

e. Mental Action, Taos Tiwa (Kontak and Kunkel 1987: 15)
   ejñ̃iwhu
   ejñ̃iwhu
   1s.ITR=descend-IPF 1s.ITR=though=understand-SB.IPF-SB
   \textit{I'm going down even though I'm not understanding.}

It can be expected that any predicate fitting into one of the above constructions will take the intransitive proclitics. Monovalent predicate classes that do not take the intransitive will be addressed in the following sections.

The Tiwa languages also show another common and frequent use of their respective intransitive pronominal paradigms: to index the patient in a transitive passive
construction. This is required in particular when the patient is a speech act participant for which there are no transitive pronominals in these languages (see section 11.4.3 below), so the intransitive series is used instead. The agent, if expressed, is case-marked with a postposition and is not indexed on the verb, as illustrated in (38) for Picuris Northern Tiwa.

(38) Passive subject, Picuris Tiwa (Zaharlick 1982: 37)

\[
\text{am} \text{ŋ} \text{m} \text{ía} \text{ʔ} \text{a} \text{n} \\
\text{a}=\text{m} \text{ön} \text{-m} \text{ia} \text{-} \text{ʔ} \text{a} \\
2\text{S.} \text{ITR} \text{=} \text{see} \text{-PS-PST} \\
\text{The man saw you.}
\]

In this Picuris Tiwa sentence the erstwhile second person O argument is expressed as the intransitive S of the passivized transitive verb \text{mön} \text{mia be seen}. The A argument meanwhile is case marked with =\text{pa} and is not indexed on the verb. The A argument may also be omitted entirely, if informationally appropriate. This construction is highly common.

Table 11-24 lays out intransitive pronominal indexation proclitics for the three Tiwa languages. As is usual in the family, there is a three-way contrast in person (first, second, third) and a three-way number contrast in the first and second person (singular, dual, plural). As in Kiowa (and Towa), there are further number distinctions in the third person: singular, dual, (inanimate) plural, and inverse.
Table 11-24: Tiwa Intransitive Paradigms

<table>
<thead>
<tr>
<th></th>
<th>Taos</th>
<th>Pic</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>ῡ</td>
<td>ta</td>
<td>te</td>
</tr>
<tr>
<td>2S</td>
<td>ῡ</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>3S/A</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
<tr>
<td>1D</td>
<td>Ῡn</td>
<td>Ῡn</td>
<td>Ῡn</td>
</tr>
<tr>
<td>2D</td>
<td>m̩n</td>
<td>m̩n</td>
<td>m̩n</td>
</tr>
<tr>
<td>3D</td>
<td>Ῡn</td>
<td>Ῡn</td>
<td>Ῡn</td>
</tr>
<tr>
<td>1P</td>
<td>i</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>2P</td>
<td>m̩n</td>
<td>m̩n</td>
<td>m̩n</td>
</tr>
<tr>
<td>3I/B</td>
<td>i</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>3P/C</td>
<td>u</td>
<td>o</td>
<td>u</td>
</tr>
</tbody>
</table>

The four numbers in the third person are used to indicate noun class. Class I (animate) referents are indexed with the singular in the singular and the inverse in the plural. Class II (inanimate) referents are marked with inverse in the singular and inanimate plural in the plural. Class III (inanimate) nouns are indexed with singular in the singular and plural in the plural. Class IV nouns make no number distinctions and seem to be lexicalized with a specific number indexation. In Tiwa studies, the third person singular, inverse, and plural morphological categories are traditionally called A, B, and C respectively, as seen in the table above. I will show these labels in the tables of this chapter, but will make minimal use of them in the chapters to follow.

Within the forms of the paradigm, the third person singular is unmarked by any overt form. There is homophony—or near homophony, depending on tone—between first and third person dual and between first person plural and third person inverse. Such homophonous forms will prove pertinent within a comparative-historical perspective.

As a caveat to the above statement about the unmarked third person singular, it should be noted that the Tiwa languages do have prefix/proclitic n̩- (TA) or n̩- (Pt, ST)

15 The tones on these two pronouns is highly uncertain.
which sometimes occurs in the third person. The exact function of this morpheme has not
been fully worked out in the synchronic grammar of any of the three Tiwa languages, but
it occurs immediately following the pronominal indexation markers (intransitive or any
of the other series). It sometimes seems to be determined by the predicate, sometimes by
the reference of an argument, and sometimes accompanies an incorporated noun. I will
not go into the details of this morpheme here. One of its common usages with intransitive
predicates to mention in this chapter is its occurrence (with the null third person singular
pronominal) on predicates denoting ambient phenomena, such as weather, and other
impersonal constructions. It also occurs with the expression of stationary locations. Such
usages are illustrated in (39)

(39) Tiwa nɔ̃/nɔ̃ prefix

a. Ambient phenomena, Taos Tiwa (Kontak and Kunkel 1987: 34)

\[
\begin{align*}
t^\text{ik'}\text{up''}\text{ihu} & \quad \text{wën'}\text{y} \quad nɔ̃\text{lawmɔ̃} \\
o=t^\text{i-k' u-p' i-hu} & \quad \text{wën}=\text{i' y} \quad nɔ̃=\text{law-mɔ̃} \\
3S.ITR=\text{day-good-very-IPF} & \quad \text{but}=\text{TOP} \quad Nɔ=\text{cold-ST}
\end{align*}
\]

*It's a nice day but it's cold.*

b. Weather, Picuris Tiwa (Nichols 1995c: 6)

\[
\begin{align*}
nαl\text{olpe} \\
nα=\text{lol-pe}
\end{align*}
\]

NA=rain-cease.PF

*It stopped raining*

c. Impersonal evaluative, Southern Tiwa (Frantz 1995: 84)

\[
\begin{align*}
nαt^\text{arataw}e'\text{ay} & \quad i\text{x'en0a'chəhi}i \\
nα=t'\text{aratawe}'\text{ay} & \quad i=x\text{ien-0a'-če-hi}=\text{ʔi}
\end{align*}
\]

NA=be.difficult-PST.ST 3.S=dog-find-PS-FUT=REL

*It was difficult to find the dogs.*

d. Locational, Picuris Tiwa (Zaharlick 1980: 161)

\[
\begin{align*}
p^\text{altahęnyo} & \quad \text{i=nxuy} \\
p^\text{altahę}=\text{yo} & \quad i=nq=xuy \\
\text{inside.there}=\text{TOP} & \quad 3S. ITR=\text{NA}=\text{stay}
\end{align*}
\]

*(the woman) were to remain inside their houses.*
Examples (39)a and (39)b both illustrate this prefix with a weather expression, the former a stative and the latter an active predicate. The Southern Tiwa sentence in (39)c shows the prefix with an impersonal complement-taking predicate while the Picuris example in (39)d appears to show its usage with stationary location. While its full distribution has yet to be determined and is most saliently realized in the Tiwa languages, it does have a presence in comparative perspective.

While the form and function of the intransitive proclitics is straightforward enough in Tiwa as in the other languages, there is one caveat in Tiwa. All Tiwa languages may modify their proclitics in a negative construction. This involves adding a prefix ya- (TA, PI) or e- (ST) after the proclitic, which may then fuse with certain forms in synchronically idiosyncratic ways. Unfortunately, there is inadequate documentation of these negative intransitive series to present full paradigms. The following sentences in (40) illustrate such fused negative markers in Picuris Tiwa and Southern Tiwa.

(40) Tiwa Negation
   a. Picuris Tiwa (Harrington and Roberts 1928: 328)

   ną nątʰia'ay tiyasolhikennő       ną tıyasopʰi'ia
   ną nątʰia'ay ta-ya=so-lel-hike-nọ    ną ta-ya=so-p'ë-pʰi-a-Ø
   1 very          1 S.ITR-NEG=DF-heat-like-SB 1 1 S.ITR-NEG=DF-head-hairy-SB.PST
   I do not like very much heat, as I am bald-headed.

   b. Southern Tiwa (Gardiner 1977b: 38)

   p'ayʰiyin'a       inemiiβa
   p'ayʰiy-in'a       Ĭn-e=mi-ba
   who-to-NEG.FOC 1D.ITR-NEG=go-SB.PST
   We didn't go to anybody.

Both clauses in the Picuris Tiwa sentence in (40)a show the intransitive first person singular and negative morpheme sequence ta-ya= being pronounced as tıya=. The Southern Tiwa example in (40)b shows simple agglutination of first person dual Ĭn= and
negative e= with no evident change, although there does appear to be resyllabification of the final /n/ of the proclitic. Note too that in Picuris Tiwa, the negative fuses with the na- prefix to become niya-. Recall that a similar process is seen in Rio Grande Tewa, although there is not enough data for a comparison between the constructions just yet.

### 11.4.2 Tiwa Reflexive

The Tiwa languages are like Tewa in possessing a wholly distinctive reflexive paradigm that does not obviously derive from transitive forms in synchronic perspective. The Tiwa reflexive shows a similar distribution to its counterparts in the other Kiowa-Tanoan languages, although it may be lexicalized with fewer monovalent verbs than is the Tewa reflexive. Of course, as a reflexive set, one of its main uses is to index a coreferential transitive A and O argument, as in (41).

(41) Transitive reflexive usage, Taos Tiwa (Trager 1940: 179)

```plaintext
huŋmę́ntę́ęŋ mçwitʰupʰalaʔçę́ŋ
huŋmę́ntę́ęŋ mç=wi=thu-pʰalaʔçųm-cę́
thereupon 3S.RFL=EV=clay-white-make-PF
...and [coyote] covered himself with white clay.
```

In Tiwa, it appears to be the pronominal indexation which bears the main brunt of conveying the reflexive force. Unlike Kiowa and Towa, that is, independent particles do not seem to be used frequently to reinforce the reflexive or reciprocal meaning.

Just as in the other languages, we do find an extension of the reflexive to monovalent predicates as well. They are found in particular in predicates expressing change of position (42)a, some verbs of bodily or vocal action (42)b, and in at least some manner of motion predicates (42)c, although not with as many as in Tewa.
Tiwa monovalent reflexive usages

a. Change of position, Picuris Tiwa (Harrington and Roberts 1928: 310)

\[ \text{wipay } \text{änčičełay} \]
\[ \text{wipay } \text{än}=\text{cice-łay} \]
both \[ 3\text{D.RFL}=\text{talk-sit.down.S/D.PF} \]
and they both sat down to talk.

b. Vocal activity, Southern Tiwa (Frantz nd)

\[ \text{kibep}'\text{äšiače} \]
\[ \text{kibe}=\text{p}'\text{äšia-če} \]
1P.RFL=story-tell-POT
Let's tell stories of long ago.

c. Manner of motion, Taos Tiwa (Trager 1940: 179)

\[ \text{yianę } \text{hod } \text{c'унę } \text{mьwiti-bsiayi} \]
\[ \text{yianę } \text{hod } \text{c'унę } \text{mь}=\text{wi}=\text{tęd-busiayi} \]
then also coyote \[ 3\text{S.RFL}=\text{EV}=\text{energetically-arise.PF} \]
Then Coyote jumped up...

The extent of this class has not been thoroughly explored for the Tiwa languages, so it is not yet clear for these languages how far beyond these basic categories the reflexive is used. With manner of motion, it appears to be primarily attributed to predicates that may also be used transitively, although this requires further evaluation.

The forms of the reflexive pronominal indexation markers for the Tiwa languages are given in Table 11-25. We find the usual three-way contrast in person, as in the intransitive, plus only a three-way contrast in number for all persons, including third. As in the other languages, inanimate referents rarely occur in a reflexive construction, so there is not the pressure to express the full elaboration of noun classes through number marking.
Table 11-25: Tiwa Reflexive Paradigms

<table>
<thead>
<tr>
<th></th>
<th>Taos</th>
<th>Pic</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>tɔ̨</td>
<td>ta</td>
<td>te</td>
</tr>
<tr>
<td>2S</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>3S</td>
<td>mɔ̨</td>
<td>mą̄</td>
<td>be</td>
</tr>
<tr>
<td>1D</td>
<td>kɔ̨n</td>
<td>ką̄m</td>
<td>kį̂n</td>
</tr>
<tr>
<td>2D</td>
<td>mɔ̨n</td>
<td>mą̄m</td>
<td>mę̄n</td>
</tr>
<tr>
<td>3D</td>
<td>ɔ̨n</td>
<td>ą̄m</td>
<td>ą̄n ~ ibe</td>
</tr>
<tr>
<td>1P</td>
<td>kį̂-mą̄</td>
<td>ki-mą̄</td>
<td>ki-be</td>
</tr>
<tr>
<td>2P</td>
<td>mɔ̨-mą̄</td>
<td>mį̄-mą̄</td>
<td>be-be</td>
</tr>
<tr>
<td>3P</td>
<td>i-mɔ̨</td>
<td>i-mą̄</td>
<td>i-be</td>
</tr>
</tbody>
</table>

The only merger in the table is between second and third person dual in Picuris Tiwa. The rest of the persons and numbers remain distinct. Variation in Southern Tiwa is based on different sources and appears to reflect a change in progress, merging the third person dual and plural. Note that there is an explicit reflexive element Ta mɔ̨=, Pt mą̄=, ST be= found with the plural proclitics and as the sole form in the third person singular. This element will also be mentioned to occur in constructions with the two dative series of proclitics in 11.4.4 and 11.4.5 below.

11.4.3 Tiwa Transitive

The transitive paradigm in Tiwa is comparable in distribution to its counterparts in Kiowa and Tewa with one major caveat. This caveat is the obligatory passive, a feature Tiwa shares with Towa. Other than this feature, to be described below, the Tiwa transitive is straightforward. The overwhelming majority of active divalent predicates require the transitive series with no major anomalies in indexation noted so far.
(43) Tiwa transitive, Taos Tiwa (Kontak and Kunkel 1986: 2)

\[
yúna \quad \text{múmík’ɔy} \quad \text{wɔhiɔbɔ}
yú-na \quad \text{Ø=mú-mí=k’ɔy} \quad \text{Ø=wɔ=hiɔb-ɔ}
\text{this-S} \quad \text{3S=3S=see-NEG=SUB} \quad \text{3S=NEG=like-PF}
\]

This -S 3S=3S=see-NEG=SUB 3S=NEG=like-PF
S/he didn’t like this one when s/he saw it.

The divalent perception predicate mú see in (43) indexes an agentive perceiver as A and
the percept as O. The mental state verb hiɔb like here is indexed with the intransitive.

Other regular uses of the transitive, e.g. alternation in certain verbs with the reflexive, are
also found in the Tiwa languages.

Because of the size and complexity of the transitive paradigm, and because this
section is summarizing the paradigms of three languages, the series will be distributed
amongst more tables than was done for Kiowa and Tewa. The first set, presented in Table
11-26, collects those Tiwa proclitics that index a speech act participant O argument.

Table 11-26: Tiwa Transitive X>SAP Paradigm

<table>
<thead>
<tr>
<th>A &gt; O</th>
<th>Taos</th>
<th>Pic</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&gt;2S</td>
<td>ɔ~ɔ</td>
<td>q̃</td>
<td>i</td>
</tr>
<tr>
<td>1&gt;2D</td>
<td>mɔ̯pén</td>
<td>p̣an</td>
<td>ṃen</td>
</tr>
<tr>
<td>1&gt;2P</td>
<td>mɔ̯pí</td>
<td>p̣i</td>
<td>ṃa</td>
</tr>
<tr>
<td>2&gt;1S</td>
<td>máy</td>
<td>may</td>
<td>bey</td>
</tr>
<tr>
<td>2&gt;1NS</td>
<td>ku</td>
<td>ku</td>
<td></td>
</tr>
</tbody>
</table>

The variation noted in the Taos 1>2S proclitic comes from different sources and may
reflect speaker variation, generational differences, or simply pervasive mishearing on
some analyst’s part. It can be noted that number is never distinguished in the first or
second person A argument. A three-way number contrast is found in a second person O
argument across all languages, but only a two-way contrast between singular and non-
singular is marked for a first person O argument in Taos Tiwa and Southern Tiwa, but there is apparently no number distinction in Picuris Tiwa.

The most obvious part of the above paradigm is the large grayed block marked “PASSIVE”. In Tiwa, as we will also find in Towa, there are no grammaticalized proclitics that index a third person A acting on a first or second person O. In order to express such a situation, speakers are obligated to put the verb into a passive/inverse construction, index the would-be O argument with an intransitive pronominal proclitic, and mark any lexical expression of the agent with a case enclitic (in Picuris and Southern Tiwa). This construction was mentioned in section 11.4.1 and the example section from there is repeated in (44) here. Note that this passive construction is the only way to express the force dynamics between the given participants with the predicate given.

(44) Passive construction, Picuris Tiwa (Zaharlick 1982: 37)

\[
\begin{align*}
\text{amənmiəʔn} & \quad \text{sinənepa} \\
\text{a=мон-mia-ʔn} & \quad \text{sin-e-në=pə} \\
2S.\text{ITR=see-PS-PST} & \quad \text{man-e-S=AGT}
\end{align*}
\]

*The man saw you.*

All features of the obligatory passive—the intransitive indexation, the passive morphology, the case marking—can be seen in this Picuris sentence. This construction will be further discussed and exemplified for the modern Tiwa languages in chapter 0.

Once this passive construction is taken into consideration, the rest of the transitive paradigm is straightforward in the light of the typical Kiowa-Tanoan argument marking configurations. Table 11-27 presents those transitive proclitics that index a third person singular O argument. The A argument distinguishes the usual person and number categories of A arguments in Kiowa-Tanoan.
Table 11-27: Tiwa Transitive X>3s Paradigm

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>Taos</th>
<th>Pic</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1s</td>
<td></td>
<td>ti</td>
<td>ti</td>
<td>ti</td>
</tr>
<tr>
<td>2s</td>
<td>c</td>
<td>a</td>
<td>a</td>
<td></td>
</tr>
<tr>
<td>3s</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>Ø</td>
</tr>
<tr>
<td>1D</td>
<td>ŋn</td>
<td>ŋn</td>
<td>ŋn</td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>mën</td>
<td>mën</td>
<td>mën</td>
<td></td>
</tr>
<tr>
<td>3D</td>
<td>ŋn</td>
<td>ŋn</td>
<td>ŋn</td>
<td></td>
</tr>
<tr>
<td>1P</td>
<td>ñ</td>
<td>ñ</td>
<td>ñ</td>
<td></td>
</tr>
<tr>
<td>2P</td>
<td>mō</td>
<td>mā</td>
<td>mā</td>
<td></td>
</tr>
<tr>
<td>3P</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td></td>
</tr>
</tbody>
</table>

As in the intransitive, there is one configuration involving third person, 3s>3s, that receives no explicit indexation. There is also identity between the first and third person dual proclitics and between the first and third person plural.

Another feature of Tiwa involves the ŋ̃-/ń̃- affix mentioned with the intransitive. When a third person O argument in the Tiwa languages entails use of the ŋ̃-/ń̃- prefix, this morpheme always follows the singular O forms of this table. That is, the affix never follows the inverse or plural O argument pronominals to be described below. Picuris Tiwa, however, shows two special forms: ta-ń̃ instead of the expected ti-ń̃- in 1S>NA and mj-ń̃- instead of ma-ń̃- in 2P>NA.

Dual number is never distinguished in third person O arguments in the Tiwa languages. Since O arguments do explicitly express the noun class of referents, however, both plural and inverse number are represented. Table 11-28 presents the pronominals indexing a third person (inanimate) plural O argument. The same A argument categories are expressed as above.
Table 11-28: Tiwa Transitive $X>3P$ Paradigm

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>Taos</th>
<th>Pic</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>ɔ</td>
<td>ta</td>
<td>te</td>
<td></td>
</tr>
<tr>
<td>2S</td>
<td>ku</td>
<td>ko</td>
<td>ku</td>
<td></td>
</tr>
<tr>
<td>3S</td>
<td>u</td>
<td>o</td>
<td>u</td>
<td></td>
</tr>
<tr>
<td>1D</td>
<td>ɔ̨n</td>
<td>ɔ̨m</td>
<td>ɔ̨n</td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>mɔ̨n</td>
<td>mɔ̨m</td>
<td>mɔ̨n</td>
<td></td>
</tr>
<tr>
<td>3D</td>
<td>ɔ̨n</td>
<td>ɔ̨m</td>
<td>ɔ̨n</td>
<td></td>
</tr>
<tr>
<td>1P</td>
<td>kiw</td>
<td>ku</td>
<td>kiw</td>
<td></td>
</tr>
<tr>
<td>2P</td>
<td>mɔw</td>
<td>mɔ</td>
<td>mɔw</td>
<td></td>
</tr>
<tr>
<td>3P</td>
<td>iw</td>
<td>u</td>
<td>iw</td>
<td></td>
</tr>
</tbody>
</table>

There are no mergers in this part of the paradigm, each configuration being expressed by a distinct pronominal form (although there are certainly patterns of similarity amongst these forms). The plural A argument proclitics all terminate in /w/ in Taos and Southern Tiwa, a pattern that will be familiar when we turn to the dative proclitics in the next two sections.

As the last part of the transitive paradigm, there are the pronominal forms used with a third person inverse O argument, laid out in Table 11-29.

Table 11-29: Tiwa Transitive $X>3I$ Paradigm

<table>
<thead>
<tr>
<th>A:</th>
<th>O</th>
<th>Taos</th>
<th>Pic</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>pi</td>
<td>pi</td>
<td>bi</td>
<td></td>
</tr>
<tr>
<td>2S</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td></td>
</tr>
<tr>
<td>3S</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td></td>
</tr>
<tr>
<td>1D</td>
<td>ɔ̨pén</td>
<td>pą</td>
<td>im̃im</td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>mɔ̨pén</td>
<td>pą</td>
<td>bibim~mim̃im</td>
<td></td>
</tr>
<tr>
<td>3D</td>
<td>ɔ̨pén</td>
<td></td>
<td>im̃im</td>
<td></td>
</tr>
<tr>
<td>1P</td>
<td>ipi</td>
<td></td>
<td>ibi</td>
<td></td>
</tr>
<tr>
<td>2P</td>
<td>mɔ̨ipi</td>
<td>pi</td>
<td>bibi</td>
<td></td>
</tr>
<tr>
<td>3P</td>
<td>ipi</td>
<td></td>
<td>ibi</td>
<td></td>
</tr>
</tbody>
</table>

Unlike in the previous table, there are numerous shared forms in this paradigm. The first and third person dual and first and third person plural are expressed by the same forms in Taos and Southern Tiwa. In Picuris the conflation goes even further, a single form $pą=$
and \( pi= \) each expressing all dual and plural A argument forms respectively. It appears that there is syncretism between second and third person singular as well, but the fact that Taos Tiwa is reported to have a tone distinction between the two persons suggests there may in fact be a difference in all three Tiwa languages\(^{16}\). The alternation seen in the Southern Tiwa 2\(D>3I\) form stems from the reports of different sources and may represent a change in progress and/or speaker variation.

Finally, it should be noted that even though the passive is only obligatory when the O argument is a SAP, as described above, the Tiwa languages also make use of the active-passive contrast with 3\(>3\) configurations in order to express discourse information structure. That is, even though these languages do not have a gap in their 3\(>3\) paradigm as they do for a first or second person O argument, they may use a passive construction in order to place informational prominence on a third person O argument. This is illustrated in the text excerpts in (45).

(45) Tiwa passive and information structure

a. Picuris Tiwa (Harrington and Roberts 1928: 320)

\[
\begin{align*}
\text{ʔo’o’onę} & \quad \text{čiwenępa} & \quad \text{ʔanay’omnia} & \quad \text{ʔanme}
\end{align*}
\]

\[
\begin{align*}
\text{ʔo-e-nę} & \quad \text{čiw-e-nę=pa} & \quad \text{ʔan=ay’om-mia} & \quad \text{ʔan=mę}
\end{align*}
\]

child-DIM-e-S 2D.ITR=hypnotize.PS-PST eagle-e-S=AGT 2D.ITR=go.PF

*The little children went as the Eagle had told them.*

b. Southern Tiwa (Leap 1970b: 212)

\[
\begin{align*}
\text{kį’iđe} & \quad \text{šuy’ašeβan} & \quad \text{piřuđeβa}
\end{align*}
\]

\[
\begin{align*}
\text{kį’iđe} & \quad \text{O=šuy’aɓe-ban} & \quad \text{piřu-de=ba}
\end{align*}
\]

rabbit-S 3S.ITR=hypnotize.PS-PST snake-S=AGT

*The rabbit was being hypnotized by the snake.*

In the Picuris Tiwa example in (45)a and the Southern Tiwa in (45)b the children and the rabbit respectively are the central characters of the narratives and so tend to be kept in a

\(^{16}\) Alternatively, the report of a tone distinction may be erroneous, in which case the Tiwa languages lack a contrast. Such a syncretism is actually seen in Towa.
topic prominent position within the morphosyntactic structure. This typically means expressing them as an S or A argument whenever possible. In the text from which the Southern Tiwa excerpt is pulled, both the snake and the rabbit are construed as central characters, and so both characters receive alternatively active and passive treatment depending on the focus in a particular portion of the discourse (cf. Watts and Brandt 1981). This usage of the passive will also be further described in chapter 0.

11.4.4 Tiwa Intransitive-Dative

The functional distribution of the Tiwa intransitive-dative is a familiar story for the most part at this point, compared to Tewa and Kiowa. There is more formal elaboration in Tiwa than there is in Tewa, roughly equivalent to the elaboration found in Kiowa, but the usage is very similar. The intransitive-dative may be even more frequently used in Tiwa than in the previous languages and the presence of the passive construction does present another construction for the paradigm to appear in.

The most common usage, as expected, is to express the possessor of the single argument of a monovalent predicate. The possessum in such constructions may be animate or inanimate. Example (46) illustrates the predication of possession with an inanimate possessum.

(46)  Taos Tiwa possession, (Trager 1940: 180)

\[
\begin{align*}
\text{tēn} & \quad k\text{wix}^y\text{kīm}\text{̣} \\
\text{tēn} & \quad k\tilde{y}=\text{wī}=x^y\text{-kīm}\text{̣} \\
\text{now} & \quad 3S>>2S=EV=tail-be.lying.S/D.ST \\
& \quad \text{Now you have the tail. (meaning, It's your turn to tell a story.)}
\end{align*}
\]

Here the incorporated noun \(x^y\text{̣} \text{tail} \) is possessed by a second person singular argument. Both of these participants are then indexed in the intransitive-dative proclitic \(k\tilde{y}=\).
The Tiwa languages do not have any independent possessive pronouns or possessive markings on clausal dependents like Kiowa and Tewa. Therefore the intransitive-dative proclitics bear more functional weight as the markers of possession. With kinship terms, at least, the intransitive-dative proclitics may affix directly to the possessed noun with no verb involved, as shown in the Picuris sentence in (47).

(47) Verb-less intransitive-dative, Picuris Tiwa (Nichols 1995: 86)

\[
\begin{align*}
&\text{hęxęči} & \text{kąnантanłolęnępa} & \text{an’iłat’ęči̱e} \\
&\text{hęxęči} & \text{kąnàn=tan-loł-e-nę̱=pa} & \text{an=ʔila-t’ę́-či̱=ę́}
\end{align*}
\]

why 3S >> 1D=father-old-e-S=AGT 1D >> 3S=willow-cut-POT=SB

\[
\text{wamiawmę}
\]

Ø=wa-mia-w-mę

3S.1TR=NEG-want-SB.IPF

*Why does our grandfather not want us to cut the willows?*

Here there is no intransitive-dative marked on the main predicates t’ę̱ cut or mìaw want. Instead, the possession-marking kąnàn= 3S >> 1D is found on the possessed noun itself. This construction appears to be restricted to a small number of human-referent kinship terms.

While it appears that any intransitive verb may occur with an intransitive-dative pronominal to express possession in Tiwa, as in Kiowa and Tewa, these pronominals occur particularly frequently on stative predicates, copulas, and verbs of position. The latter two are especially common as the primary means of expressing the predication of possession in Tiwa as well as co-occurring with attributive possession. Such predication of possession was illustrated in (46).

This construction with a copula or positional is especially common in Tiwa to express attributive possession. The intransitive-dative is attached to the copula or positional verb, often with the possessed noun incorporated, and a relativizer is attached...
to the whole. The Tiwa languages seem to make most frequent use of such a construction with a copula in order to express kinship possession (when a verb is included at all). The sentences in (48) show this relativized possessor expression in both Southern Tiwa and Taos Tiwa.

(48) Relativized possessive constructions
   a. Southern Tiwa (Gatschet 1891: 213)
      \[\begin{align*}
      \text{nàč’uritiy} & \quad \text{kinàqwe’itin} & \quad \text{nàwem} \\
      \text{nà=č’urí-ti} & \quad \text{ki-nà=we=’i=tí} & \quad \text{O=nà=we-m} \\
      \text{NA=yellow-village} & \quad 3S>>1P-NA=be=REL=only & \quad 3S =NA=be-ST \\
      \text{the Yellow Pueblo is now ours to a certainty.}
      \end{align*}\]
   b. Taos Tiwa (Trager 1940: 179)
      \[\begin{align*}
      \text{yonú} & \quad \text{kitỳmwapuś’i} & \quad \text{m’àxỳmxu} \\
      \text{yonú} & \quad \text{ki=tỳm-wá-puú=’i} & \quad \text{m’àxỳmxu} \\
      \text{now} & \quad 3S>>1P=father-be-SB.PST=REL & \quad 3S>>3S=word-be=REL \quad \text{untruthfully} \\
      \text{iwà’umma’ú} & \quad \text{i-=ùmmá=mú} \\
      \text{3I-NEG=speak.POT=HSY} \\
      \text{now our late father's words will not be spoken in vain.}
      \end{align*}\]

The assertion of possession in (48)a is expressed with a relativized copula indexing the possessor (\textit{kinàqwe’itin ours}) with another copula marking the main predication using intransitive indexation (\textit{nàwem it is}). In the Taos Tiwa sentence of (48)b, a possessed kinship term \textit{tỳm father} is incorporated into a relativized copula that bears the possession indexation.

Allen et al. (1981) reports that Southern Tiwa may use the intransitive-dative series to express an animate goal. This usage is shown in (49) where a first person singular referent is the endpoint of the movement being asserted.
(49) Southern Tiwa locative goal (Allen et al 1981: 5)

\[
\begin{align*}
\text{įnsianwamburger} \\
\text{įn=sian-wan-ban} \\
\text{3S>>1S=man-come-PST}
\end{align*}
\]

The man came to me.

The goal interpretation seems to be quite rare and I have only seen it in elicited contexts.

A study of actual usage in Southern Tiwa could help to clarify the meaning of intransitive-dative with motion verbs.

Given its most common usage in the expression of possession, the S argument only indexes third person in Tiwa while the D argument may be of any person or number.

Given this structure, the intransitive-dative is regularly used in the Tiwa languages in the passive of a transitive-dative construction. Whenever the agent is third person and the dative is a speech act participant (the prototypically third person inanimate O argument does not affect matters), the transitive-dative paradigm lacks the appropriate pronominal forms and a passive is required. The agent is expressed as a case-marked oblique and is not indexed, the O argument is expressed as the S of the intransitive-dative and the D argument continues to be expressed as a D argument. The Southern Tiwa sentence in (50)a show such a passive construction used with a possessed O argument while the sentence in (50)b illustrate the passive with a recipient dative argument.

(50) Tiwa Passive Dative

a. Possessive dative passive, Southern Tiwa (Laylin 1988: 278)

\[
\begin{align*}
\text{ʔawaba} & \text{ na jikanmapebeban} \\
\text{ʔawa=ba} & \text{ na ñım=kăn-mape-be-ban} \\
3S=\text{AGT} & \text{ 1 3I>>1S=horse-count-PS-PST}
\end{align*}
\]

S/he counted my horses.
b. Recipient dative passive, Southern Tiwa (Allen et al 1990: 323)

\[
\begin{align*}
\text{įn} &= \text{ian-wiačešan} & \text{si} &= \text{nidošba} \\
\text{įn} &= \text{xian-wiače-ban} & \text{si} &= \text{nido=ba} \\
3\text{S}>>&1\text{S}=\text{dog-give-PS-PST} & \text{man-S}=\text{AGT}
\end{align*}
\]

The man gave me the dog.

In either function, any expressed agent requires the case marker, =ba in Southern Tiwa or =pa in Picuris Tiwa (but no case marking is required in Taos Tiwa). The same passive construction can be used with a third person dative when it is more prominent than a third person agent in a transitive-dative construction, just like the passive alternation seen in the transitive.

As in Kiowa and Tewa, there do appear to be a small number of verbs that are lexicalized to take the intransitive-dative paradigm to index their single core argument. It will take further research to uncover the full extent of this set, but it essentially includes mental states and modal like predicates, as illustrated by the Southern Tiwa stems in (51).

(51) Southern Tiwa dative verbs

\[
\begin{align*}
n\ankaça & \quad \text{know} & \text{phar} & \quad \text{finish} \\
\text{be}a & \quad \text{feel} & \text{thiwe} & \quad \text{able to see} \\
\text{n}a\text{ị}a\text{i} & \quad \text{occur to} & \text{n}a\text{lı}mi & \quad \text{deserve}
\end{align*}
\]

The D argument indexes the sole (mutable) participant in these predicates\(^{17}\). Since the Tiwa intransitive-dative does formally index two arguments, however, it appears that the S argument is arbitrarily coded as third person plural. Such constructions could be described as having an “empty” argument (cf. Frantz 1995, Singer 2011), but as described in section 11.2.4, it appears on functional grounds that Kiowa-Tanoan languages are making use of the resources they have at their disposal to mark an

---

\(^{17}\) There is a second event-type stimulus participant that may occur with such predicates, but lack of variability in the person or number of this participant means the pronominal indexation remain consistent for this argument.
argument as dative. Lacking a specialized paradigm that only indexes a single argument as D, the intransitive-dative series is the closest candidate.

Table 11-30 presents the forms of the intransitive-dative pronominal paradigm in the three Tiwa languages. There is the usual three-way person and number contrast in the dative argument. The S argument contrasts three numbers: singular, inverse, and plural, and indexes the noun class of the S argument via the patterns of number marking.

Table 11-30: Tiwa Intransitive-Dative Paradigms

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Taos</th>
<th>Pic</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>S/A</td>
<td>1S</td>
<td>ōn</td>
<td>qn</td>
<td>įn</td>
</tr>
<tr>
<td>S/A</td>
<td>2S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S/A</td>
<td>3S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S/A</td>
<td>1D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S/A</td>
<td>2D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S/A</td>
<td>3D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S/A</td>
<td>1P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S/A</td>
<td>2P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S/A</td>
<td>3P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

838
The primary complexity among the Tiwa languages stems from varying reports of the pronominal forms, which seem to indicate changes and reanalyses over the course of the 20th century. In Southern Tiwa and Taos Northern Tiwa, there appears to be a trend of merging the pronominal forms that index singular and inverse number of the S argument. Southern Tiwa also shows a trend towards merging the first person dual and plural and the third person dual and plural. Picuris Tiwa here appears to be more conservative than the other two languages insofar as it seems to keep all categories distinct. Note too that a regular pattern emerges among the Tiwa languages, mergers aside: singular pronominals tends to be unmarked or to end in /n/, inverse pronominals always end in /m/, and plural pronominals always end in /w/ (or a rounded vowel in Picuris Tiwa). This specific form-function correspondence can be seen only marginally in the transitive series, but will be again seen in the transitive-dative series.

When the S argument requires the Tiwa nɔ̨-/nɑ̨- prefix, this once again stands after the pronominal proclitics. The singular form that is distinct from the inverse form is used. In Picuris Tiwa, those singular forms that end in -ɑ̨n remove this increment before the nɑ- prefix, i.e. ɑnnɑ- and not *ɑnɑnnɑ- for 3NA>>3D.

---

18 The same trend will be seen with transitive-dative pronominals. Remember that (animate) Class I and (inanimate) Class III nouns mark their singular with the singular (A) category while (inanimate) Class II nouns mark their singular with inverse (B). Thus this trend of merging A and B numbers leads to a homogeneous treatment of all singular nouns. However, inverse (B) also marks the plural of animate Class I nouns while inanimate Classes II and III mark their plural with the plural (C) pronominals. Merging A and B thus means losing number distinctions for animate referents while number distinction is retained for inanimates, counter universal tendencies! It is possible that some of the variation in the literature may actually reflect sensitivity to noun class and animacy, A and B remaining distinct for animates but merging for inanimates. This is doubtful, but worth checking more thoroughly.

19 The longer, seemingly reduplicated allomorphs of the dual dative pronominals are reported in Harrington’s field notes. Those second person forms with /b/ in both dative series are also more strongly associated with earlier reports. Later sources largely report the shorter versions of the pronominals—although imim is to be found in these sources—and they tend to report forms with /m/ instead of /b/.
As a final comment on the formal properties of the pronominals, the Tiwa languages may attach the reflexive prefix TA mɔ-, PI mą-, ST be- following the intransitive-dative pronominal proclitics. As with the nɔ-/ną- prefix, the reflexive occurs only with singular indexation. This construction is rare and appears to be used primarily in the passive of a transitive-dative construction where there is reflexivity between the A and the O arguments.

11.4.5 Tiwa Transitive-Dative

Aside from the expected complexity of the transitive-dative given its semantics, this paradigm is rendered more complex in Tiwa by variable and incomplete reports of its composition. Fortunately there is enough to fill out the paradigm for both Taos Tiwa and Southern Tiwa, but it appears that Picuris Tiwa may not possess a transitive-dative paradigm, based on the analysis of previous researchers. Ditransitive verbs in this language may use the regular transitive series while other dative functions are filled by the intransitive-dative. A more thorough investigation of Harrington and Roberts (1928) or work with Picuris speakers may reveal the survival of the paradigm into the modern period, but according to the descriptive sources, the series is simply absent from the language. Picuris Tiwa will therefore be omitted from the discussion in this section.

The Tiwa transitive-dative has a comparable distribution to its counterpart in the other Kiowa-Tanoan languages. It adds a dative argument to an otherwise divalent transitive event. Most typically this dative argument expresses a recipient (52)a, a beneficiary (52)b, or a possessor of the O argument (52)c.
Tiwa transitive-dative usage

a. Recipient dative, Taos Tiwa (Kontak and Kunkel 1987: 13)
   \[
   k̂mtixʷí́túwia
   k̂m=tixʷítí-wia
   1>3i>2s=pencil-give.PF
   I/We gave you a pencil.
   \]

   \[
   kawpanpebān
   kaw=pan-pe-ban
   1>3p>2s=break-make-PST
   I/We made you bread.
   \]

   \[
   ką̂mkučīthāban
   ką̂m=kučī-thā-ban
   1>3i>2s=pig-find-PST
   I found your pig.
   \]

The proclitic in each of the above sentences indexes all three core arguments of the clause.

There are also some divalent verbs in Tiwa languages that take the transitive-dative series when the non-A argument is not directly affected by the event or is only affected psychologically, as in (53).

(53) Divalent transitive-dative verb, Southern Tiwa (Frantz nd)
   \[
   hiʰayu bęnnə ámbhi̱me?
   hiʰayu ben= ámbhi̱me
   why 2s>3s>1=NA-bother-PRG
   Why are you bothering me?
   \]

The non-used O argument is coded here as third person singular, but this seems to be simply a lexical specification and no participant is actually being indexed. Further study of the Tiwa languages is required to capture the full distribution of such divalent transitive-dative predicates.
Formally, the Tiwa transitive-dative paradigm is highly complex, with the person and/or number being specified for all three arguments being indexed. The forms are somewhat less tightly packaged in Tiwa than they are in Kiowa and the marker for the number of the O argument is often relatively clear. This complexity does mean breaking up the paradigm amongst multiple tables once again.

Table 11-31 presents those proclitics that index a first person D argument.

Table 11-31: Tiwa Transitive-Dative \( X>X>I \) Paradigm

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>D</th>
<th>Taos</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>2S</td>
<td>S/A</td>
<td>I</td>
<td>mêm</td>
<td>bên</td>
</tr>
<tr>
<td>2D</td>
<td>i/B</td>
<td></td>
<td>mêm</td>
<td>mêm</td>
</tr>
<tr>
<td>2P</td>
<td></td>
<td></td>
<td>mêm</td>
<td>mêm</td>
</tr>
<tr>
<td>2S</td>
<td>p/C</td>
<td></td>
<td>môm</td>
<td>baw</td>
</tr>
<tr>
<td>2D</td>
<td></td>
<td></td>
<td>môm</td>
<td>mêm</td>
</tr>
<tr>
<td>2P</td>
<td></td>
<td></td>
<td>mêm</td>
<td>mêm</td>
</tr>
<tr>
<td>3</td>
<td>X</td>
<td></td>
<td>PASSIVE</td>
<td></td>
</tr>
</tbody>
</table>

It can be seen that number is consistently distinguished in a second person A argument in Southern Tiwa, but not in Taos Tiwa. Similarly, there is always a three-way number contrast in the O argument in Southern Tiwa, but only a two-way contrast in Northern Tiwa, the singular and inverse being merged. In neither language is number specified for the first person D argument. When the agent is third person, a passive construction is obligatorily used, as will be described shortly below.

The pronominal counterparts that index a second person D argument are shown in Table 11-32. This set is more highly elaborated in both languages.
Table 11-32: Tiwa Transitive-Dative $X>X>2$ Paradigm

<table>
<thead>
<tr>
<th></th>
<th>O</th>
<th>D</th>
<th>Taos</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>kò</td>
<td>ka</td>
</tr>
<tr>
<td>1</td>
<td>2s</td>
<td>kòm</td>
<td>kôm</td>
<td>kâm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>kòw</td>
<td>kàw</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2D</td>
<td>mòpènôm</td>
<td>bibîm ~ mîm(îm)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>mòpènôw</td>
<td>bibîw ~ mîw</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2p</td>
<td>mòpîm</td>
<td>mâm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>mòpîw</td>
<td>màw</td>
<td></td>
</tr>
</tbody>
</table>

No number is ever distinguished for the first person A argument, but both languages maintain a three-way number contrast for the second person dative. Number is also distinguished for the third person O argument, but singular and inverse are merged in both languages when the D argument is non-singular. As in the previous table, a passive must be used when the agent is a third person argument.

The passive construction was already mentioned in previous sections and is required whenever the D argument is a SAP and the erstwhile A is third person. The O argument does not influence the construction. The verb is put in the same passive form as described above for the transitive and the transitive-dative pronominal series is swapped out for the intransitive-dative series. The O argument is then indexed as the S argument, the D stays a D, while the A argument is expressed as a case-marked oblique, at least in Southern Tiwa. This construction was illustrated for Southern Tiwa in section 11.4.4 and is here exemplified with the Taos Tiwa sentence in (54).
The A and the O arguments are both third person, but the presence of a first person dual possessor (indexed as a D argument) necessitates the use of the passive construction. What would be a transitive-dative indexation construction thence becomes an intransitive-dative construction instead.

When the D argument is third person, the number of forms in the transitive-dative paradigm explodes, with full person and number contrasts in the A argument, the three-way number contrast (singular, inverse, plural) in the O argument, and the three-way number contrast (singular, dual, plural) in the D argument. However, the number of forms is not as large as it could be as many configurations are syncretized. Table 11-33 gives those proclitics indexing a third person singular D argument in Taos and Southern Tiwa.
Table 11-33: Tiwa Transitive-Dative $X>X>3s$ Paradigm

<table>
<thead>
<tr>
<th>A:</th>
<th>O:</th>
<th>D</th>
<th>Taos</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>S/A</td>
<td></td>
<td>tɔ</td>
<td>ta</td>
</tr>
<tr>
<td></td>
<td>I/B</td>
<td></td>
<td>tɔ̨m</td>
<td>təm</td>
</tr>
<tr>
<td></td>
<td>P/C</td>
<td></td>
<td>tɔ̨w</td>
<td>taw</td>
</tr>
<tr>
<td>2S</td>
<td>S/A</td>
<td></td>
<td>ŋ</td>
<td>a</td>
</tr>
<tr>
<td>3S</td>
<td>I/B</td>
<td></td>
<td>ŋm</td>
<td>əm</td>
</tr>
<tr>
<td>2S</td>
<td>P/C</td>
<td></td>
<td>ŋw</td>
<td>aw</td>
</tr>
<tr>
<td>3S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1D</td>
<td>S/A</td>
<td></td>
<td>ɔpénŋm</td>
<td>mūm</td>
</tr>
<tr>
<td></td>
<td>I/B</td>
<td></td>
<td>ɔpénŋw</td>
<td>mūw</td>
</tr>
<tr>
<td></td>
<td>P/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>S/A</td>
<td></td>
<td>mɔpénŋm</td>
<td>imjim</td>
</tr>
<tr>
<td></td>
<td>I/B</td>
<td></td>
<td>ɔpénŋw</td>
<td>iwiw</td>
</tr>
<tr>
<td></td>
<td>P/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3D</td>
<td>S/A</td>
<td></td>
<td>ɔpénŋm</td>
<td>imjim</td>
</tr>
<tr>
<td></td>
<td>I/B</td>
<td></td>
<td>ɔpénŋw</td>
<td>iwiw</td>
</tr>
<tr>
<td></td>
<td>P/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1P</td>
<td>S/A</td>
<td></td>
<td>ipîm</td>
<td>mūm</td>
</tr>
<tr>
<td></td>
<td>I/B</td>
<td></td>
<td>ipîw</td>
<td>mūw</td>
</tr>
<tr>
<td></td>
<td>P/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2P</td>
<td>S/A</td>
<td></td>
<td>mɔpîm</td>
<td>ĭm</td>
</tr>
<tr>
<td></td>
<td>I/B</td>
<td></td>
<td>mɔpîw</td>
<td>iw</td>
</tr>
<tr>
<td></td>
<td>P/C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3P</td>
<td>S/A</td>
<td></td>
<td>ipîm</td>
<td>ĭm</td>
</tr>
<tr>
<td></td>
<td>I/B</td>
<td></td>
<td>ipîw</td>
<td>iw</td>
</tr>
<tr>
<td></td>
<td>P/C</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comparable to what we find in the transitive paradigm, first and third person dual and first and third person plural of the A arguments are expressed with the same forms in Taos Tiwa. Southern Tiwa, on the other hand merges second and third person dual and second and third person plural as well as first person dual and plural. Both languages use the same proclitics to index second and third person singular A arguments, as in the intransitive-dative. Both languages also merge the singular and inverse numbers of the O argument when the A is non-singular.
Table 11-34 squeezes together the Taos and Southern Tiwa proclitics that index a third person dual or plural D argument. There are numerous mergers in the third person D paradigm, but each language merges different configurations.

Table 11-34: Tiwa Transitive-Dative $X>X>3_{NS}$ Paradigm

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>D</th>
<th>Taos</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S/D</td>
<td>S/A / I/B</td>
<td>3D</td>
<td>ṭpěn̓m̃</td>
<td>bib̓m ~ m̓m(įm)</td>
</tr>
<tr>
<td>1P</td>
<td></td>
<td></td>
<td>ip̓m</td>
<td></td>
</tr>
<tr>
<td>1S/D</td>
<td>P/C</td>
<td></td>
<td>ṭpěn̓w</td>
<td>bibiw ~ m̓w(iw)</td>
</tr>
<tr>
<td>1P</td>
<td></td>
<td></td>
<td>ip̓w</td>
<td></td>
</tr>
<tr>
<td>1S/D</td>
<td>S/A / I/B</td>
<td>3P</td>
<td>ṭpěn̓m̃</td>
<td>b̓im ~ m̓m</td>
</tr>
<tr>
<td>1P</td>
<td></td>
<td></td>
<td>ip̓m</td>
<td></td>
</tr>
<tr>
<td>1S/D</td>
<td>P/C</td>
<td></td>
<td>ṭpěn̓w</td>
<td>biw ~ m̓w</td>
</tr>
<tr>
<td>1P</td>
<td></td>
<td></td>
<td>ip̓w</td>
<td></td>
</tr>
<tr>
<td>2S/D</td>
<td>S/A / I/B</td>
<td>3D</td>
<td>m̓pěn̓m̃</td>
<td>m̓m ~ i̓m̓m</td>
</tr>
<tr>
<td>3S/D</td>
<td></td>
<td></td>
<td>ṭpěn̓m̃</td>
<td>i̓m̓m</td>
</tr>
<tr>
<td>2S/D</td>
<td>P/C</td>
<td></td>
<td>m̓p̓ěn̓w</td>
<td>i̓wiw</td>
</tr>
<tr>
<td>3S/D</td>
<td></td>
<td></td>
<td>ṭp̓ěn̓w</td>
<td></td>
</tr>
<tr>
<td>2S/D</td>
<td>S/A / I/B</td>
<td>3P</td>
<td>m̓p̓ěn̓m̃</td>
<td>m̓m ~ i̓m</td>
</tr>
<tr>
<td>3S/D</td>
<td></td>
<td></td>
<td>ṭp̓ěn̓m̃</td>
<td>i̓m</td>
</tr>
<tr>
<td>2S/D</td>
<td>P/C</td>
<td></td>
<td>m̓p̓ěn̓w</td>
<td>m̓w ~ i̓w</td>
</tr>
<tr>
<td>3S/D</td>
<td></td>
<td></td>
<td>ṭp̓ěn̓w</td>
<td>i̓w</td>
</tr>
<tr>
<td>2P</td>
<td>S/A / I/B</td>
<td>3D</td>
<td>m̓p̓i̓m</td>
<td>m̓m ~ i̓m</td>
</tr>
<tr>
<td>3P</td>
<td></td>
<td></td>
<td>i̓p̓i̓m</td>
<td>i̓m</td>
</tr>
<tr>
<td>2P</td>
<td>P/C</td>
<td></td>
<td>m̓p̓i̓w</td>
<td>m̓w ~ i̓w</td>
</tr>
<tr>
<td>3P</td>
<td></td>
<td></td>
<td>i̓p̓i̓w</td>
<td>i̓w</td>
</tr>
</tbody>
</table>

One common fact is that in the O argument, singular and inverse are always conflated but are always kept distinct from plural. Also, neither language makes a singular-dual distinction for the A argument. Taos Tiwa never distinguishes dual and plural for the dative argument, but does always keep plural distinct from singular-dual in the A argument. Taos also shows syncretism in A arguments between first person and third
person singular-dual and first and third person plural. Southern Tiwa, however, makes no number distinction for a first person A argument but does distinguish the number of the D argument at least some of the time. There is a lot of variation in the reports on these pronominal forms in Southern Tiwa, the greater differentiation being found in the older sources. Thus, there may be syncretism between second and third person and/or between singular-dual and plural number in the A argument and even between dual and plural in the D argument for some speakers.

As in the intransitive-dative pronominals, something of a pattern can be seen in the Tiwa languages. Inverse forms tend to end in /m/, plural forms tend to end in /w/, and singular forms, when distinct from inverse forms, tend to be unmarked. When the transitive-dative pronominals occur with an O argument to be marked with \( n_\circ \) in Taos Tiwa, the singular form of the pronominal is used and any \(-m\text{ or }-w\) is removed.

Both Southern Tiwa and Taos Tiwa may follow the transitive-dative pronominals with a reflexive marker \( m_\circ \) (TA) or \( be-\) (ST). The pronominal must take the shortened singular indexation for the O argument, as with \( n_\circ \). This construction indicates reflexive coreferrentiality between the A argument and the O argument.

11.5 Towa

The last Kiowa-Tanoan language to be covered here, the Towa pronominal system is in many ways the most streamlined. Under one analysis, Towa could be considered to have the smallest number of actual unique indexation forms, but they are organized in such a way that the same degree of expression is achieved as is found in the much larger systems of Kiowa and Tiwa. The Towa proclitics, like those in the rest of the family, can
be divided into intransitive (11.5.1), reflexive (11.5.2), transitive (11.5.3), intransitive-dative (11.5.4), and transitive-dative (11.5.5).

11.5.1 Towa Intransitive

Towa may show the widest distribution of the intransitive paradigm of any of the Kiowa-Tanoan languages. The reflexive paradigm does not appear to have insinuated itself amongst monovalent predicates as extensively as in the other branches, but I have not yet accumulated enough data to be certain of the relative distribution of these two paradigms. The intransitive paradigm is at least found across the usual monovalent semantic categories as seen in the other languages: stative (55)a, change of state (55)b, directed motion (55)c, static position (55)d, and mental activity (55)e.

(55) Towa intransitive usage

a. Stative (Yumitani 1998: 184)
   hæ k’a qk’ěnį
   Q T/A 2S.ITR=tired.ST
   Are you tired?

b. Change of State (Yumitani 1998: 160)
   k’a ìdî-ó
   k’a i=ðî-ó
   T/A 1S.ITR=sleep-become.PF
   I got sleepy

c. Directed Motion (Sprott 1992: 209)
   α’č’ae
   a=’č’=’ae
   2S.ITR=come.POT=if
   If you come, I will go.

d. Position (Yumitani 1998: 150)
   dô-š egeh’ó
   That-I 3I.ITR=be.lying.P.ST
   They (pl.) are lying down.
e. Mental Activity (Sprott 1992: 35)

\[
\begin{align*}
nǐ & \quad mì \quad sa \quad ɲl & \quad i\wâ\cdot mì \\
nǐ & \quad mì \quad sa \quad ɲl & \quad i=wâ\cdot mì \\
1S & \quad cat & \quad also & \quad 1S.ITR=want.ST
\end{align*}
\]

*I want a cat too.*

Like in the Tiwa languages, Towa also uses its intransitive pronominal paradigm to index the patient in a transitive passive construction. This is obligatory when the patient is a speech act participant, as in (56), but is also found when two third person arguments are involved. The agent, if expressed, is case-marked with a postposition and is not indexed on the verb.

(56) Passive Subject (Yumitani 1998: 184)

\[
\begin{align*}
na=ta & \quad nî & \quad itô\quad sâe \\
na=ta & \quad nî & \quad i=tô\quad sâe \\
that=AGT & \quad 1S & \quad 1S.ITR=hit.PS.PF
\end{align*}
\]

*S/he punched me.*

This Towa sentence illustrates a first person singular patient with a third person agent. The first person is indexed by the intransitive proclitic i= and the verb is marked as passive while the demonstrative expression of the third person agent is case marked with the postposition =\( t\alpha \). The Towa passive will be discussed alongside the Tiwa construction in chapter 0.

The Towa intransitive proclitics appear in Table 11-35. There is the usual three-way distinction in person. First and second person distinguish singular, dual, and plural number while third person shows a four-way contrast amongst singular, dual, (inanimate) plural, and inverse.
Table 11-35: Towa Intransitive Paradigms

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>I</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>i</td>
<td>j</td>
<td>e-</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>a</td>
<td>mo-l</td>
<td>ba</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ø</td>
<td>i-l</td>
<td>e</td>
<td>i-l</td>
</tr>
</tbody>
</table>

As in Kiowa and the Tiwa languages, the elaborated number of the third person serves to express noun class information. Class I (animate) nouns are indexed with the singular proclitic for singular and with the inverse proclitic for plural. Class II (inanimate) nouns use the inverse to express singular while the plural is indexed with either singular or plural. Class III (inanimate) nouns use the singular proclitic for singular number and the singular or the plural for plural number. There may be some lexical specification among nouns of Classes II and III where a given noun may only occur with either singular or plural. However, Yumitani (1998: 105) also reports that some nouns may be indexed with either singular or plural depending on the intended construal: the plural apparently denotes a collective reading and the singular a more distributive reading. More study of this language is needed to work out the details. Finally, there are also Class IV nouns which do not distinguish any grammatical number and tend to be indexed with the singular proclitic.

The second and third person dual proclitics both are represented with a coda -l=, which is actually realized by the morphophonological “L-Effect” on a following consonant (see chapter 6.7.3.4). Proclitics that induce the “L-Effect” will be marked with a final /l/ in the tables throughout this section. Finally, just as in Kiowa and Tiwa, the third person singular is not overtly marked with a pronominal form.
The one exception to the null third person marking is a spatial marker, which seems to be cognate with the nɔ̞=nɑ̞ affix of Tiwa. The Towa prefix nɔ̞- has a much more limited and uncertain distribution. It at least seems to be used with predications of specific location, as in (57).

(57) Spatial marker (Sprott (1992: 140)
    Chicago nɔ̞hি
    Chicago Ø=nɔ̞-hি
    Chicago 3S.ITR=NO-be.named.ST
    Its name is Chicago.

This is the one example of the Towa prefix that I have been able to find.

11.5.2 Towa Reflexive

The Towa reflexive paradigm is most akin to that in Kiowa insofar as it is comprised of a subset of the transitive paradigm. Specifically, Towa reflexive proclitics are identical to those transitive forms that index a third person inanimate plural O argument. In distribution the Towa reflexive series is comparable to what we find in all other branches, although perhaps more restricted than its counterparts in Tewa and Tiwa.

As befits its name, these pronominals are used when the A argument of a transitive action direct the action in a reflexive or reciprocal manner, as in (58).

(58) Transitive reflexive usage (Yumitani 1998: 170)
    dɔ̞ ʔɪ ɪɨ
dɔ̞ ʔɪ il-ɨï
    that RFL 3S.RFL=kill.PF
    S/he killed him-/herself.

Towa has a reflexive particle ʔɪ, shown here, as well as a reciprocal particle which serve to reinforce these transitive usages. Such particles are not then used when the reflexive paradigm accompanies a monovalent predicate. Reflexive monovalent verbs are
comprised of verbs denoting change of position (59a), bodily functions and vocal activity (59b), and at least some manner of motion predicates (59c).

(59) Monovalent reflexive usages

a. Change of position (Yumitani 1998: 170)

\[ k'į \, \text{tak}^y\hat{a} \]
\[ kį \, \text{ta}=\text{k}^{'\hat{u}} \]

child 1S.RFL=lay.S/D.PF

*The child lay down.*

b. Bodily/Vocal activity (Yumitani 1998: 169)

\[ k'į \, \text{y}^{\hat{o}} \, \text{ij}^\text{i} \]
\[ kį \, \text{y}^{\hat{o}} \, \text{il}=\text{š}^\text{i} \hat{=} \]

child hard 3S.RFL=cry-do.PF

*The child cried loud.*

c. Manner of motion (Yumitani 1998: 169)

\[ \text{héš}^\text{o} \, \text{vi} \, \text{ti}^\text{č} \hat{=} \]
\[ \text{héš}^\text{o} \, \text{vi} \, \text{il}=\text{k}^{'\hat{a}} \]

every.day 1S.RFL=dance.IPF

*I dance every day.*

As noted in the previous section, the extent of the reflexive monovalent class in Towa has yet to be determined. Examples I have seen suggest it is not extensively used in this function, but that could be an accident of the elicitation used in the printed works on Towa.

Because the reflexive paradigm is derived from transitive proclitics, these forms also find other uses that directly descend from the transitive function. The third person (inanimate) plural is used to express unspecified objects in Towa, meaning that an indefinite O argument in a transitive configuration will appear to be indexed with a reflexive proclitic, as in (60).
In its function as a marker of inanimate plural, one would not expect to be able to use the proclitic til= with the animate referent kvgə̇ni dog, but we find such an instance here. This usage is thus licensed by the fact that no specific or definite referent is intended by the noun or pronominal indexation.

The Towa reflexive paradigm is given in Table 11-36. Proclitics distinguish first, second, and third person and singular, dual, and plural number.

Table 11-36: Towa Reflexive Paradigm

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>tι-l</td>
<td>sο-l</td>
<td>se-l</td>
</tr>
<tr>
<td>2</td>
<td>kι-l</td>
<td>mο-l</td>
<td>bα-l</td>
</tr>
<tr>
<td>3</td>
<td>i-l</td>
<td>j-i</td>
<td>e-l</td>
</tr>
</tbody>
</table>

Note that all Towa forms take a final /l/ (realized through the “L-Effect”). These forms are otherwise clear and straightforward in synchronic perspective.

11.5.3 Towa Transitive

The transitive paradigm in Towa is straightforward and cleanly organized. Most divalent events that do not involve the semantics requiring a dative are indexed with the transitive series. As in Tewa, Towa also indexes some of its semantically trivalent predicates with transitive pronominal proclitics. This set interestingly includes the prototypically ditransitive verb mᾱ̄ give, where the A argument indexes the agent and the O argument indexes the recipient, as shown in (61).
(61) Trivalent transitive usages (Yumitani 1998: 38, 178)

a. \[\text{tahimæ} \]
\[\text{ta}=\text{hi-mæ} \]
\[1S>3S=\text{clothing-give.PF} \]
I gave him/her clothes.

b. \[\text{bélá títqimqmæ} \]
\[\text{bélá til}=\text{kímq-mæ} \]
bread \[1S>3D=\text{trade-give.PF} \]
I sold bread to them (du.).

c. \[\text{hâ· temá·ša'ô} \]
\[\text{hâ· te}=\text{má·ša'ô} \]
car \[1S>3I=\text{borrow.PF} \]
I borrowed a car from them (pl.).

The proclitic in each of these sentences indexes both the agent or source and the recipient while the object being transferred in the trivalent event is not indexed at all (although the noun is incorporated in (61)a).

As we find in the other languages, there are some verbs that have distinctive, but relatable, meanings when they take the reflexive proclitics versus when they take the transitive. This can be observed in the pair in (62).

(62) Transitive alternation with reflexive (Yumitani 1998: 170)

a. \[\text{nî· tavá·sê} \]
\[\text{nî· ta}=\text{vá·sê} \]
\[1S \ 1S>3S=\text{seat.PF} \]
I seated him/her.

b. \[\text{nî· titu·sê} \]
\[\text{nî· til}=\text{vá·sê} \]
\[1S \ 1S.RFL=\text{seat.PF} \]
I sat down.

The transitive form (62)a has a causative reading, where the third person argument is induced to sit by the A argument. In the reflexive (62)b, the agent causes itself to be seated, effectively a monovalent act.
The form of the Towa transitive paradigm is distributed between two tables. As in the other languages, it is useful to divide out those proclitics that index a speech act participant as the O argument. Table 11-37 presents this small set of forms.

Table 11-37: Towa Transitive $X>SAP$ Paradigm

<table>
<thead>
<tr>
<th>A $&gt;$ O</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1$&gt;$2s</td>
<td>$q \sim a$</td>
</tr>
<tr>
<td>1$&gt;$2d</td>
<td>$m\theta$-l</td>
</tr>
<tr>
<td>1$&gt;$2p</td>
<td>$ba$</td>
</tr>
<tr>
<td>2$&gt;$1</td>
<td>$b\alpha$</td>
</tr>
<tr>
<td>3$&gt;$1</td>
<td>PASSIVE</td>
</tr>
<tr>
<td>3$&gt;$2</td>
<td></td>
</tr>
</tbody>
</table>

As usual, no number distinctions are expressed in the A argument, but the second person O argument has the usual three-way contrast. When the O argument is first person, no number distinctions are made for either A or O. Recalling the other paradigms, it can be noted that the second person O argument proclitics are identical to the second person forms seen in the intransitive paradigm.

Towa, like Tiwa, expresses a portion of this paradigm by using a passive construction. There are no grammaticalized proclitics that index a third person A acting on a first or second person O. Speakers are obligated to put the verb into a passive/inverse construction, index the O argument with an intransitive pronominal proclitic, and mark any lexical expression of the agent with a case enclitic. The sentence illustrating the passive in section 11.5.1 is repeated here as (63).

(63) Passive construction (Yumitani 1998: 184)

\[
\begin{align*}
\text{nä} & \cdot tə \quad \text{nj} \cdot \text{itō} \cdot sâ
\text{nä} & = tə \quad \text{nj} \quad i= \text{tō} \cdot sâ
\text{that}=\text{AGT} & \quad 1S \quad 1S.ITR=\text{hit.PS.PF}
\end{align*}
\]

\begin{align*}
S/he & \text{ punched me.}
\end{align*}
The similarity to the construction in Tiwa is readily apparent. It is argued in chapter 0 that these branches are the more conservative in showing this obligatory passive construction.

The remainder of the transitive paradigm, expressing a third person O argument, is presented in Table 11-38. The O argument is distinguished for four numbers, singular, dual, inverse, and (inanimate) plural, the number indexation dictated by the noun class of the O argument.

Table 11-38: Towa Transitive $X\rightarrow S$ Paradigm

<table>
<thead>
<tr>
<th>$A \downarrow / O$</th>
<th>3S</th>
<th>3D</th>
<th>3I</th>
<th>3P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>ta</td>
<td>ti-l</td>
<td>te</td>
<td>ti-l</td>
</tr>
<tr>
<td>2S</td>
<td>q~a</td>
<td>j-l</td>
<td>e</td>
<td>ki-l</td>
</tr>
<tr>
<td>3S</td>
<td>Ø</td>
<td>j-l</td>
<td>e</td>
<td>i-l</td>
</tr>
<tr>
<td>1D</td>
<td>sq</td>
<td>sqpa</td>
<td>sq-l</td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>mq</td>
<td>mqpa</td>
<td>mql</td>
<td></td>
</tr>
<tr>
<td>3D</td>
<td>q</td>
<td>qpa</td>
<td>j-l</td>
<td></td>
</tr>
<tr>
<td>1P</td>
<td>se</td>
<td>sepa</td>
<td>se-l</td>
<td></td>
</tr>
<tr>
<td>2P</td>
<td>ba</td>
<td>bapa</td>
<td>bap-l</td>
<td></td>
</tr>
<tr>
<td>3P</td>
<td>e</td>
<td>epa</td>
<td>e-l</td>
<td></td>
</tr>
</tbody>
</table>

It can be seen that the third person plural O proclitics are identical to the reflexive paradigm. The dual and the inverse are only distinguished when the A argument is singular, otherwise they are expressed by the same forms. There is also syncretism between second and third person singular A arguments when the O argument is dual or inverse. As we find in Kiowa and Tiwa, the $3S>3S$ configuration is not expressed by any overt pronominal form.

Just as we find an obligatory passive when a third person A combines with a SAP O argument, Towa also possesses an “optional” passive which conveys discourse
information structure in 3>3 configurations. The sentence in (64) illustrates such a use of the Towa passive.

(64) Passive and information structure (Sprott 1992: 223)

\[ \text{nǐ ǵa Jesus=tæ d́o sqdá́li f́i n̥ O=̧m̥sá} \]
\[ \text{nǐ ǵa Jesus=tæ d́o sqdá́li f́i n̥ O=̧m̥sá} \]
\[ \text{then HSY Jesus=AGT that soldier chief thus 3S.IPF=tell.PS.IPF} \]

Then Jesus said to the centurion...

In (64) the centurion had just approached and spoken to Jesus in the previous sentence and so is more prominent than the agentive Jesus in the immediate discourse, licensing the passive construction. As these two referents are tracked, the passive may alternate with active structures in order to keep the topical participant in A or S position. This use of the Towa passive will also be discussed in chapter 0.

11.5.4 Towa Intransitive-Dative

It is in the two dative paradigms that Towa is at its most succinct and streamlined in comparison to the other Kiowa-Tanoan languages without significantly reducing the number of arguments overtly indexed. In the intransitive-dative, the dative argument is fully elaborated, as in all of the languages, while the S argument indexes the noun class of an argument via number distinctions.

The Towa intransitive-dative expresses possession in its most common function, illustrated in (65).

(65) Possession (Sprott 1992: 102)

\[ \text{d́o ǵbaš qñé} \]
\[ \text{d́o ǵbaš qñ=la=é} \]
\[ \text{that jar-1 3>>3S=1-be.sitting.S/D.ST} \]
\[ S/he has a water jar. \]
The possessed argument may be animate or inanimate and may stand outside the verb bearing the intransitive-dative proclitics or be incorporated. Like we find in the other languages, the dative proclitics may be appended to any intransitive verbs, e.g. the stative verb in (66)a, but most commonly attach to copulas or positional verbs, as in (66)b.

(66) Possession and monovalent predicates (Yumitani 1998: 187)

a. Stative verb

\[
\begin{align*}
\text{nǐ́ k'â̞ṇ̞í jiḥ̞ố mí} \\
\text{nǐ́ k'â̞ṇ̞í j= hô̞'-mí}
\end{align*}
\]

1S dog 3S>>1S=sick-feel.ST

My dog is ill.

b. Positional verb

\[
\begin{align*}
\text{nấ̞ dê̞ḷ̞í nǐ́ j̣k'á́} \\
\text{nấ̞ dê̞ḷ̞í nǐ́ j= k'á́}
\end{align*}
\]

that chicken 1S 3S>>1S=be.lying.S/D.ST

That chicken is mine.

In both of these examples, the possessum stands unincorporated (and is animate in both sentences). Note too the independent pronoun that is coreferential with the possessor indexed in the dative proclitic in example (66)a. Towa, like Tiwa, has no grammaticalized dependent marking attributive possessor morphology, but the independent pronoun juxtaposed to the possessum may have a comparable function here.

Towa is also like Tiwa in making common use of a relativization strategy to use the intransitive-dative proclitics to denote attributive possession. The sentences in (67) shows such a relativized possessor.

(67) Relativized possessive construction (Yumitani 1998: 187)

\[
\begin{align*}
\text{nǐ́ j̣k'á́=e} & \quad \text{bèł̣á́ ŝí} \\
\text{nǐ́ j= k'á́=2e} & \quad \text{bèł̣á́ ŝ=ší̞}
\end{align*}
\]

1S 3S>>1S=be.lying.S/D.ST=REL bread 3S=fall.PF

My bread fell off.
In sentence (67) we find a relativized positional verb modifying the possessed noun *bélá bread* rather than indexing the possessor on the intransitive main predicate *ší fall*. The possessum here stands unincorporated, but it is possible to incorporate the noun into either the relativized possession construction or into the main verb without changing anything else about the sentence.

Less common than the possessive usage, the intransitive dative may also express a beneficiary with a monovalent event, as seen in (68).

(68) Beneficiary usage (Yumitani 1998: 187)

```
howa jwóhomį
howa j=wóho-mį
very 3s>>1s=happy-feel.ST
S/he is very happy for me.
```

The dative argument here only indirectly benefits from the stative event being expressed by the predicate. Such constructions do not seem to be overly common, even if they are not particularly rare.

Within the intransitive-dative construction, the S argument is overwhelmingly third person while the D argument may be of any person or number, as across the family. This has been argued to be functionally motivated. Perhaps stemming from this functional tendency during its development, the S argument makes no distinctions for person, only number. While it could be considered inherently third person given common usage, Sprott (1992) gives examples of a Towa intransitive-dative where the S argument is a speech act participant. The pronominal still expresses only the number in such rare instances, the person having to be expressed by other means, e.g. an independent pronoun. Sprott's examples are shown in (69).
In (69)a the possessum S argument is second person plural while in (69)b the S is first person plural. The person of these arguments is not explicitly indexed on the verb, but the number is reflected in the inverse marker. The dative in these cases still expresses the person and number of the possessor. These appear to be elicited examples and it is not clear how common such expressions would be.

Finally, just as in Tiwa, the intransitive-dative is used to index the arguments in the passive of a transitive-dative construction. Whenever the agent of a transitive-dative is third person and the dative is a speech act participant, the transitive-dative paradigm lacks the appropriate pronominal forms and a passive is required. The agent is expressed as a case-marked oblique and is not indexed, the O argument is expressed as the S of the intransitive-dative and the D argument continues to be expressed as a D argument. This is required whether the dative indexes a possessor (70)a or a recipient (70)b.

(70) Dative passive

a. Possessive dative passive (Yumitani 1998: 191)
   \[
   \text{nà \text{-tæ} \; \phió \text{-lú} \; \text{jê\text{-Ílæ}}}
   \text{nà\text{=tæ} \; \phió \text{-lú} \; \text{jê\text{=Ílæ}}}
   \text{that=AGT\;hair} \; \text{3S>>1S=comb.PS.PF}
   \]
   \[
   S/he combed my hair.
   \]
b. Recipient dative passive (Yumitani 1998: 192)

\[
\begin{align*}
\text{nâĉ tæ} & \quad \text{bélú} \quad \text{jihû pæ} \\
\text{nâĉ=tæ} & \quad \text{bélú} \quad \text{i=hu pæ}
\end{align*}
\]

that=AGT bread 3S>>1S=bake.PS.PF

S/he baked bread for me.

In either interpretation, any expressed agent requires the case marker =tæ in Towa, marked in both of the above sentences on the demonstrative nâĉ: that. The O argument which comes to be indexed as the S here does not influence the active-passive alternation. Also, the same passive construction can be used with a third person dative when it is more prominent than a third person agent in a transitive-dative construction, just like the passive alternation seen in the transitive.

There is also report of a small number of monovalent verbs which require the intransitive-dative for their basic argument indexation. These are illustrated in (71).

\[(71) \quad \text{Towa monovalent dative verbs}
\]

\[
\begin{align*}
\text{nóʔó} & \quad \text{finish} & \text{nó} & \quad \text{be forgetful} \\
\text{sáʔó} & \quad \text{wake up} & \text{pé lë} & \quad \text{think of}
\end{align*}
\]

These verbs express mental states or have some amount of aspectual force (finish), just as we find in Kiowa, Tewa, and Tiwa.

The actual pronominal proclitic forms of the intransitive-dative paradigm are given in Table 11-39. The usual contrasts are seen in the dative argument. The S argument shows a two-way distinction between basic number and inverse number. The distribution of these numbers depends on the noun class of the referent. Note in Towa that dual number is indexed as inverse in this paradigm.
The inverse number marking for the S argument is expressed via the “L-Effect” on the stem consonant following the proclitic. As described elsewhere, other elements may come between this /l/ and the rest of the proclitic. However, through this inverse marker and the noun class system, these proclitics are able to express the number of the S argument with very little ambiguity.

11.5.5 Towa Transitive-Dative

After the various patterns seen in the preceding sections, the Towa transitive-dative paradigm appears to require little comment. Like its counterparts in the other languages, it serves to add a dative argument to an otherwise divalent transitive event. This dative may express a recipient (71)a, a beneficiary (71)b, or the possessor of the O argument (71)c, as typical of the family.

Transitive-Dative usages

a. Recipient dative (Yumitani 1998: 181)

\[
\begin{align*}
\text{nôto} & \quad \text{kotchhû} \\
\text{nôto} & \quad \text{kô=1-sêhû}
\end{align*}
\]

letter \text{ 1S>3>2S=1-send.PF}

\text{I sent a letter to you.}
b. Beneficiary dative (Yumitani 1998: 183)

\[
\begin{align*}
\text{nǐ· nê· tā\ dēlī\ tōlā} \\
1\text{s\ that three chicken-i} 1\text{s>3=3s=i-bake.PF}
\end{align*}
\]

I baked three chickens for him/her.

It was already noted in section 11.5.3 that most ditransitive predicates make use of the transitive paradigm to index the agent and recipient. However, we do find predicates that require the transitive-dative proclitics but only semantically entail two arguments. The verb in (72) illustrates such a predicate.

(72) Divalent transitive-dative usage (Yumitani 1998: 183)

\[
\begin{align*}
\text{tōnō bæ\nê} \\
\text{tō=nô bâ·} \\
1\text{s>3=3s=let.go.PF}
\end{align*}
\]

I let him/her go.

It is unknown how many predicates in the language require such indexation. The unused O argument is simply coded as the unmarked basic number, it appears.

In form the transitive-dative is much like the transitive, but is accompanied by the “L-Effect” to express inverse number of an O argument. The proclitic itself then indexes the person and number of the A and D arguments. Table 11-40 shows the Towa proclitics that index a SAP D argument. The patterns involved are quite familiar by now.
Table 11-40: Towa Transitive-Dative $X\rightarrow S/AP$ Paradigm

<table>
<thead>
<tr>
<th>A &gt; D ↓ / O →</th>
<th>BS</th>
<th>l</th>
</tr>
</thead>
<tbody>
<tr>
<td>$I &gt; 2s$</td>
<td>kʊ</td>
<td>kʊ-l</td>
</tr>
<tr>
<td>$I &gt; 2d$</td>
<td>mʊ</td>
<td>mʊ-l</td>
</tr>
<tr>
<td>$I &gt; 2p$</td>
<td>bʊ</td>
<td>bʊ-l</td>
</tr>
<tr>
<td>$2 &gt; 1$</td>
<td>bɛ</td>
<td>bɛ-l</td>
</tr>
<tr>
<td>$3 &gt; 1$</td>
<td>PASSIVE</td>
<td></td>
</tr>
<tr>
<td>$3 &gt; 2$</td>
<td>PASSIVE</td>
<td></td>
</tr>
</tbody>
</table>

Number is only distinguished in the second person non-A argument, otherwise number is left ambiguous. Whenever a third person agent occurs with a first or second person dative, a passive construction is required. The verb is put in the same passive form as described above for the transitive and the transitive-dative pronominal series is replaced with the intransitive-dative series. The O argument is then indexed as the S argument, the D stays a D, while the A argument is expressed as a case-marked oblique, as in (73).

(73) Dative passive (Yumitani 1998: 192)

\[
\begin{align*}
n\hat{a}\acute{\,}t\acute{\,} & \quad d\acute{\,}b\acute{\,}s\acute{\,}j\acute{\,}l\acute{\,}e \\
 n\hat{a}\acute{\,}=t\acute{\,} & \quad d\acute{\,}b\acute{\,}=s\acute{\,}j=l-g\acute{\,}l\acute{\,}e \\
\text{that}=\text{AGT} & \quad \text{door}=3>>1\text{S}=\text{I-close.PS.PF} \\
\end{align*}
\]

S/he closed the door for me.

The passive of the transitive-dative exactly mirrors the distribution of the passive of the transitive. It is based on the relative status of the A and D argument rather than of the A and O arguments, however.

The succinct system when the D argument is third person is displayed in Table 11-41. The O argument is always expressed through a contrast between the “L-Effect” and its absence to denote inverse and basic number respectively. The third person D argument shows a three-way distinction in number.
We find some of the regular patterns of syncretism. The third person dual and plural D arguments are not distinguished when the A argument is non-singular. This pattern was seen in the transitive paradigm. Second and third person singular A arguments are always expressed with the same form, as was found in the intransitive-dative paradigm. All other person and number categories are kept distinct.

### 11.6 Independent Pronominal Reference

Before reviewing the previous analyses of the proclitics and before getting into my own comparative-historical analysis, it is worth touching on a related category of morphemes: the independent pronouns (and demonstratives) which are not infrequently used in tandem with the proclitics. There is also a set of bound possessive pronouns in Kiowa that ought to be mentioned in passing.

The exact syntactic and discourse functional distribution of the independent pronouns has not been thoroughly investigated in any of the modern languages. Scholars might throw around words like “emphasis”, but that does not really predict where they actually will occur, especially since they are technically redundant as referential markers.
when coreferential with the pronominal proclitics, except in those rare cases where they might actually disambiguate the proclitic. One clear syntactic slot they may fill is as the object of a postposition when a pronominal referent is an oblique and thus not indexed on the predicate, as in (74)b below. They may also bear overt informational coding like topic and focus markers, thus permitting such marking on pronominal referents, as in (74)a and (74)c.

(74)  Independent pronouns


\[
\begin{align*}
\text{hó} \quad &\text{ʔám’al} \quad \text{abó’?} \\
\text{hó} \quad &\text{ʔám’=al} \quad a=bó’ \\
Q \quad &2=\text{also} \quad 2S=\text{see.PF}
\end{align*}
\]

Did you see him/her too?


\[
\begin{align*}
\text{búkæ’ve} \quad &\text{na’úrí} \\
\text{bú=kæ’ve} \quad &\text{na=ádí}
\end{align*}
\]

2D.IMP=come.IMP \hspace{1cm} 1S=COM

You (du.) come with me!

c.  Rio Grande Tewa (Harrington 1947: 112)

\[
\begin{align*}
\text{ná’} \quad &\text{ʔwú} \quad \text{wíñčãnu} \\
\text{ná’} \quad &\text{ʔw=ú} \quad \text{wíŋ}=\text{čãnu}
\end{align*}
\]

now \hspace{1cm} 2S=TOP \hspace{1cm} 1>\text{x}>2S=\text{throw.PF}

Now I threw it to you.

Otherwise, however, more study is required to address their full range of functions. Their forms, on the other hand, are quite clear and simple, as Table 11-42 succinctly presents.
Table 11-42: Independent Pronouns

<table>
<thead>
<tr>
<th></th>
<th>Kiowa</th>
<th>RGT</th>
<th>AT</th>
<th>Taos</th>
<th>Pic</th>
<th>ST</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>ɲˑ́</td>
<td>ɲˑ́</td>
<td>ɲˑ́</td>
<td>ɲˑ́</td>
<td>ɲˑ́</td>
<td>ɲˑ́</td>
<td>ɲˑ́ ~ ɲˑ́</td>
</tr>
<tr>
<td>1NS EXCL</td>
<td>ɲ qˑ́ ɲˑ́</td>
<td>ɲ qˑ́ ɲˑ́</td>
<td>ɲ qˑ́ ɲˑ́</td>
<td>ɲ qˑ́ ɲˑ́</td>
<td>ɲ qˑ́ ɲˑ́</td>
<td>ɲ qˑ́ ɲˑ́</td>
<td>ɲ qˑ́ ɲˑ́</td>
</tr>
<tr>
<td>1NS INCL</td>
<td>ɲ qˑ́ ɲˑ́ ɲˑ́</td>
<td>ɲ qˑ́ ɲˑ́ ɲˑ́</td>
<td>ɲ qˑ́ ɲˑ́ ɲˑ́</td>
<td>ɲ qˑ́ ɲˑ́ ɲˑ́</td>
<td>ɲ qˑ́ ɲˑ́ ɲˑ́</td>
<td>ɲ qˑ́ ɲˑ́ ɲˑ́</td>
<td>ɲ qˑ́ ɲˑ́ ɲˑ́</td>
</tr>
<tr>
<td>2S</td>
<td>ŋ̄ˑ́</td>
<td>ŋ̄ˑ́</td>
<td>ŋ̄ˑ́</td>
<td>ŋ̄ˑ́</td>
<td>ŋ̄ˑ́</td>
<td>ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́</td>
</tr>
<tr>
<td>3S</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́</td>
</tr>
<tr>
<td>3NS</td>
<td>DEM.</td>
<td>DEM.</td>
<td>DEM.</td>
<td>DEM.</td>
<td>DEM.</td>
<td>DEM.</td>
<td>DEM.</td>
</tr>
<tr>
<td>RFL</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
</tr>
<tr>
<td>RCP</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
<td>ŋ̄ˑ́ ŋ̄ˑ́ ŋ̄ˑ́</td>
</tr>
</tbody>
</table>

All languages have a first person pronoun and second person pronoun, but only Tewa and Towa have differentiation for number. Towa also differentiates first person exclusive from inclusive, the only part of the grammar in which it does this. Kiowa, Tewa, and Towa all lack dedicated third person pronouns, using demonstratives and determiner forms instead. The Tiwa languages all possess a third person form, though, Southern Tiwa also having a contrast in number not found in the first and second person forms.

The table also includes the means of expressing reflexives and reciprocals outside of the pronominal indexation morphemes, although only Towa has been found to use distinct morphemes for the reflexive and reciprocal functions. It is questionable whether or not to call these “pronouns” as only the Tiwa languages encode these functions by adding a suffix to the independent pronouns. Kiowa, Tewa (at least Rio Grande Tewa), and Towa all show no formal correspondence between their reflexives and reciprocals and their pronouns, although the Kiowa form can show some pronoun-like referential functions in certain constructions. I mention them here due to their co-occurrence and shared function with the reflexive series of pronominals.
Since they often may fill a pronominal function, Table 11-43 lays out the determiners and demonstratives in the languages. Only Tewa has grammaticalized determiners, often also used as articles, for expressing definite and indefinite referents\(^{20}\). An actual corpus count would probably reveal that most of the languages use these forms pronominally (in place of third person pronouns) only infrequently, but they are not uncommonly used to refer with their deictic demonstrative force, it seems to me. This is another area for further research.

Table 11-43: Determiners

<table>
<thead>
<tr>
<th></th>
<th>Kiowa</th>
<th>RGT</th>
<th>AT</th>
<th>Taos</th>
<th>Pic</th>
<th>ST</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INDF. BS.</strong></td>
<td></td>
<td>wí</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>INDF. I.</strong></td>
<td></td>
<td>wêŋ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DF. BS</strong></td>
<td>ñí</td>
<td>ñí</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DF. I.</strong></td>
<td>ñíŋ</td>
<td>ñíŋ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PROX. S/A</strong></td>
<td>ẽɗe</td>
<td>nêŋŋ</td>
<td>ẽi</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PROX. P/C</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PROX. I/B</strong></td>
<td>ẽɗə</td>
<td>nêŋŋ</td>
<td>ẽi</td>
<td>yûna</td>
<td>yônt’i</td>
<td>yûde ~ nûde</td>
<td>nê dâe / hî dâe</td>
</tr>
<tr>
<td><strong>MED. S/A</strong></td>
<td>hêŋŋ</td>
<td>hêŋ</td>
<td></td>
<td>yêna</td>
<td></td>
<td></td>
<td>nê</td>
</tr>
<tr>
<td><strong>MED. P/C</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MED. I/B</strong></td>
<td>ẽòɗe</td>
<td>ẽòi</td>
<td>ẽòi</td>
<td>yêŋneŋ</td>
<td></td>
<td></td>
<td>nê t’aeš</td>
</tr>
<tr>
<td><strong>DIST. S/A</strong></td>
<td>ẽòg</td>
<td>ẽòi</td>
<td>ẽòi</td>
<td>wôti</td>
<td>wât’i</td>
<td>wáde</td>
<td>dô</td>
</tr>
<tr>
<td><strong>DIST. P/C</strong></td>
<td>ẽòg</td>
<td>ẽòi</td>
<td>ẽòi</td>
<td>wôŋe</td>
<td>wâŋe</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIST. I/B</strong></td>
<td>ẽòg</td>
<td>ẽòi</td>
<td>ẽòi</td>
<td>wôŋneŋ</td>
<td>wàp’i</td>
<td>wádi</td>
<td>dô</td>
</tr>
<tr>
<td><strong>INDF. DIST. S/A</strong></td>
<td></td>
<td>yîati</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>INDF. DIST. P/C</strong></td>
<td></td>
<td>yîanę</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>indf. dist. inv/B</strong></td>
<td></td>
<td>yîanęŋ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All of the Tanoan languages show at least a three-way contrast in deictic distance whereas Kiowa only contrasts two distances. Towa has two sets of proximal

\(^{20}\) Not so incidentally, the indefinite determiner wí is very similar to the numeral one wî while the definite determiners ñí and ñíŋ are identical to the relativizer/nominalizer/modifier enclitics =ï’ and =ïŋ.
demonstratives, but their respective distributions are unknown. Southern Tiwa also shows variation in its proximals, but this may represent variation between an older archaic form (with /n/) and a newer form (with /y/). Taos Tiwa has an added set of deictics that seem to express indefinite distance. Picuris Tiwa has reinterpreted number constructions in its demonstratives: the inverse (B) form is used for inverse singular while the plural (C) form is extended to include both inverse and inanimate plurals.

Finally, the last set of pronominal forms that should be mentioned is Kiowa’s possessive pronouns, which prefix to the noun expressing the referent possessed. There are two sets, one used only with kinship terms and one used with all other nouns. These are shown in Table 11-44.

Table 11-44: Kiowa Nominal Possessive Proclitics

<table>
<thead>
<tr>
<th></th>
<th>Kinship Terms</th>
<th>Other Nouns</th>
</tr>
</thead>
<tbody>
<tr>
<td>1POSS</td>
<td>nɔ́ˑ-ñ</td>
<td>nɔ́ˑ-ñ</td>
</tr>
<tr>
<td>2POSS</td>
<td>á-</td>
<td>ируем-</td>
</tr>
<tr>
<td>3POSS</td>
<td>á- -de</td>
<td>DEM.-</td>
</tr>
</tbody>
</table>

It can be seen that the general, non-kinship possessive pronouns are the same as the independent pronouns described above. A demonstrative is even used for a third person possessor. What sets these possessive forms apart is that they affix to the possessed noun, causing all tones on the noun to become low. In the kinship series, the first person pronoun has the same form as the non-kinship first person, clearly derived from the independent pronoun and causing tone lowering. The second and third person pronouns, however, are distinctive. The second person does not cause the tones on the following stem to lower. The third person prefixes a morpheme identical to the second person to the possessed noun, but does cause tone lowering. A suffixal element -de (identical to the
nominalizer and basic number relativizer) is also attached. The forms in (75) present
possessed items from both possessive series.

(75) Kiowa (Watkins 1984: 103, 106)

\[
\begin{align*}
\text{n̄ok'i} & \quad \text{my husband} & \text{n̄oce} & \quad \text{my horse} \\
\text{ák'i} & \quad \text{your husband} & \text{n̄amce} & \quad \text{your horse} \\
\text{ák'i de} & \quad \text{her husband} & \text{n̄oydec} & \quad \text{his/her horse}
\end{align*}
\]

While no major discussion will surround these possessive pronouns, they will be
mentioned in chapter 0 below.
12 Breaking the Pieces Down: Previous Analyses

With an understanding of the vast synchronic arrays of pronominal morphemes across the seven Kiowa-Tanoan languages, we can begin considering their internal and comparative analysis. While the following chapters provide the most thorough work ever to be published on the topic, it is hardly the first to broach the question of the composition of these large paradigms of forms. Even though the proclitics should be viewed synchronically as portmanteau morphemes, the reader may have already observed patterns among the proclitics that suggest some kind of historical compositionality. Different researchers in the 20th century have thus attempted to break down the pronominal proclitics into meaningful units within individual languages to varying degrees of success.

I have not found most of these attempts to be all that useful towards my own analysis. Most of them have failed to take into account sound changes and analogical shifts to help them work through the numerous places where regular patterns break down. Moreover, almost none have taken a comparative perspective considering all of the languages of the family. It is clear from the complexity and forms of the pronominal proclitics that a similar system must be reconstructed to Proto-Kiowa-Tanoan. Thus, any regularity of composition that underlies the paradigms should predate the break-up of the proto-language, meaning the regularity has had a long time to become obfuscated within any given Kiowa-Tanoan language.

This criticism notwithstanding, these previous breakdowns are not without merit and do serve to make some of the remaining regularities stand out. Also, while most did not undertake a historical approach, one—Watkins’ (1984) analysis of Kiowa—is
effectively an internal reconstruction of the pronominal forms which must be considered carefully in the present comparative-historical analysis. I will therefore aim to concisely present many of the details of her compositional breakdown of Kiowa, but will treat the other, less thorough studies more summarily.

**12.1 Trager’s Breakdown of the Taos Tiwa Pronominal Proclitics**

Harrington (1916b) had early noted the correlation in Taos Northern Tiwa between a pronominal-final /m/ and animate plural (i.e. inverse (B)) and between /w/ and inanimate plural (i.e. plural (C)), but did not undertake further regular breakdown of the pronominal proclitics. That trend was initiated within Kiowa-Tanoan studies by George Trager, starting with his 1954 reanalysis of the Taos Tiwa pronominal proclitics. Trager was following the American Structuralism framework of the mid-20th century (made popular by Bloomfield’s 1933 analysis of Algonquian) and passed the tradition on to his own students in their studies of the other Tiwa languages.

Trager’s (1954) structuralist technique—and the same followed by his students—involved a simple agglutinative parsing of the Tiwa pronominal proclitics, positing null morphemes when motivated by a significant absence. The Taos Tiwa data do also compel him to propose one infix, but otherwise there is no complexity to his parsing. Thus, he does not propose any sound changes, elision, or epenthesis, although he is forced to posit morphologically determined allomorphy in order to achieve some degree of generalization for certain morphemes. Trager only attempts to deal with the intransitive-dative, the transitive, and the reflexive series in Taos Tiwa, leaving aside the intransitive and the transitive-dative. His parsing of the intransitive-dative is given in Table 12-1. I
have updated the transcription and notations to match the conventions of this dissertation, but the parsing is presented as in Trager (1954).

Table 12-1: Trager’s Taos Tiwa Pronominal Constituency, Intransitive-Dative

<table>
<thead>
<tr>
<th>D ↓ / S →</th>
<th>S/A</th>
<th>I/B</th>
<th>P/C</th>
<th>“L” (N,Ø)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>ʔ-ʔn-Ø</td>
<td>ʔ-ʔn-ʔm</td>
<td>ʔ-ʔn-ʔw</td>
<td>ʔ-ʔn-ʔn</td>
</tr>
<tr>
<td>2S</td>
<td>k-ʔ-Ø</td>
<td>k-ʔ-ʔm</td>
<td>k-ʔ-ʔw</td>
<td>k-ʔ-ʔn</td>
</tr>
<tr>
<td>3S</td>
<td>ʔ-ʔ-ʔØ</td>
<td>ʔ-ʔ-ʔm</td>
<td>ʔ-ʔ-ʔw</td>
<td>ʔ-ʔ-ʔn</td>
</tr>
<tr>
<td>1D</td>
<td>k-ʔn-Ø</td>
<td>k-ʔn-ʔm</td>
<td>k-ʔn-ʔw</td>
<td>k-ʔn-ʔn</td>
</tr>
<tr>
<td>2D</td>
<td>m-ʔn-Ø</td>
<td>m-ʔn-ʔm</td>
<td>m-ʔn-ʔw</td>
<td>m-ʔn-ʔn</td>
</tr>
<tr>
<td>3D</td>
<td>ʔ-ʔn-Ø</td>
<td>ʔ-ʔn-ʔm</td>
<td>ʔ-ʔn-ʔw</td>
<td>ʔ-ʔn-ʔn</td>
</tr>
<tr>
<td>1P</td>
<td>k-ʔ-Ø</td>
<td>k-ʔ-ʔm</td>
<td>k-ʔ-ʔw</td>
<td>k-ʔ-ʔn</td>
</tr>
<tr>
<td>2P</td>
<td>m-ʔ-Ø</td>
<td>m-ʔ-ʔm</td>
<td>m-ʔ-ʔw</td>
<td>m-ʔ-ʔn</td>
</tr>
<tr>
<td>3P</td>
<td>ʔ-ʔ-ʔØ</td>
<td>ʔ-ʔ-ʔm</td>
<td>ʔ-ʔ-ʔw</td>
<td>ʔ-ʔ-ʔn</td>
</tr>
</tbody>
</table>

At least some pervasive patterns do appear in the above. Table 12-2 and Table 12-3 present his analysis of the Transitive paradigm (including the reflexive paradigm, which he interprets as part of the transitive). Table 12-2 gives the forms where the O argument is a speech act participant, which Trager had to treat a little differently. Note also that Trager did not understand the obligatory passive/inverse voice construction as such in Tiwa. Thus, he includes forms for a third person A argument acting on a first and second person O argument, not recognizing that these were in fact intransitive pronominals.

Table 12-2: Trager's Taos Tiwa Pronominal Constituency, Transitive SAP O Arguments

<table>
<thead>
<tr>
<th>A ↓ / O →</th>
<th>1S</th>
<th>1D</th>
<th>1P</th>
<th>2S</th>
<th>2D</th>
<th>2P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ʔ-ʔ-ʔØ</td>
<td>ʔ-ʔ-ʔØ</td>
<td>ʔ-ʔ-ʔØ</td>
<td>ʔ-ʔ-ʔØ</td>
<td>ʔ-ʔ-ʔØ</td>
<td>ʔ-ʔ-ʔØ</td>
</tr>
<tr>
<td>2</td>
<td>m-ʔ-ʔØ</td>
<td>m-ʔ-ʔØ</td>
<td>m-ʔ-ʔØ</td>
<td>m-ʔ-ʔØ</td>
<td>m-ʔ-ʔØ</td>
<td>m-ʔ-ʔØ</td>
</tr>
<tr>
<td>3</td>
<td>ʔ-ʔ-ʔØ</td>
<td>ʔ-ʔ-ʔØ</td>
<td>ʔ-ʔ-ʔØ</td>
<td>ʔ-ʔ-ʔØ</td>
<td>ʔ-ʔ-ʔØ</td>
<td>ʔ-ʔ-ʔØ</td>
</tr>
</tbody>
</table>

Table 12-3 gives the parsing for pronominals encoding third person O arguments and the reflexive. It is structured much as Table 12-1 above.
Table 12-3: Trager's Taos Tiwa Pronominal Constituency, Transitive 3rd Person O Arguments

<table>
<thead>
<tr>
<th>A ↓ / O →</th>
<th>S/A</th>
<th>t/B</th>
<th>P/C</th>
<th>“L” (N2-)</th>
<th>RFL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>ti-Ø-Ø</td>
<td>ˀ-Ø-pi</td>
<td>ˀ-Ø-Ø</td>
<td>ti-Ø-ŋŋ</td>
<td>t-ŋ-Ø</td>
</tr>
<tr>
<td>2S</td>
<td>ˀ-ŋ-Ø</td>
<td>ˀ-ŋ-i</td>
<td>k-Ø-u</td>
<td>ˀ-ŋ-ŋŋ</td>
<td>ˀ-ŋ-Ø</td>
</tr>
<tr>
<td>3S</td>
<td>ˀ-ŋ-Ø</td>
<td>ˀ-ŋ-i</td>
<td>ˀ-ŋ-u</td>
<td>ˀ-ŋ-ŋŋ</td>
<td>ˀ-ŋ-ŋŋ</td>
</tr>
<tr>
<td>1D</td>
<td>ˀ-ŋn-Ø</td>
<td>ˀ-ŋ&lt;pe&gt;n</td>
<td>k-ŋn-Ø</td>
<td>ˀ-ŋn-ŋŋ</td>
<td>k-ŋn-Ø</td>
</tr>
<tr>
<td>2D</td>
<td>m-ŋn-Ø</td>
<td>m-ŋ&lt;pe&gt;n</td>
<td>m-ŋn-Ø</td>
<td>m-ŋn-ŋŋ</td>
<td>m-ŋn-Ø</td>
</tr>
<tr>
<td>3D</td>
<td>ˀ-ŋn-Ø</td>
<td>ˀ-ŋ&lt;pe&gt;n</td>
<td>ˀ-ŋn-Ø</td>
<td>ˀ-ŋn-ŋŋ</td>
<td>ˀ-ŋn-Ø</td>
</tr>
<tr>
<td>1P</td>
<td>ˀ-i-Ø</td>
<td>ˀ-i-pi</td>
<td>k-i-w</td>
<td>ˀ-i-ŋŋ</td>
<td>k-i-mŋ</td>
</tr>
<tr>
<td>2P</td>
<td>m-ŋ-Ø</td>
<td>m-ŋ-pi</td>
<td>m-ŋ-w</td>
<td>m-ŋ-ŋŋ</td>
<td>m-ŋ-mŋ</td>
</tr>
<tr>
<td>3P</td>
<td>ˀ-i-Ø</td>
<td>ˀ-i-pi</td>
<td>ˀ-i-w</td>
<td>ˀ-i-ŋŋ</td>
<td>ˀ-i-mŋ</td>
</tr>
</tbody>
</table>

Trager analyzes the proclitics as consisting of three primary compositional slots.

The leftmost (initial), always a consonant, indexes person (first, second, or third); the second indexes number (singular, dual, or plural); the third indexes noun class/number (of the O argument in the transitive and of the S argument in the intransitive-dative). Note that when the transitive O argument is a speech act participant, he has to posit two person morphemes. Since there is no wholly consistent form-function mapping for any of the relevant categories in any of the slots, Trager describes the variation of the slot-fillers in terms of co-occurrence with fillers of other slots, effectively positing morphologically determined allomorphy. His account is as follows:

- First person occurs as t- when accompanied by singular number and the reflexive, as ti- with singular and A class or L class, as k- with dual or plural number, but in the transitive only when also accompanied by C class marking, and as ˀ- elsewhere, but it is deleted before a consonant.
- Second person occurs as ˀ- in the transitive when accompanied by singular number and either A, B, nŋ-, or reflexive class marking, as k- with singular and C
class marking and always with singular in the intransitive-dative, and as \textit{m-} elsewhere.

- Third person occurs as \textit{ʔ-} everywhere.

- Singular number occurs as \textit{ʔ-} in the transitive following 1\textsuperscript{st} person before C class, when followed by the reflexive class when there is a 1\textsuperscript{st} person object, and following 2\textsuperscript{nd} person when accompanied by A class. It appears as \textit{γn(γ)-} in the intransitive-dative with 1\textsuperscript{st} person, as \textit{ʔ-} after 2\textsuperscript{nd} or 3\textsuperscript{rd} person in the intransitive-dative and after 1\textsuperscript{st} or 2\textsuperscript{nd} person with reflexive and in the 1>2sg form. Singular is \textit{₀-} elsewhere.

- Dual number occurs as \textit{ʔ…n(ʔ)-} in the transitive when accompanied by B class but is broken by the class infix \textit{<-pę->}, and as \textit{γn(γ)-} elsewhere.

- Plural number appears as \textit{ʔ-} after 2\textsuperscript{nd} person and as \textit{-i-} everywhere else.

- A class is always \textit{₀}.

- B class occurs as an infix \textit{<-pę->} when accompanied by dual number in the transitive, as \textit{-i} following 2\textsuperscript{nd} or 3\textsuperscript{rd} person with singular number in the transitive, as \textit{⁻pi} everywhere else in the transitive, and as \textit{⁻m} everywhere in the intransitive-dative.

- C class appears in the transitive as \textit{-u} after 2\textsuperscript{nd} or 3\textsuperscript{rd} person with singular number and as \textit{₀} after 1\textsuperscript{st} person with singular number and always with dual. It occurs as \textit{-w} elsewhere in the transitive and throughout the intransitive-dative.

- \textit{Nγ-} class (what Trager calls L-class) always occurs as \textit{nγ-}.
• Reflexive class appears as -Ø following 1st or 2nd person with the singular and always when accompanied by dual number. Everywhere else (in the transitive paradigm) it is -mọ.

There are certainly some patterns here, but the reader can note that there is often divergent behavior in categories between the transitive and intransitive-dative paradigms and very odd alternations within a single paradigm. It must be questioned, for instance, whether person and number should be kept entirely separate. It can also be noted that Trager’s account generalizes over these paradigms, but makes no predictions that could help in the analysis of the other paradigms. Finally, Trager has no account for the -ay part of the 2>1 form may.

12.2 Zaharlick’s Breakdown of Picuris Tiwa Pronominal Proclitic

Amy Zaharlick (1975) performs a comparable breakdown of Picuris Northern Tiwa, also limiting herself to the intransitive-dative and transitive (with reflexive) paradigms, but leaving aside the forms with a speech act participant O argument. Table 12-4 and Table 12-5 give her parsing of the respective paradigms in Picuris.

Table 12-4: Zaharlick's Picuris Tiwa Pronominal Constituency, Intransitive-Dative

<table>
<thead>
<tr>
<th>D ↓ / S →</th>
<th>S/A</th>
<th>I/B</th>
<th>P/C</th>
<th>“L” (NA+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>ʔ-ʔa-Ø</td>
<td>ʔ-ʔa-m</td>
<td>ʔ-ʔo-Ø</td>
<td>ʔ-ʔa-غا</td>
</tr>
<tr>
<td>2S</td>
<td>k-a-Ø</td>
<td>k-a-m</td>
<td>k-o-Ø</td>
<td>k-a-غا</td>
</tr>
<tr>
<td>3S</td>
<td>ʔ-ʔa-Ø</td>
<td>ʔ-ʔa-m</td>
<td>ʔ-ʔo-Ø</td>
<td>ʔ-ʔa-غا</td>
</tr>
<tr>
<td>1D</td>
<td>k-ʔa-ن</td>
<td>k-ʔa-m</td>
<td>k-ʔo-Ø</td>
<td>k-ʔa-غا</td>
</tr>
<tr>
<td>2D</td>
<td>m-ʔa-ن</td>
<td>m-ʔa-m</td>
<td>m-ʔo-Ø</td>
<td>m-ʔa-غا</td>
</tr>
<tr>
<td>3D</td>
<td>ʔ-ʔa-ن</td>
<td>ʔ-ʔa-m</td>
<td>ʔ-ʔo-Ø</td>
<td>ʔ-ʔa-غا</td>
</tr>
<tr>
<td>1P</td>
<td>k-i-Ø</td>
<td>k-i-m</td>
<td>k-u-Ø</td>
<td>k-i-غا</td>
</tr>
<tr>
<td>2P</td>
<td>m-ج-ن</td>
<td>m-ج-m</td>
<td>m-u-Ø</td>
<td>m-ج-نشأ</td>
</tr>
<tr>
<td>3P</td>
<td>ʔ-ج-ن</td>
<td>ʔ-ج-m</td>
<td>ʔ-ع-Ø</td>
<td>ʔ-ج-نشأ</td>
</tr>
</tbody>
</table>
Zaharlick introduces some revisions to Trager’s analysis of Tiwa, notwithstanding differences between Picuris and Taos Tiwa, but on the whole she follows the same type of breakdown. There are three slots, for person, number, and noun class, and the fillers of the slots frequently have their forms determined by the other fillers with which they co-occur. Because it is not particularly any more telling than Trager’s account of Taos Tiwa, I will not summarize Zaharlick’s analysis here.

Although it predates Zaharlick’s breakdown, Harben Trager (1968) makes some suggestive comments on Picuris Tiwa by analogy with Trager’s analysis of Taos Tiwa. She observes that the 1S>3P(C) transitive proclitic is ta- (where Taos Tiwa has ɔ-), suggesting that it may be an analogic change in keeping with the other first person singular forms, e.g. ti- 1S>3S(A), ta- 1S.RFL, tanq- 1S>NA. She also notes that the vowel in second person plural forms appear to be changing to /i/ (cf. Taos Tiwa /ɔ̨/), which may be a development by analogy with the first and third person plural forms which already contained a vowel /i/. She does not, however, go any further than this in her analysis.
12.3 Leap’s Breakdown of Southern Tiwa Pronominal Proclitics

Leap (1970b) also undertakes a Trager-like analysis, this time for Isleta Southern Tiwa. Like the above authors, he too breaks the proclitics down into three slots and limits himself to the intransitive-dative, transitive, and reflexive\(^1\) paradigms. He omits the na- proclitics, however. Table 12-6 and Table 12-7 present his breakdowns of the intransitive-dative and transitive with reflexive respectively.

Table 12-6: Leap's Southern Tiwa Pronominal Constituency, Intransitive-Dative

<table>
<thead>
<tr>
<th>D ↓ / S →</th>
<th>S/A</th>
<th>I/B</th>
<th>P/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>ˀ-i-n</td>
<td>ˀ-i-m</td>
<td>ˀ-i-w</td>
</tr>
<tr>
<td>2S</td>
<td>k-a-Ø</td>
<td>k-a-m</td>
<td>k-a-w</td>
</tr>
<tr>
<td>3S</td>
<td>ˀ-a-Ø</td>
<td>ˀ-a-m</td>
<td>ˀ-a-w</td>
</tr>
<tr>
<td>1D</td>
<td>k-i-m</td>
<td>k-i-mim</td>
<td>k-i-w</td>
</tr>
<tr>
<td>2D</td>
<td>m-i-Ø</td>
<td>Ø-Ø-mim</td>
<td>m-i-w</td>
</tr>
<tr>
<td>3D</td>
<td>ˀ-i-min</td>
<td>ˀ-i-mim</td>
<td>ˀ-i-w</td>
</tr>
<tr>
<td>1P</td>
<td>k-i-Ø</td>
<td>k-i-m</td>
<td>k-i-w</td>
</tr>
<tr>
<td>2P</td>
<td>m-ʒ-n</td>
<td>m-ʒ-m</td>
<td>m-ʒ-w</td>
</tr>
<tr>
<td>3P</td>
<td>ˀ-i-n</td>
<td>ˀ-i-m</td>
<td>ˀ-i-w</td>
</tr>
</tbody>
</table>

Table 12-7: Leap's Southern Tiwa Pronominal Constituency, Transitive

<table>
<thead>
<tr>
<th>A ↓ / O →</th>
<th>S/A</th>
<th>I/B</th>
<th>P/C</th>
<th>RFL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>t-i-Ø</td>
<td>Ø-Ø-bi</td>
<td>t-e-Ø</td>
<td>t-e-Ø</td>
</tr>
<tr>
<td>2S</td>
<td>ˀ-a-Ø</td>
<td>ˀ-i-Ø</td>
<td>k-u-Ø</td>
<td>ˀ-a-Ø</td>
</tr>
<tr>
<td>3S</td>
<td>Ø-Ø-Ø</td>
<td>ˀ-i-Ø</td>
<td>ˀ-u-Ø</td>
<td>Ø-Ø-be</td>
</tr>
<tr>
<td>1D</td>
<td>ˀ-i-n</td>
<td>ˀ-i-mim</td>
<td>k-i-n</td>
<td>k-i-n</td>
</tr>
<tr>
<td>2D</td>
<td>m-e-n</td>
<td>m-i-mim</td>
<td>m-i-n</td>
<td>m-e-n</td>
</tr>
<tr>
<td>3D</td>
<td>ˀ-i-n</td>
<td>ˀ-i-mim</td>
<td>ˀ-i-n</td>
<td>ˀ-i-be</td>
</tr>
<tr>
<td>1P</td>
<td>ˀ-i-Ø</td>
<td>ˀ-i-bi</td>
<td>k-i-w</td>
<td>k-i-be</td>
</tr>
<tr>
<td>2P</td>
<td>m-ʒ-Ø</td>
<td>b-i-bi</td>
<td>m-ʒ-w</td>
<td>b-e-be</td>
</tr>
<tr>
<td>3P</td>
<td>ˀ-i-Ø</td>
<td>ˀ-i-bi</td>
<td>ˀ-i-w</td>
<td>ˀ-i-be</td>
</tr>
</tbody>
</table>

\(^1\) He erroneously interprets the reflexive paradigm to be the intransitive. This appears to be because the monovalent verb for which he provides (and presumably elicited) a paradigm, *hunt*, happened to be a reflexive verb. Since the first and second person singular pronomininals are identical between the Southern Tiwa intransitive and reflexive series, he probably just did not elicit enough paradigmatic forms to work out the different series.
Leap’s analysis is effectively the same as Zaharlick’s for Picuris Tiwa (if less elaborated in prose in his 1970 dissertation). I will not summarize the distribution of his allomorphic alternations here. The reader can work through them him- or herself based on the analysis of Taos Tiwa by Trager above, if interested.

12.4 Yegerlehner’s Breakdown of Arizona Tewa Pronominal Proclitics

Shortly after Trager published his analysis of the pronominals in Taos Tiwa, John Yegerlehner undertook a comparable breakdown of the pronominal proclitics in Arizona Tewa (Yegerlehner 1957, 1959b). He tries to accommodate all of the proclitics in the language under his analysis (although he misses a few in his 1959 article) and introduces a fourth morphological slot. The first two slots are still reserved for person and number respectively. There is usually at least a third slot which encodes either some meaning by which one interprets the person and number increments (i.e. as indirect object, as “recipient” aka intransitive, as possessor aka intransitive-dative) or encodes the person and/or number of another argument. These types of increments may accumulate to have as many as four slots under Yegerlehner’s analysis. He also adds tone into the mix as a meaningful unit, absent from the accounts of Tiwa. However, as with the Tiwa languages, a given meaning is realized inconsistently in form under Yegerlehner’s breakdown, but even interpreting forms liberally, he is compelled to posit portmanteau pronominals and increments within the pronominals.

Table 12-8 shows his analysis of the intransitive, intransitive-dative, and reflexive series. In all cases the leftmost slot indicates person, the second slot indicates number, and the third slot indicates essentially the semantic role of that person-number
combination. Where there appear to be only two increments within a given proclitics, Yegerlehner claims two of the meanings to be accumulated into a single form (it is always the larger increment which is claimed to have the accumulation).

Table 12-8: Yegerlehner's Arizona Tewa Pronominal Constituency, Paradigms 1

<table>
<thead>
<tr>
<th></th>
<th>ITR</th>
<th>ITR-DAT</th>
<th>RFL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>ˀo-</td>
<td>d-i-ˊŋ</td>
<td>d-i-ˊi</td>
</tr>
<tr>
<td>2S</td>
<td>ˊų-Ö-</td>
<td>ˊų-Ö-ˊH</td>
<td>b-i-ˊ</td>
</tr>
<tr>
<td>3S</td>
<td>nq-</td>
<td>ˋ甯</td>
<td>ˋ-i-ˊ</td>
</tr>
<tr>
<td>1D</td>
<td>g-ɑ-</td>
<td>g-ę-ˋH</td>
<td>ˋ-a-ŋ</td>
</tr>
<tr>
<td>2D</td>
<td>d-ɑ-</td>
<td>d-ę-ˋH</td>
<td>d-ę-ŋ</td>
</tr>
<tr>
<td>3D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1P</td>
<td>ˀg-i-</td>
<td>ˀg-i-ˊH</td>
<td>ˋ-i-ˊbí</td>
</tr>
<tr>
<td>2P</td>
<td>ˊ-i-ˊ</td>
<td>ˊ-oˊH</td>
<td>ˋ-oˊbí</td>
</tr>
<tr>
<td>3P</td>
<td>d-i-ˊ</td>
<td>d-óˊ</td>
<td>d-i-ˊbí</td>
</tr>
</tbody>
</table>

Table 12-9 and Table 12-10 present the transitive and transitive-dative pronominals under Yegerlehner’s parsing. In Table 12-9 the leftmost slot indexes person of the O or D argument, the second slot encodes the person of the A argument, the third slot indicates the number of the O or D argument and, in the transitive-dative, the fourth slot encodes the dative reading. The exception is the \(X>1\) pronominals where the first slot indexes person of the A argument and the second slots indexes the person of the non-A argument with no number marking.

Table 12-9: Yegerlehner's Arizona Tewa Pronominal Constituency, Paradigms 2

<table>
<thead>
<tr>
<th></th>
<th>TR</th>
<th>TR-DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>d-i</td>
<td>d-i-ˊŋ</td>
<td></td>
</tr>
<tr>
<td>w-i-Ø</td>
<td>w-i-Ø-ˊŋ</td>
<td></td>
</tr>
<tr>
<td>w-ó-Ø</td>
<td>w-ó-Ø-ˊŋ</td>
<td></td>
</tr>
<tr>
<td>w-ó-béˊ</td>
<td>w-ó-béˋ-Ø</td>
<td></td>
</tr>
<tr>
<td>w-ó-béˊ</td>
<td>w-ó-bémissible-Ø</td>
<td></td>
</tr>
<tr>
<td>ˋ-ó-Ø</td>
<td>ˋ-ó-Ø-ˊŋ</td>
<td></td>
</tr>
<tr>
<td>ˋ-o-béˊ</td>
<td>ˋ-o-béˊ-Ø</td>
<td></td>
</tr>
<tr>
<td>ˋ-o-béˊ</td>
<td>ˋ-o-béˊ-Ø</td>
<td></td>
</tr>
</tbody>
</table>
Note that wherever a pronominal form is ambiguous in person (indicated with an X), the appropriate increment that encodes that argument is ambiguous in the same way. The pronominals in Table 12-10 differ from the above in that the leftmost increment indexes the person of the A argument, the second indexes the number of the A argument as well as the person of the O or D argument, the third marks the number of the O or D argument, and in the transitive-dative the fourth marks the dative reading. Those transitive pronominals with a third person O argument of unspecified number lack the increment specifying the number of the O argument. In these cases where three increments occur, the second marks number of the A argument and the third marks the person of the O argument. Note that the $2S>3$ and $3S>3$ pronominals are considered fully portmanteau.

Table 12-10: Yegerlehner's Arizona Tewa Pronominal Constituency, Paradigms 3

<table>
<thead>
<tr>
<th></th>
<th>TR</th>
<th>TR-DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1S&gt;3S$</td>
<td>d-ó-Ø</td>
<td>d-ó-Ø-ǐ</td>
</tr>
<tr>
<td>$1S&gt;3D$</td>
<td>d-ò-bé ŋ́</td>
<td>d-ò-bé ŋ́-Ø</td>
</tr>
<tr>
<td>$1S&gt;3P$</td>
<td>d-ò-bé ŋ́</td>
<td>d-ò-bé ŋ́-Ø</td>
</tr>
<tr>
<td>$2S&gt;3S$</td>
<td>ná-Ø</td>
<td>má-Ø-ǐ</td>
</tr>
<tr>
<td>$2S&gt;3D$</td>
<td>mù-bé ŋ́</td>
<td>mù-bé ŋ́-Ø</td>
</tr>
<tr>
<td>$2S&gt;3P$</td>
<td>mù-bé ŋ́</td>
<td>mù-bé ŋ́-Ø</td>
</tr>
<tr>
<td>$1S&gt;3$</td>
<td>d-ó</td>
<td></td>
</tr>
<tr>
<td>$2S&gt;3$</td>
<td>ná·</td>
<td></td>
</tr>
<tr>
<td>$3S&gt;3$</td>
<td>má́j</td>
<td></td>
</tr>
<tr>
<td>$1D&gt;3$</td>
<td>ŋ'-a-ǐ́</td>
<td></td>
</tr>
<tr>
<td>$2/3D&gt;3$</td>
<td>d-če-ǐ́</td>
<td></td>
</tr>
<tr>
<td>$1P&gt;3$</td>
<td>ŋ'-i-́i</td>
<td></td>
</tr>
<tr>
<td>$2P&gt;3$</td>
<td>ŋ'-o-́bi ŋ́</td>
<td></td>
</tr>
<tr>
<td>$3P&gt;3$</td>
<td>d-i-́i</td>
<td></td>
</tr>
</tbody>
</table>

No forms are given for the blacked out section. Those with a singular A argument (which are used for inanimate O arguments) have no equivalents in the transitive-dative paradigm. Those with non-singular A arguments have identical forms in the transitive
and transitive-dative paradigms. Yegerlehner simply doesn’t provide an analysis that accounts for their transitive-dative usage\(^2\).

While there are certainly patterns to be found here, e.g. the association of \(-\text{béj}\) with dual, \(-\text{bé}\) with plural, \(-\text{j}\) with dative, Yegerlehner’s analysis is ultimately no more informative than Trager’s and others’ for the Tiwa languages. The parsings do not predict potential forms that may not be attested and there is no explanation for why a function is realized in different forms.

### 12.5 Watkins’ Breakdown of Kiowa Pronominal Proclitics

Roughly contemporary with Trager’s (1954) breakdown of Taos Tiwa and Yegerlehner’s (1957, 1959b) treatment of Arizona Tewa, Merrifield (1959a) initiated a tradition of analyzing Kiowa pronominal proclitics along independent lines. Instead of the general American Structuralist approach of the other authors, Merrifield undertook a Tagmemic analysis then becoming popular among linguists of the Summer Institute of Linguistics\(^3\). Under this framework not only did Merrifield parse apart the pronominal morphemes into meaningful increments, he was also not limited to an agglutinative division with arbitrary alternations. Instead he considered phonological motivations and could claim underlying increments within a morpheme that are not formally realized only because they are “trumped” by an adjacent increment. While some of this may sound ad hoc—and indeed may be—it was a new tactic and did succeed in coming up with a much more regularly patterned composition within the Kiowa paradigms.

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\(^2\) I would guess he would add a final slot form -Ø which indicates “Dative” (or “indirect goal” as he calls it).

\(^3\) Tagmemics was created by Kenneth Pike, the founder of SIL, in Pike (1954-1960).
Although subsequent authors may not have followed the Tagmemic framework per se, Merrifield’s analysis was essentially maintained and has had continued influence in Kiowa studies\(^4\). Crowell Trager-Johnson (1972), Takahashi (1984), Watkins (1984), and Harbour (2003, 2008) all include something of an internal analysis of pronominal proclitics in Kiowa, but it is only the details and the terminology that essentially change from Merrifield’s breakthrough. Therefore, I will summarize the analysis of Kiowa proclitics primarily on the basis of Watkins (1984) since it extends on Merrifield’s work most neatly and thoroughly. Crowell Trager-Johnson’s semological analysis is only a little removed from Merrifield’s, so need not be independently treated. Takahashi’s feature-based approach is the most divergent of the sources mentioned, and his categories are so obscure in comparison to other treatments that his work has had little influence on the field and it would take too much space here to summarize. Suffice it to say that the core formal analysis that Takahashi takes is effectively in the same vein as the others. Harbour only builds on Watkins’ analysis and does not substantively modify her proposal except to adapt it to his theoretical framework.

Under Watkins’ generative approach, the pronominal proclitics are viewed as consisting of four morphological slots. The first is always filled by a consonant that indexes person (of an S, A, D, or animate O). The second is always filled by a vowel, which indexes the number of that person. The third is also a vowel, which indexes the number of a (third person) object. The fourth slot is filled by a consonant and also indexes the number of the object. Not all slots need to be filled, unlike in the approach for

\(^4\) It probably helps that Merrifield’s analysis did not integrate some of the more obscure aspects of Tagmemics and was easily interpretable within the generative and feature-based frameworks of phonological and morphological analysis that became popular among American linguists in the decades following his article.
the Tiwa languages. There are also two types of suprasegmental morphological increments: nasalization, analyzed as a distinct morpheme of slot 2 and part of a morpheme of slot 3, and tone, which could be considered a fifth “slot” indicating the grammatical role of the initial person increment. Even though Watkins’ analysis is not truly historical or fully an internal reconstruction, it is close enough. Thus, a morphological slot is only filled if a morpheme is motivated by the meaning of the pronominal. Also, with the slots actually filled by forms that are thence juxtaposed, rules of phonology will apply, so much of the allomorphy does actually have phonological motivation. There is still some morphologically determined allomorphy, but it does not lead to such wildly distinct forms as in the above analyses of Tiwa and Tewa and is within the realm of acceptability for most modern linguists.

It should also be noted here that Watkins organizes her pronominal paradigms differently than my presentation in chapter 11.2. Historical developments in Kiowa have led to mergers between the dative paradigms and that part of the transitive paradigm that indexes speech act participants as O arguments. From this she has four paradigms:

- **intransitive**, which is the same as I gave in 11.2.1;
- **agent:object**, which is that part of the transitive paradigm with a third person O argument (including the reflexive paradigm);
- **patient:object**, which encompasses the whole intransitive-dative paradigm, includes that part of the transitive paradigm with first or second person O arguments, and overlaps with part of the transitive-dative paradigm; and,
- **mixed:object**, which consists of the rest of the transitive-dative paradigm (with a non-singular second or third person D argument combined with a singular first or third person A argument). Because of the “overlapping” paradigms (i.e. polysemous use of a given pronominal form), Watkins’ **patient:object** and
mixed:object paradigms include “implied” A and D arguments respectively. For the mixed:object set, that simply means that the (ambiguously first or third singular) D argument is not overtly indexed in the pronominal form in Watkins’ compositional analysis. For the patient:object set, that means both that the A argument is not overtly indexed and that these pronominals have polysemous uses as intransitive-dative or transitive-dative (for those that index a third person S/O argument) or are used as transitive with (usually) a less than fully specified A argument (for those that index no third person S/O argument). Finally, with the merger of part of the transitive and the dative paradigms, Watkins calls SAP O arguments and D arguments “patients”. For summary of her compositional breakdown here, I will call these Dative or D arguments instead, in recognition of the specific historical shifts (see chapter 0) and to avoid unnecessary confusion of terminology.

Table 12-11 illustrates the forms that may fill the first slot of the proclitic, indexing person of an S/A or D argument. Second and third person dative arguments have different person forms for different numbers, but note that the two persons are homophonous in the non-singular.

Table 12-11: Watkins’ Kiowa Person Morphemes

<table>
<thead>
<tr>
<th></th>
<th>S/A</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>d</td>
<td>d</td>
</tr>
<tr>
<td>2s</td>
<td>b</td>
<td>g</td>
</tr>
<tr>
<td>2ns</td>
<td>b</td>
<td></td>
</tr>
<tr>
<td>3s</td>
<td>Ø</td>
<td>Ø</td>
</tr>
<tr>
<td>3ns</td>
<td>Ø</td>
<td>b</td>
</tr>
</tbody>
</table>

Under Watkins’ analysis the above person markers are always accompanied by a person number marker of the second slot, which is always a vowel. Table 12-12 gives these
number forms. Dual number is realized as nasalization of a vowel. It will thus appear on the vowel -e- (i.e. -ę-) when third person dual or any reflexive dual is being expressed, on
-iə- (i.e. -iə́-) otherwise with S/A arguments, and on -ə- (i.e. -ə́-) otherwise with D arguments. The notation (s)>x>s indicates that the -ia- vowel indexes a singular D argument only in those forms that have an “implied” singular A argument, i.e. the forms used with an unambiguously singular A argument under their transitive-dative usage.

Table 12-12: Watkins' Kiowa Person-Number Morphemes

<table>
<thead>
<tr>
<th></th>
<th>S/A</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>3D/1</td>
<td>e</td>
<td>e</td>
</tr>
<tr>
<td>REF.</td>
<td>ø</td>
<td></td>
</tr>
<tr>
<td>(S)&gt;X&gt;S</td>
<td>ia</td>
<td></td>
</tr>
<tr>
<td>ELSEWHERE</td>
<td>ia</td>
<td>ø</td>
</tr>
</tbody>
</table>

Watkins points out that the combinatory possibilities of the above two slots give the following (syllabic) increments. She does not claim that these units have any independent historical reality. Also, these forms are abstractions before the application of any phonological rule. Table 12-13 shows all the possibilities for indexing an S or A argument.

Table 12-13: Watkins' Kiowa A Argument Person-Number Combinations

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>d-ia</td>
<td>b-ia</td>
<td>Ø-Ø</td>
</tr>
<tr>
<td>D</td>
<td>INVERSE</td>
<td>b-ia</td>
<td>Ø-ε</td>
</tr>
<tr>
<td>P</td>
<td></td>
<td></td>
<td>Ø-ia</td>
</tr>
<tr>
<td>I</td>
<td></td>
<td></td>
<td>Ø-ε</td>
</tr>
</tbody>
</table>

5 This complicated environment is only to accommodate 1S>X>2S usage. Otherwise, pronominals that ambiguously index 3>X>2S OR 1NS>X>2S use the “elsewhere” D vowel -ə́- in Watkins’ analysis. The (S)>X>s vowel is also not used for a first or third person singular D argument with a second or third person non-singular A argument.
First person non-singular S and A forms are always identical with the third person inverse in Kiowa. Interestingly here it turns out that second person singular and plural are identical under Watkins’ analysis even though these two categories are never identical when explicitly indexed in the actual pronominal proclitics. Table 12-14 shows the combinatory possibilities of the D arguments.

Table 12-14: Watkins' Kiowa D Argument Person-Number Combinations

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>P</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>d-ia</td>
<td>d-ɔ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>g-ia / g-ɔ</td>
<td>b-ɔ́</td>
<td>b-ɔ́</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ø-ia</td>
<td>b-ɛ́</td>
<td></td>
<td>b-ɔ́</td>
</tr>
</tbody>
</table>

First person dual and plural are never distinct in Kiowa, even when different than the third person inverse. This is thus an exception to the use of the dual person number increment, realized as nasalization of the vowel\(^6\). Third person plural and inverse are non-distinct in D arguments, but the form used for this category is inverse under Watkins’ analysis. The two second person singular forms depend on the A argument: g-ia is used when the “implied” A argument is (first person) singular and g-ɔ́ is used the rest of the time. Note, though, that the g-ia sequence is also used with (1S)>X>3S in the actual pronominal proclitics, Ø-ia being used for (2S/3S)>X>3S.

Following the person slots come the two slots indexing the number of a third person O argument. Table 12-15 gives the forms that occur in these slots and their function. Note that the -e- vowel is only used to index the inverse in the transitive third person O forms while the -ɔ́- vowel indexes the inverse of the S or O that occurs with a dative argument.

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\(^6\) One would thus expect d-ɔ́ for first person dual if all was applied regularly.
Table 12-15: Watkins' Kiowa O Argument Number Morphemes

<table>
<thead>
<tr>
<th>Slot 3:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGULAR</td>
<td>Ø</td>
</tr>
<tr>
<td>DUAL</td>
<td>ę</td>
</tr>
<tr>
<td>PLURAL</td>
<td>ia</td>
</tr>
<tr>
<td>INVERSE X&gt;3I</td>
<td>e</td>
</tr>
<tr>
<td>INVERSE (X)&gt;3I&gt;X</td>
<td>ø</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Slot 4:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NON-SINGULAR</td>
<td>d</td>
</tr>
</tbody>
</table>

The increment of the fourth slot, -d, only occurs in pronominals that index non-singular (dual, plural, inverse) O arguments, and thus does Watkins gloss it. There are, however, several pronominals that index a non-singular O argument but do not contain the -d increment. It regularly does not occur with: inverse O arguments combined with a singular A argument, either indexed or implied; dual O arguments with a third person singular A argument; and, it never occurs with any O argument combined with a first person singular D argument. The one thing in common amongst all of these is that it does not like to occur in most cases when there is a singular A argument present.

In addition to the above four slots, there is a fifth “slot” filled only by tone. This tone then indexes whether the person increment is an S/A argument or a D argument. In short, a low tone occurs when the proclitic indexes an A argument and a high tone occurs when it indexes a D argument. But, it must be noted that not all tones that occur on the proclitics represent these purportedly meaningful units. For example, on some of the transitive third person O proclitics, the pronominal itself bears a high tone despite the absence of a D argument, but the low tone indexing the A argument occurs as tone lowering of the verb stem following the pronominal. There do seem to be quite a number
of exceptions to the distribution of the meaningful tone, although this is not to say that there isn’t something to the pattern that Watkins points out.

With the above increments in play, they must then be combined appropriately to derive the actually occurring pronominal proclitic forms. In order to reconcile the relatively simple set of compositional components she proposes with the actual phonological forms of the pronominal proclitics, Watkins appeals to a small number of phonological and morphophonological alterations. Some of these are semi-regular throughout the language, at least historically, while some are predominantly realized in the pronominal proclitics.

The alternation between alveolar stops and velar stops is quite active in the proclitics and explains instances of /g/ where /d/ is otherwise expected and vice versa. Coda devoicing is the reason the non-singular marker of slot four is always realized at [t] when it occurs at the end of the proclitics. One of the major processes that operates primarily within the pronominal proclitics is vowel elision or contraction (what Watkins calls “truncation”). This is how the adjacent vocalic person number and object number increments are resolved (since CVVC is not a permissible syllable shape in Kiowa). When two vowels are juxtaposed, the first vowel is regularly deleted. There is a morphophonological exception: when the first vowel is the 3D/I increment -e-, this vowel is retained and the second vowel is elided. When dual is involved on either the person number increment or the object number increment—in both cases involving a nasal vowel—the nasalization is retained even if the vowel bearing it is lost by elision. Object dual nasalization is lost, however, whenever the A or D argument is plural or inverse, a morphophonological exception. Retained nasaliation feeds into another process seen in
the pronominal proclitics: voiced stops are nasalized when in the same syllable as a nasal vowel. Finally, there being no phonemic diphthong /ia/ in the language, this proposed increment is realized in predictable ways: as /ya/ following a velar stop, as /a/ following a labial stop, and as /i/ when bearing falling tone.

There are a couple of other irregular processes that Watkins has to propose to account for actual pronominal forms. First, the slot four non-singular consonant often metathesizes with the preceding vowel when the person increment is third person Ø-, thus deriving a CV form rather than a VC form. Second, her mixed:object paradigm (a subset of the transitive-dative) has a quirky feature: a copy of the object number vowel is appended following the slot four non-singular marker and the final vowel in all forms (including those that lack the non-singular, i.e. singular forms) is long and bears falling tone. There are also a couple of other idiosyncratic changes. With all of the above architecture, Watkins is able to account for the majority of the pronominal proclitics. To save some space, I will refer the reader to Watkins (1984: 129-134) for the compositional breakdown of each individual proclitic. See also Merrifield (1959: 175).

12.6 Comparative Studies of Kiowa-Tanoan Pronominal Proclitics

For good or for ill, comparable treatments have never been published for Rio Grande Tewa or for Towa. It is perhaps for this reason that so little comparative work has been attempted on the pronominal proclitics across the languages. The exceptions are Harwell (1971) and two articles by Laurel Watkins (Watkins 1982, 1996). Both authors are limited by the availability of reliable information on the full paradigms on all languages and neither undertakes a comprehensive analysis of all pronominals to which
they did have access, so daunting a task as it is. They make at least a small headway towards the task, however.

Harwell’s thesis compares Kiowa, Taos Tiwa, and Tewa on several major grammatical constructions, including the pronominal proclitics. She follows Trager’s (1954) analysis for Taos Tiwa and Merrifield’s (1959a) for Kiowa and extrapolates herself pieces from Speirs’ (1966) presentation of the Rio Grande Tewa pronominal proclitics. From this she is able to determine a handful of similarities. In particular she finds similar, undoubtedly cognate forms indexing person and number of the subject (S or A argument) and something of the pieces that index non-A arguments in the more complex paradigms. Table 12-16 summarizes her findings.

Table 12-16: Harwell’s Kiowa, Taos, Tewa Pronominal Comparison

<table>
<thead>
<tr>
<th></th>
<th>Kiowa</th>
<th>Taos</th>
<th>Tewa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S S/A</td>
<td>d</td>
<td>t</td>
<td>d</td>
</tr>
<tr>
<td>1NS S/A</td>
<td>g</td>
<td>k</td>
<td>g</td>
</tr>
<tr>
<td>2S S/A</td>
<td>b, m</td>
<td>b, m</td>
<td></td>
</tr>
<tr>
<td>2NS S/A</td>
<td>g</td>
<td>k</td>
<td>g</td>
</tr>
<tr>
<td>2D S/A</td>
<td>m</td>
<td>m</td>
<td>b</td>
</tr>
<tr>
<td>2P S/A</td>
<td>b</td>
<td>m</td>
<td>b</td>
</tr>
<tr>
<td>3S AN S/A</td>
<td>Ø</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>3P AN S/A</td>
<td>?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RFL.</td>
<td>m</td>
<td>m</td>
<td>v</td>
</tr>
<tr>
<td>NS O/D</td>
<td>T</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>I</td>
<td>-gɔ de-</td>
<td>-nɔ/-nɛmɔ pi-</td>
<td>-n dɛ-</td>
</tr>
</tbody>
</table>

Her first and second person forms are certainly suggestive, as is her reflexive marker. Others, such as her third person and inverse increments either do not show formal cognacy (in the latter case), or do not quite get at the actual comparable element (in the former case). There is something to the non-singular O/D forms she gives, but as she
herself acknowledges, there is more to these coda consonants in the Tanoan languages that need to be explained.

Harwell does not attempt to reconstruct any of the pronominal proclitics and she does not point out much in the way of formal or functional patterns beyond what is represented in the above table. As indicated in chapter 3.9, though, she did not have a lot to work with.

Watkins (1982, 1996) covers similar ground, although she does not attempt to break down the Tewa, Tiwa, and Towa pronominals enough to compare them to her analysis of Kiowa as presented above. Her focus in both papers is more on the voice constructions that affect the distribution and usage of the pronominal proclitics, so it is mainly with respect to this that she compares a small set of the pronominal proclitics. Because of the interaction between voice and person, she is particularly concerned with the indexation of person within the proclitics. Her proposal regarding voice marking will be taken up in chapter 0. With regard to the pronominals, she notes that the sound correspondences do not match the regular correspondences seen among stem-initial consonants, pointing out in particular a correspondence series /d:d:t:t/ among Kiowa, Tewa, Tiwa, and Towa respectively. She proposes a rough reconstruction of person indexation based on such correspondences, suggesting *d first person, *g second person singular, *b second person non-singular, and *Ø third person. There is also correlation between nasality in the proclitic and dual number and between a final consonant for non-singular O or D arguments, /n/ (= [ŋ]) in Tewa, */d/ in Kiowa, and */l/ in Towa. She also mentions a correlation between vowel quality and grammatical number, but does not go into the particulars in these articles.
The following table illustrates the possible cognates among pronominals that she suggests to illustrate the similarities and differences in person marking. It is the initial consonant that is of interest in comparison of the pronominals. Forms in parentheses are internally reconstructed forms (Kiowa) or non-cognate correspondences (Rio Grande Tewa).

**Table 12-17: Watkins' Kiowa-Tanoan Pronominal Comparisons**

<table>
<thead>
<tr>
<th></th>
<th>Kiowa</th>
<th>RGT</th>
<th>Taos</th>
<th>Isleta</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1S RFL.</strong></td>
<td>de</td>
<td>dé</td>
<td>ṭa</td>
<td>te</td>
<td>ti-l</td>
</tr>
<tr>
<td><strong>1S&gt;3S</strong></td>
<td>gya (*dia)</td>
<td>dó</td>
<td>ti</td>
<td>ti</td>
<td>ta</td>
</tr>
<tr>
<td><strong>1S&gt;3D</strong></td>
<td>něn</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1S&gt;3P</strong></td>
<td>gyat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1S&gt;3I</strong></td>
<td>dé</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>X&gt;X&gt;1</strong></td>
<td>ně (*dě)</td>
<td>dǐn</td>
<td>ṭa</td>
<td>ta</td>
<td>tŋ</td>
</tr>
<tr>
<td><strong>1S&gt;X&gt;3S</strong></td>
<td>(č)</td>
<td>dí</td>
<td>máy</td>
<td>bey</td>
<td>bæ</td>
</tr>
<tr>
<td><strong>3S&gt;2S</strong></td>
<td>gó</td>
<td>(’ū’̂)</td>
<td>kō</td>
<td>ka</td>
<td>kō</td>
</tr>
<tr>
<td><strong>1&gt;3S&gt;2S</strong></td>
<td>gáy</td>
<td>wŋ̃ / gæŋ</td>
<td>kō</td>
<td>ka</td>
<td>kō</td>
</tr>
<tr>
<td><strong>1&gt;3D&gt;2S</strong></td>
<td>něn</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1&gt;3P&gt;2S</strong></td>
<td>yán</td>
<td></td>
<td>kʔw</td>
<td>kow</td>
<td></td>
</tr>
<tr>
<td><strong>1&gt;3I&gt;2S</strong></td>
<td>gó</td>
<td></td>
<td></td>
<td>kľm</td>
<td>kam</td>
</tr>
<tr>
<td><strong>2D</strong></td>
<td>mą (*bą)</td>
<td>(da)</td>
<td>mën</td>
<td>mën</td>
<td>m öl</td>
</tr>
<tr>
<td><strong>2P</strong></td>
<td>ba</td>
<td>(i)</td>
<td>mą</td>
<td>ma</td>
<td>bą</td>
</tr>
<tr>
<td><strong>2D RFL.</strong></td>
<td>mé (*bę)</td>
<td>bá (imp!)</td>
<td>mën</td>
<td>mø</td>
<td></td>
</tr>
<tr>
<td><strong>2D&gt;3S</strong></td>
<td>mą</td>
<td>(dąę)</td>
<td>mën</td>
<td>mq</td>
<td></td>
</tr>
<tr>
<td><strong>2P&gt;3S</strong></td>
<td>bą</td>
<td>bę̂</td>
<td>mę</td>
<td>ma</td>
<td>bą</td>
</tr>
<tr>
<td><strong>1&gt;2D</strong></td>
<td>mą́ (*bó)</td>
<td>wę̃ŋ̃ / wovęŋ̃ (3&gt;2du)</td>
<td>mąpę̃n</td>
<td>mę</td>
<td>mø-l</td>
</tr>
<tr>
<td><strong>2&gt;1</strong></td>
<td>bą́</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>X&gt;X&gt;2P</strong></td>
<td>bó</td>
<td>wę́ / wovę́ (3&gt;2pl)</td>
<td>mąpí</td>
<td>ma</td>
<td>bą</td>
</tr>
<tr>
<td><strong>3S</strong></td>
<td>Ø</td>
<td>(nq)</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
<tr>
<td><strong>3S</strong></td>
<td>Ø</td>
<td>(i)</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
<tr>
<td><strong>3D RFL.</strong></td>
<td>č</td>
<td>ʇn</td>
<td>зван</td>
<td>j-l</td>
<td></td>
</tr>
<tr>
<td><strong>3D RFL.</strong></td>
<td>ėn</td>
<td>(dąęŋ)</td>
<td>ʇn</td>
<td>j-l</td>
<td></td>
</tr>
<tr>
<td><strong>X(&gt;)&gt;3S</strong></td>
<td>á (3sg&gt;3sg)</td>
<td>6́ (3&gt;3sg)</td>
<td>ʇ</td>
<td>a (?)</td>
<td></td>
</tr>
</tbody>
</table>

She also observes that in 2>1 transitive forms, Tiwa and Towa seem to index the second person argument while Kiowa and Tewa seem to index the first person argument and
there seems to be a general preference for indexing second person over first or third throughout the family.

Watkins also remarks that both Tiwa and Towa, the two language groups that have a passive/inverse construction, seem to share a number of forms between their intransitive-dative and transitive-dative paradigms (the same is also true in Kiowa and Tewa). This feeds into her argument regarding voice discussed in chapter 0 below.

12.7 Conclusion

The above is the extent of the comparative work done on the pronominal indexation markers of Kiowa-Tanoan. Most of these studies were not comparative-historical in nature, however, a perspective which I contend is necessary for an understanding of the internal composition of such highly grammaticalized linguistic pieces. This dissertation thus aims to fill in a sizable gap in the study of the family. The following chapters will analyze the pronominal proclitics of the modern Kiowa-Tanoan languages by determining language internal analogical change and shift of individual pronominal forms in comparative perspective.

The analytic approach that I follow seeks to overcome the shortcomings of the above reviewed studies. The structuralists, Yegerlehner, Trager and his students all aim for maximal segmentation of the proclitics, even seeking to divide person and number, categories that are regularly expressed together in portmanteau form throughout the family. This segmentation leads to a degree of allomorphy for the expression of the semantic categories that is neither predictable nor predictive. The motivation for different forms of expression are not motivated by phonological or clear semantic factors. In the
analysis presented here, by contrast, there is no claim to allomorphy that is not phonologically motivated. There are some instances of portmanteau forms that appear to have been portmanteau and unanalyzable at the time that Proto-Kiowa-Tanoan began differentiating into the modern languages. I do not attempt to dismember any semantically complex morphological forms where evidence of formal complexity is absent in comparative perspective.

The tradition within Kiowa that began with Merrifield and was realized most comprehensively by Watkins also aims for maximum segmentation. However, in this tradition, allomorphy must be phonologically motivated, meaning that the model has some predictive capability. It does not predict every single pronominal form within Kiowa, although that is not surprising given both the complexity and the age of the pronominal system. However, like the previous analyses, the segmentation does not appear to reflect any kind of historical reality, undermining the composition that is being claimed.

My analysis follows that of Watkins’ (1984) most closely of the above insofar as it appeals to phonological factors motivating changes in the linguistic form. A comparative-historical perspective, however, necessarily reins in the degree of segmentation and only seeks to reconstruct pronominal forms that are purported to have had a formal reality at some stage of Proto-Kiowa-Tanoan. Instead of the four-part proclitic claimed in these analyses of Kiowa, my segmentation proposes only two morphological parts at most, although with the acknowledgement of evidence that suggests composition at some Pre-Proto-Kiowa-Tanoan stage.
In such a complex grammatical system, the proclitics have undoubtedly been influenced by more than simply their original internal composition plus the effects of regular phonological change. Alterations in the status of grammatical categories indexed within the proclitics and analogical pressure from other proclitics within the paradigm have also had some influence in creating the modern pronominal systems. Because the basic phonological and morphosyntactic changes of the family are still in the early stages of investigation, I appeal to analogical change only when no other explanation is forthcoming. It does appear to have played a role, however.

The analysis of the following chapters aims to be comprehensive, considering all of the pronominal forms of all of the modern Kiowa-Tanoan languages. I reach an analysis that is successful in accounting for the overwhelming majority of pronominal forms. On the other hand, such a complex system is not so easily cracked, and future analysis will undoubtedly uncover further evidence of factors of analogy, reanalysis, and grammaticalization that will better explain some of the patterns and exceptions that we find. However, the present study will have propelled research into the Kiowa-Tanoan pronominal proclitics well beyond where it previously stood to permit such studies to be undertaken.
13 Historical Proclitic Reorganization: Intransitive

13.1 Introduction to the Comparative-Historical Analysis

The challenges facing any analyst of the Kiowa-Tanoan pronominal proclitics are many. There is the issue of simply determining cognate forms, where the sound correspondences of these highly grammaticalized, unstressed elements do not follow the same patterns as in lexical stem-initial syllables (see Part II as well as chapter 0). Moreover, there appears to have been a great deal of reanalysis across all of the languages. The semantic complexity of the proclitics indexing—or at least licensed by—multiple arguments, the different types of arguments being indexed, the sensitivity to the person-animacy hierarchy, and even just the relative frequency of a given form may have all contributed to pronominal forms spreading or moving between paradigms and even between persons and numbers. Add to that the small size of the family, the fact that two of the branches consist only of a single language each, and the difficulty in determining the internal structure of the family (see chapter 0) and it may be impossible to reconstruct parts of the paradigms, or at least particular proclitics, with any certainty. However, I think we can reconstruct most of the pronominal series with a fair confidence by considering shared forms within and among the paradigms in each language even before we delve into the formal correspondences.

A serious study of the tables of pronominal proclitics presented in chapter 0 will reveal forms shared between monovalent (intransitive and reflexive) and divalent (transitive) paradigms, between divalent and trivalent (transitive-dative), and between the intransitive-dative and both the transitive and transitive-dative paradigms. Scrutiny of the
sub-morphemic patterns and historical constituency of the proclitics reveals even more complexity shared between forms of different paradigms.

Let us start the comparative-historical reconstruction process by evaluating the proclitics paradigm-by-paradigm, going from least to most complex. The order of presentation will be the intransitive (this chapter), intransitive-dative (chapter 0), transitive (chapter 0), reflexive (chapter 0), and transitive-dative (chapter 0). Those parts of the transitive and transitive-dative paradigms that index a speech act participant (first or second person) as a non-A Argument will be separately discussed in chapter 0. This walkthrough of the paradigms will allow us to determine which proclitics are probably cognate and thus which to formally compare when we turn to sound correspondences in chapter 0.

### 13.2 Intransitive Paradigms

Table 13-1 here summarizes the sets of intransitive proclitics from chapter 0, with the Tewa monovalent imperative proclitics from chapter 11.3.7 also added (to the right of the slash).
Recall from the descriptions of previous chapters that in Kiowa, but not in the other languages, the first person dual and plural are not differentiated (both e=). Given the pervasiveness of this coalescence in Kiowa and the pervasiveness (and formal features) of the differentiation in the other languages, I will take Kiowa to be the innovator here. Moreover it appears to be the first person plural that has spread to the first person dual in all cases rather than vice versa. This latter connection is further suggested by the fact that in Kiowa the first person non-singular is almost always formally identical to the third person inverse. The same correspondence—or at least suggestive similarities—are also to be found between the first person plural and the third person inverse in the other languages as well, a feature to which we will return. Finally, Kiowa is the only language to have a third person human plural (á=) distinct from the inverse (e=). We will see
suggestions of possible cognates with human plural indexation markers below, but the category itself is probably an innovation within Kiowa itself.

Merger of second and third person dual here and in many of the other paradigms is unique to the Tewa branch (da=) and appears to be an innovation considering the forms in the other languages. Thus, in the intransitive we may assume that there was a three-way distinction in person with a three-way distinction in number for all but the third person intransitive, which showed a four-way number distinction. Only Tewa is divergent in this latter fact, which appears to reflect the general loss of number marking tied up with noun class in this branch of the family. Following from the above paragraph, it also appears that there was identity or near identity between the first and third person dual (e.g. TA ɔn=, PI ąn=, ST ɨn=) and between the first person plural and third person inverse (e.g. Ki e=, Ti i=, To e=) in the intransitive paradigm. In Tewa (1D ga=, 3D da=) and (here) in Towa (1D ɨ=, 3D ɨ-l=) there is only similarity, but in Kiowa and Tiwa we regularly find homophonic proclitics for these non-singular persons.

The following sections will survey the individual person-number categories and language-specific proclitics of the intransitive paradigm.

13.3 Singular S Arguments, Intransitive

The first person singular proclitic forms are compared in (1).

(1) Intransitive IS Proclitics

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS</td>
<td>a</td>
<td>o</td>
<td>o</td>
<td>ə</td>
<td>ta</td>
<td>te</td>
<td>i</td>
</tr>
</tbody>
</table>

All languages except Picuris Northern Tiwa and Southern Tiwa have a form that consists only of a vowel, while the two exceptions share their /tV/ form with the first person
singular of the reflexive paradigm and with the transitive 1S>3P proclitic. Given that this consonant-initial form shares more in common with the development of the reflexive and transitive paradigm and given that there is one language from that same Tiwa subgroup, Taos Tiwa, which shows a vowel form comparable to Kiowa, Tewa, and Towa, we can take the /AV/ form to be innovative. The intransitive first person singular should be reconstructed as a vowel form *\(V=\).

The second person singular is trickier, as shown in (2).

(2) Intransitive 2S Proclitics

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<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>P1</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2S</td>
<td>ẽm</td>
<td>ų / ą</td>
<td>ų / ą</td>
<td>ę</td>
<td>a</td>
<td>a</td>
<td>q ~ a</td>
</tr>
</tbody>
</table>

\(2S\)  Intransitive

It appears that the reconstructed proclitic should be vowel-initial, since that is the form in all languages. Beyond that the question becomes whether that vowel is nasal or oral and whether there is a (probably nasal) consonant following that vowel. We can note that the second person singular proclitic is identical in all of the Tiwa languages between the intransitive and many of the second person forms in the other paradigms. It is interesting too to consider that if the intransitive first person singular had not been replaced by the ta= and te= forms respectively, the Picuris and Southern Tiwa proclitics would be homophonous with the intransitive second person singular proclitic by regular sound correspondence (cf. chapters 0, 0), namely both proclitics would be **a=. Notice in this regard that the first and second person singular proclitics in Taos Tiwa are identical but for nasalization. This could suggest that the second person singular may have consisted of a nasal. However, we will see later that this nasalized form ę in Taos Tiwa is probably imported from the homophonous transitive 1>2S form. Meanwhile the transitive 1S>3S
proclitic in the Tiwa languages is identical to the intransitive 2s, except that the Taos Tiwa form is not nasalized, \( \mathbf{\varepsilon} \). We will see suggestions later that this represents the original intransitive proclitic form. That is, both first and second person singular would have been \( \varepsilon = \). Thus, Taos Tiwa seems to have replaced its 2s form with the nasal \( I > 2s \) form \( \varepsilon = \) in order to avoid homophony between these forms, just as Picuris and Southern Tiwa have replaced their first person singular proclitics.\(^1\)

Towa confuses matters insofar as different sources have conflicting reports as to whether the vowel of this proclitic is oral or nasal. On the one hand, nasal /\( q \)/ is effectively non-phonemic in the language outside of the pronominal proclitics, but on the other hand there is a proclitic unambiguously of the form \( \mathbf{\varepsilon} = \). We will find in chapter 0 that the nasalized variant of the second person proclitic \( \mathbf{\varepsilon} = \) is problematic for sound correspondence in all of the cognate sets involving second person singular and may be an innovative pronunciation. From this, we would interpret the oral variant of the intransitive proclitic to be the original.

The basic intransitive Tewa forms are of little help: \( \mathbf{\nu} = \) is effectively identical to the second person singular independent pronoun \( \mathbf{\nu} \) and does not otherwise fit the regular sound correspondences with the forms of the other languages. The singular imperative form \( 6 = \), however, does fit (as we shall also see with the dual and plural imperative proclitics). Thus it appears that the imperative conserves a form closer to the original intransitive second person singular while the independent pronoun may have grammaticalized as the regular intransitive second person form (or at least influenced a

\(^1\) As William Croft (p.c.) has pointed out, languages tolerate a great deal of homophony within their lexical and grammatical systems. See Cysouw (2003) for further elaboration of the kinds of neutralization in person and number that can be found crosslinguistically.
change in the form). Given that the imperative form is homophonous with the Tewa first person singular o= but for tone, we may be looking at another instance of homophony avoidance with the second person proclitic being replaced to maintain a contrast.

Kiowa may show the same developments. By regular sound correspondences with the Tiwa languages and Towa, we would expect the second person singular proclitic to be either **ɔ̨ or **ɔ, the latter also the expected regular correspondence to the Tewa and Taos Tiwa first person singular vowels o= and ɔ= respectively. It should be noted that the transitive 2s>3s form in Kiowa is a=, identical with the actually occurring Is.itr form a=, which possibly opens the door for confusion. Thus the intransitive second person form may have been once again replaced partly in order to avoid confusion with the first person form, although this is less certain than in the above cases. The source of the occurring form ɢm may then be the transitive Is>s proclitic, just as we found in Taos Tiwa. Interestingly it is also similar to the second person independent pronoun ḋm, but there is no obvious motivation for the vowel change.

While on the topic of second person singular forms and Kiowa, I will point out that the Kiowa third person human plural form ʔ= is also formally similar to certain second person singular forms, such as a= 2s>3s. We will see formal similarities between other second and third person forms, including other Kiowa human plural forms, as we go through the paradigms. Remember that this category is used in Kiowa to refer to plural third person referents for whom the speaker has a great deal of empathy, usually restricted to fellow Kiowas. It has no known functional correspondence in any of the
Tanoan languages, suggesting it is a Kiowa-internal innovation\(^2\). Since second person is a category with high discourse empathy (if not also cultural empathy), it may be speculated that the Kiowa third person human plural indeed derives from a special use of the second person singular proclitic. Again, however, there is unfortunately little other evidence at present to back this proposal other than certain sound correspondences between human plural proclitics and second person singular proclitics of the other languages\(^3\).

From all of this discussion, I will suggest that the Proto-Kiowa-Tanoan second person singular proclitic consisted of an oral vowel that was near enough in quality to the first person that the modern reflexes would have merged in most of the branches, thus *V=. Alternatively, a nasal articulation should not be entirely ruled out, as seen in Kiowa, Taos Tiwa, and partly in Towa, or a form entirely homophonous with the first person singular except for tone, as we see in Tewa.

The third person singular, repeated in (3), is much easier to reconstruct.

(3)  Intransitive 3s Proclitics

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>3s</td>
<td>Ø</td>
<td>nq</td>
<td>nq</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
</tbody>
</table>

All but the Tewa languages have a null proclitic, so either the Tewa branch innovated a form or is most conservative. Given the cross-linguistic tendency for null marking in the third person singular and the presence of null-marking in three out of four branches of the family, it is probable that Proto-Kiowa-Tanoan also had null marking *Ø= for third person singular. The Tewa form nq= appears to be cognate with the spatial class markers

\(^2\) If Kiowa were the first language to split from the family, it could potentially be a conservative feature entirely lost in the Tanoan branches. However, in this case there is no evidence for or against such an analysis.

\(^3\) Watkins (1984) explains this form in her internal analysis of the pronominals as consisting of third person component Ø- plus the default agent vowel ia-. However, the occurring surface form â= is anomalous with respect to these components under the phonological rules that she gives.
prevalent in the Tiwa languages and also found in Towa. While further research into the 
Tiwa and Towa cognates is needed, it appears that it may have first become strongly 
associated with (intransitively marked) complement-taking predicates and predicates 
denoting ambient phenomena like weather and thence spread to all intransitive predicates 
under reanalysis as a general third person singular marker.

13.4 Plural S Arguments, Intransitive

Given cross-linguistic tendencies in frequency of occurrence and markedness 
(Corbett 2000, Greenberg 1966), it should be expected across all paradigms that singular 
forms develop differently than plural and dual forms. We tend to find more diversity of 
forms when singular arguments are involved than when we have plural arguments and 
more diversity among plural proclitics than among dual proclitics. Thus we will see 
greater similarities between the proclitics within the plural paradigm to be covered in this 
section than we did above, and greater similarity among plural and dual proclitics 
between paradigms.

The plural proclitics are repeated in Table 13-2.

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4 Remember that inanimate third person referents use singular indexation proclitics for both singular and 
plural. Thus, the nq= of Tewa probably first was reanalyzed as a third person morpheme unspecified for 
number, occurring whenever another third person number-marked morpheme would not occur. For 
animates the only open slot not already filled by a pronominal proclitic would be third person singular, thus 
its development as a singular marker for animate referents.
In all but the Tewa branch, the first person plural and the third person inverse (which is used for animate plural across all languages) are identical⁵, consisting of only an oral vowel. In Tewa note that the vowels are identical in first person ̃ and third person ̃, but the initial consonant distinguishes them. Thus the question is whether the forms were originally distinct as in Tewa with the other three branches losing the initial distinguishing consonant, or if Tewa added the consonants to differentiate originally homophonous vocalic forms. I will suggest that Tewa is here the innovator, analogizing the first person non-singular velar consonant from other paradigms (see below) while the third person alveolar consonant may stem from a conflation of the inverse and third person inanimate plural, to be discussed momentarily. An analysis that takes Tewa as conservative in this part of the paradigm would also likely have to suggest that the Kiowa, Tiwa, and Towa branches form a subgroup opposed to Tewa, a structure for which there is little evidence otherwise (see chapter 0). Thus, by my proposal the first

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⁵ Both Sprott (1992) and Yumitani (1998) want to distinguish the Towa first person plural and third person inverse, but it is not entirely clear that the forms are distinct. Sprott could not pin down what the formal difference was: he marked the first person plural as ̃ and the third person inverse as ̃, but explicitly stated that this did not actually mark a tone difference. Yumitani is the one who claimed the first person plural was long, ̃, but I’m not sure how much confidence to put in this transcription. It would be the one and only long vowel in all of the Towa pronominal proclitics, thus it seems like these two Towa proclitics are either actually homophonous (with the analysts and perhaps speakers under elicitation contexts trying to find a way to make them distinct) or like the vowel length reported by Yumitani is an innovation in Towa to make two originally homophonous forms distinct.
person plural and third person inverse of Proto-Kiowa-Tanoan were homophonous and consisted of a single vowel *V=. This vowel was distinct from the vocalic forms we reconstructed in the first and second person singular proclitics, however.

Tewa proves to be the odd language out in the second person plural as well, at least at first glance. The other three branches show a CV form with an initial bilabial stop /b/ (Kiowa and Towa) or /m/ (the Tiwa languages) while Arizona Tewa and most dialects of Rio Grande Tewa show a vocalic form í=. But, note that the Tewa imperative second person plural is bi=, beginning with a bilabial stop. I take it as likely that the Proto-Kiowa-Tanoan form was *bV=, the reflex of this in Tewa being conserved in the imperative, as we saw with second person singular as well, while the Tiwa reflex underwent the same nasalization of voiced stops as is rampant in that branch of the family. The origin of the regular Tewa intransitive second person plural í= is not immediately clear. Tone aside, it can be noted that it has the same vowel quality as the first and third person plural forms. Thus it may be that the originally homophonous vocalic first person plural and third person inverse also spread to the second person plural so that at an early stage of Proto-Tewa all plural (animate?) proclitics were all something like í=, perhaps with only tone differences. This homophony was thence lost when the initial consonants were added in the first and third person while the original second person plural proclitic was preserved in the imperative.

The third person inanimate plural presents a challenge where two branches suggest one form while the other two suggest a different form. The Tiwa languages and Towa show vowel-initial forms that appear to be cognate by regular sound correspondences we find in lexical stems (Tiwa /u/ to Towa /i/). It will turn out, however,
that this proclitic is not a true instance of that vowel correspondence set. The Towa form does also have a final consonant /l/ with no apparent cognate in Tiwa. Kiowa on the other hand has a CV form, gya=, which Watkins (1984) analyzes as derived from ia-d by metathesis and regular phonological rules. Importantly that /d/ is the non-singular coda increment found in several paradigms, comparable to the -l- in Towa. Note that the forms in all of these languages (Kiowa, Tiwa, and Towa) are identical to the transitive 3S>3P pronominal forms, which will prove relevant momentarily.

Tewa has no distinct inanimate plural—the third person singular proclitic is used for this function—but the similarity between the third person (animate) plural form di= and the Kiowa form is notable, especially since they match in terms of lexical sound correspondences. In the larger account of these inanimate plural proclitics, however, the Tewa vowel does not end up fitting into the sound correspondence. (A possible Tewa cognate to the inanimate plural will be mentioned below.) The initial /d/ of Tewa, on the other hand, may very well be related to the consonant of the Kiowa form (and of the Towa form). Since all evidence suggests that the Tewa reflex of the third person inverse (identical with the first person plural) would have been **i= there may have been the same pressure to distinguish plural persons as led to the insertion of the velar stop in the first person plural. The consonant /d/ does have some affiliation with third person plural in the different paradigms in modern Tewa, but does not appear to be cognate with a consonant in the other languages. Therefore the Tewa /d/ may have spread to the animate third person plural from some lost inanimate third person plural here in the intransitive
paradigm\textsuperscript{6}. From there it may have been analogized to other third person plural forms throughout the Tewa languages.

With regard to the intransitive third person inanimate plural, we thus appear to have two possibilities: a vowel-initial form, maybe with a high back vowel (in Tiwa and Towa), or a CV form, maybe with a high front vowel (in Kiowa and potentially Tewa). Given the Towa form with a final /l/ and Watkins\textsuperscript{7} (1984) analysis of the Kiowa form as derived from **iad, it is tempting to posit that all of these forms—the Tiwa V, the Towa VC, and the Kiowa and Tewa CV—may indeed all be cognate. In loose support of this, consider the transitive 3S>3P homophones of these proclitics in paradigmatic context\textsuperscript{7}.

This portion of the transitive paradigm in which this form occurs is given here in Table 13-3.

Table 13-3: Transitive X>3P Proclitics

<table>
<thead>
<tr>
<th></th>
<th>O</th>
<th>KI</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td></td>
<td>gyat</td>
<td></td>
<td></td>
<td></td>
<td>i-l</td>
</tr>
<tr>
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<td></td>
<td>bat</td>
<td>ku</td>
<td>ko</td>
<td>ku</td>
<td>ki-l</td>
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<td>gya</td>
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<td>u</td>
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<td>šō-l</td>
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<td>mu</td>
<td>maw</td>
<td>bu-l</td>
</tr>
<tr>
<td>3H</td>
<td></td>
<td>gyá</td>
<td></td>
<td></td>
<td></td>
<td>e-l</td>
</tr>
</tbody>
</table>

\textsuperscript{6} Remember from chapter 6.2.3 that there is an epenthetic consonant /d/ in Rio Grande Tewa (but not in Arizona Tewa). It is not completely impossible that the /d/ of the Tewa third person plural may have developed by reanalysis of such an inserted consonant. Note that where Tewa proclitics have an initial /d/, the other languages often have a vowel-initial form, i.e. the third person inverse. I will not follow up on this proposal in this dissertation—there are vowel-initial proclitics in Tewa, after all—but mention it as a possibility if my other suggestions do not ultimately pan out.

\textsuperscript{7} Because inanimate O arguments are indexed with singular morphology in Tewa, those two languages do not participate in this discussion.
Note that all of the Towa and Kiowa forms in this paradigm end in an alveolar consonant except for the Kiowa proclitics denoting \(3S>3P\) and \(3H>3P\), which Watkins suggests are derived by metathesis from **Ø-ia-d** and **Ø-ía-ia-d** respectively. Meanwhile, the Tiwa forms with a plural A argument all end in `-w=`; those with a dual A argument end in a nasal stop which usurps the occurrence of `-w=` (see discussion of duals below); and, two out of three of the singular A arguments end in a rounded vowel. The exceptional first person singular form will be discussed with the transitive paradigm in chapter 0. What is important here is the possible correspondence between Towa -l- (and the Kiowa -d=) and the Tiwa -w=. This /w/ seems to have merged with a preceding vowel—we will see which vowel in chapter 0—in the \(2S>3P\) and \(3S>3P\) forms in some stage of Proto-Tiwa to give the modern forms ku/ko= and u/o= respectively. (That is, ku/ko= derives from *kVw= and u/o= from *Vw=.) This is suggested by the regularity of the Tiwa increment /w/ to mark third person plural inanimate arguments and the fact that high back rounded vowels otherwise do not regularly occur in the Tiwa proclitics. See chapter 0 for more on the formal sound correspondences.

Admitting this proposal as at least a possibility, we can reconstruct the third person inanimate plural proclitic as a *VC= form, where the Kiowa and perhaps the Tewa CV forms are derived by metathesis. (Once sound correspondences are analyzed, it will turn out that the Tewa cognate may be the Arizona Tewa intransitive-dative \(X>>3P\) proclitic dóe=.) Alternatively, some subset of these proclitics may be wholly or partially non-cognate with the others. See chapter 15.2 for further discussion.

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8 As will be discussed below, the coda /w/ in Picuris Tiwa has fused with the preceding vowel to give a rounded vowel /u/.
13.5 Dual S Arguments, Intransitive

Finally there are the dual proclitics, which are repeated here in Table 13-4.

Table 13-4: Intransitive Dual Proclitics

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1D</td>
<td>e</td>
<td>ga ~ a</td>
<td>ga</td>
<td>ɑn</td>
<td>ɑn</td>
<td>ʃn</td>
<td>ʃ</td>
</tr>
<tr>
<td>2D</td>
<td>mą</td>
<td>da / bá</td>
<td>da / bá</td>
<td>mɔn</td>
<td>mɔn</td>
<td>mɛn</td>
<td>mɔ-l</td>
</tr>
<tr>
<td>3D</td>
<td>ɛ</td>
<td>da</td>
<td>da</td>
<td>ɑn</td>
<td>ɑn</td>
<td>ʃn</td>
<td>ʃ-l</td>
</tr>
</tbody>
</table>

In all but the Tewa languages, nasality in vowels and consonants is a dominant feature of dual indexation across all paradigms. There is evidence of this association in some of the other Tewa paradigms as well, although such instances must be carefully parsed from nasalization caused by other developments. There are no nasal forms at all in the Tewa intransitive paradigm, but this appears to follow from innovations that denasalized the vowels in these proclitics. The motivation for this kind of denasalization is not clear.

The most easily analyzed form is the second person dual. In all but the Tewa regular intransitive paradigm, the proclitic begins with a bilabial stop, specifically a nasal stop. The Tewa languages use the same form da= for both second and third person dual, which is not apparently cognate to the second person of the other three branches, the Tewa third person dual having taken on second person function as well. But, once again looking to the Tewa monovalent imperative proclitics, we find bu=, which does look more promising. We will see as we analyze the paradigms that the nasalization tends to be realized primarily on the vowel, the consonant(s) being nasalized by assimilation. This will suggest that the reconstructed Proto-Kiowa-Tanoan second person dual form should be *bY=. The Tiwa languages and Towa have a proclitic-final consonant as well. We
will return to this momentarily. While Tewa does lack a nasal vowel, the quality of the vowel that we find does match the regular vowel correspondences once we take oral-nasal vowel associations into account.

There is identity between the first and third person dual forms in the Tiwa languages, just as there is between the first person plural and third person inverse. This identity is also found in Towa except that the third person dual has a final consonant /l/ not found in the first person dual. Since Kiowa does not have a first person dual distinct from its first person plural, it provides no evidence on this issue of identity. The developments of Tewa are similarly unhelpful in this regard, where both the first and third person dual proclitics seem to have had a consonant inserted. Given the sound correspondences, however, it does appear that the dual forms are historically derived by nasalizing the vowels of the plural/inverse forms (see chapter 0 for more details). Since the first person plural and third person inverse are reconstructed as identical, it suggests that first and third person dual are also historically identical. By this reasoning the form for both persons should be reconstructed as a homophonous \( *V^n = \).

What about that final consonant in Tiwa and Towa? Should the intransitive dual proclitics be reconstructed with or without a coda? It is difficult to say for certain, although I will propose that the intransitive lacked the coda. The specific forms in Towa with the coda /l/, \( m\=l= \) and \( i\=l= \), are found in many of the paradigms to denote second person dual and third person dual respectively, including in the reflexive, transitive (where they may be used for A arguments or O arguments), and in the intransitive-dative and transitive-dative. Moreover, we will find in chapter 14.5 that there is a form -l- in Towa and -d= in Kiowa that regularly marks dual number of the non-dative argument in
dative constructions. Even though this is identical to number marking for inverse number (and inanimate plural number), there is suggestion that there may have originally been a (distinct) marker of dual as well. These number marking increments are not regularly found outside of the dative paradigms, but there is the suggestion that the dual marker at least may have spread to other paradigms, thus the final -l- of the Towa intransitive second and third person dual. The motivation for this spread is not apparent, although it may have been a phenomenon either post-dating the break-up of Kiowa-Tanoan or immediately pre-dating the break-up to explain the absence of any coda in Kiowa.

A late innovative spread may also help to explain why the Towa intransitive first person dual does not also have the -l-. Perhaps it is due to greater frequency of use of the first person dual over the second or third person, pressure to create a distinction between the otherwise homophonous first and third person dual, or some combination of such factors. The first person dual may thus be representing the original intransitive dual pattern before the -l- began spreading outside the dative.

Such a dual marking coda may also explain Tiwa dual forms across all the paradigms, which almost always bear a coda /n/ even when the other languages lack a final consonant. However, the pervasiveness of this coda consonant seems to be a Tiwa-internal innovation since the number-marking codas appear to be originally restricted to only certain constructions. The dual-marking coda is the least regular in its occurrence, however, thus it is possible that Tiwa is the most conservative branch of the family when it comes to the intransitive dual. That is, it may be that the dual coda was found in the intransitive dual in Proto-Kiowa-Tanoan, which has been retained in Tiwa but began to be eroded away in the other three branches.
Note also from the discussion in chapters 14.5 and 19.1.1.4 that it is uncertain whether the dual number increment should be reconstructed as an oral or nasal stop. There are suggestions that it may have been oral, but the nasal-dual association in the family is strong. In this connection the nasalization associated with dual may actually derive by the addition of a coda nasal consonant (which led to nasalization of the vowel) rather than by direct nasalization of the vowel. This is not an unlikely explanation given that nasalization as a suprasegmental feature has no morphological presence in Kiowa-Tanoan other than in the dual. If this is the case, then a dual-marking nasal consonant could have been lost in the Kiowa, Tewa, and Towa branches of the family in several of the paradigms leaving behind only a nasal vowel while the Tiwa branch has preserved the nasal consonant. The coda -l- of Towa may still have spread back into the intransitive as described above following the loss of the nasal codas or it may have some cognacy with the Tiwa nasal consonant. One problematic issue with this explanation is that it would be one of the only parts of the language where a coda nasal consonant was regularly lost completely in Kiowa and Tewa with no consonant reflex. I will therefore not follow this suggestion of a Proto-Kiowa-Tanoan */n/ causing the dual nasalization. That is, nasalization marking dual and the coda increment marking dual do not appear to be directly related between Proto-Kiowa-Tanoan and its modern descendants.

In summary, comparison across the paradigms does suggest that the dual marking coda in most (non-dative) paradigms where it occurs marking a dual S or A argument is an innovation caused by analogical spreading, perhaps to reinforce the dual marking by simple nasalization of the vowel. However, it is perfectly possible that the dual marker had already begun to intrude into the intransitive paradigm before the break-up of Proto-
Kiowa-Tanoan and was later lost in Kiowa and Tewa. As a conservative analysis at the present, however, I will maintain the analysis of the dual forms lacking the coda consonant for this dissertation. Also, it is not improbable that the vowel nasalization of the dual does ultimately derive from a lost coda nasal consonant—a common source of nasal vowels cross-linguistically—but I would guess that this origination happened at some ancient Pre-Proto-Kiowa-Tanoan stage.

What about the divergent forms of Tewa? In all dual forms, nasalization appears to have been lost, perhaps just by idiosyncrasy. It appears that we can argue for the addition of the initial /g/ in the first person dual by the same analogy as took place in the plural. On the basis of the initial /d/, the shared form of the second and third person dual, da=, likely originated as a third person form and spread to the second person. Given that the third person dual is vowel-initial in the other languages, the question then becomes where the initial /d/ in Tewa comes from. Possibly, it was added to the dual by analogy with the third person plural (or by similar motivation as an epenthetic consonant, cf. footnote 6).

It is also possible that, like the plural, the dual derives by metathesis from a *VC form. If so, this could be used to argue for reconstructing a final consonant in the dual for Proto-Kiowa-Tanoan at least in the third person, contra the above proposal. Alternatively, it could suggest a reconstruction of a final consonant in the dual of some subgroup including Tewa and either Towa or Tiwa or both. The latter proposal will be included in the discussion of subgrouping in chapter 0, but would not affect the reconstruction of Proto-Kiowa-Tanoan. The former proposal would affect the full family-level reconstruction, but given the lack of a parallel form in Kiowa to argue for metathesis of
an original Proto-Kiowa-Tanoan *VC form, I will maintain my analysis of the dual without a final consonant.

**13.6 Summary of the Intransitive Reconstruction**

Table 13-5 provides a summary of the schematic reconstruction of the intransitive pronominal proclitics of Proto-Kiowa-Tanoan.

Table 13-5: Schematic Reconstruction, Intransitive Paradigm

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>I</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>*V</td>
<td>*V₂</td>
<td>*V₂</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>*V</td>
<td>*bV</td>
<td>*bV</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>*Ø</td>
<td>*V₂</td>
<td>*V₂</td>
<td>*VC</td>
</tr>
</tbody>
</table>

The subscript numerals indicate vowels that are suggested to have the same quality by the discussion above, nasalization notwithstanding. Vowels that are not so marked were simply not provided with an argument for quality from the patterns discussed above. Chapter 0 will examine the sound correspondences to propose actual forms to fill out the consonant and vowel slots (and indeed it will be argued that the second person dual and plural proclitics have the same original vowels as the first and third person forms).
14 Intransitive-Dative: Historical Reorganization

The intransitive-dative paradigm, despite the clumsy name and its typological uniqueness\(^1\), is a highly frequent paradigm in Kiowa-Tanoan languages, occurring in some very common constructions. Because it is designed to combine non-agentive animate referents and speech act participants with (often inanimate) third person arguments, it has ended up having influence in the other polyvalent paradigms. It would therefore behoove us to address this series before tackling the transitive in order to take into account this influence.

In some ways the intransitive-dative is much like the monovalent pronominal paradigms in that the series predominantly distinguishes three persons and three numbers of only a single argument, namely the dative argument. Distinguishing the number of the third person S argument\(^2\), grammaticalized in all but the Tewa languages, seems to be (loosely) a secondary layer of inflection added to this primary dative layer. In fact there is a high degree of transparency and analyzability in the Tiwa and Towa languages in which part of the proclitic indexes the dative and an agglutinated consonant indexes the number of the third person S argument. Similar constituency can also be seen in Kiowa, although phonological developments leave the pronominal forms more complex (see chapter 19.1.2.6 for a proposal on the development of this complexity). One question for the

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\(^1\) Unique as a distinctive paradigm. There are a fair number of languages in the world, particularly in the Americas, that do index a benefactive or possessor argument. However, see Munro and Gordon (1982) for some parallels in Muskogean languages. Thanks to Bill Croft (p.c.) for pointing out the similarity.

\(^2\) Labeling this the “S argument” is a little misleading. The motivation for using this label comes from the fact that if one were to add a dative argument to an intransitive predicate, the “S argument” of the intransitive-dative construction fills the same semantic role with respect to the predicate as does the S argument of the basic intransitive. However, it is the dative argument that seems to be informationally most prominent in an intransitive-dative construction, the “S” being relegated to a secondary argument role. This relative prominence is suggested not only by the differing distinctions in person and number—greater distinctions for the dative—but also by usage. The intransitive-dative seems to be avoided in the main predicate when the third person “S argument” bears informational prominence, as mentioned in chapter 0.
reconstruction is how many numbers are distinguished for the S argument. None of the branches agree: Kiowa makes a four-way distinction, Tiwa a three-way, Towa a two-way, and Tewa makes no distinction! Insofar as the intransitive-dative pairs with the intransitive via the functionally comparable “S argument”, it seems likely that Kiowa is the most conservative in this regard and that a four-way distinction is original. The Tiwa languages have lost the dual for all non-primary arguments, which may help to explain its three-way number contrast despite showing a four-way distinction in the basic intransitive. The collapse and loss of codas in Towa and Tewa may explain the reduced number distinctions of those two branches.

In terms of this S argument number marking, these patterns are as follows. Reminder of the full proclitic forms will be given in the sections below. Singular, or basic, number is almost always unmarked. Only in Picuris Tiwa has there developed an innovative correlation between a final /n/ and singular number. In Towa, dual and inverse are both regularly marked by adding -l- to the basic number proclitic. This -l- actually is a tightly bound prefix to the verb which may be separated from the loosely bound pronominal proclitic by other morphemes as we saw in 11.5. Non-inverse (inanimate) plural is regularly indexed as basic number. In the Tiwa languages, inverse is indexed by adding an increment -m= to the unmarked singular form while inanimate plural is indexed by adding -w=. In the Northern Tiwa languages—an epenthetic vowel, always TA /ɔ/, Pt /a/, a copy of the proclitic vowel—precedes this number-marking increment whenever the singular form ends in a consonant. In Picuris Tiwa the plural -w= always fuses with a preceding vowel to form a simple monophthongal rounded vowel /u/ or /o/ as a regular phonological development. It can also be noticed in Tiwa that in many
instances with non-singular dative arguments, the inverse and the singular forms are
merged in favor of the more marked inverse.

In Kiowa the proclitics end in an alveolar consonant whenever both the S
argument and the D argument are non-singular. When the dative argument is second or
third person singular, the inverse and the inanimate plural also end in an alveolar
consonant. On top of this final consonant, the vowel nucleus regularly correlates with the
number of the S argument except when the dative is non-singular third person: /e/ marks
dual, /ɔ/ marks inverse, and /a/\(^3\) marks inanimate plural. Watkins (1984) explains the
homophony of the proclitics with a non-singular S argument and third person non-
singular D argument by idiosyncratic mergers of the person number and object number
vocalic increments (see chapter 12.5).

We will discuss the above number-marking in detail in section 14.5 below. I
review them here so the reader can set them aside as we analyze the dative portion of the
proclitics in the following sections.

### 14.1 Singular D Arguments, Intransitive-Dative

Table 14-1 provides a refresher of the singular D Argument proclitics of the
intransitive-dative paradigm.

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\(^3\) Watkins (1984) analyzes this vowel as /ia/ underlyingly.
Nasalization of the vowel appears to be a prominent feature here in forms indexing singular dative arguments across the languages, except for the Kiowa second and third person singular gyá=, gò=, ã=, ɔ= (but see below). All forms in Rio Grande Tewa are nasalized, although that appears to be due to the coda /ŋ/ common across all dative pronouns rather than to nasalization of the vowel. Nasal /į/ and /ǭ/ are virtually never phonemic in Tewa and we will see that these Tewa proclitics are not directly cognate with those of the other languages. We will also see that many pronouns in the Tiwa languages also contain a coda nasal consonant, apart from the inverse number marker -m-, as we see in the S>>1S proclitic here, TA ɔn=, Pi øn=, ST ın=. Analysis will proceed person-by-person as in the previous chapter.

The first person singular, repeated in (1), is vowel-initial in all but the Tewa languages, at least when combined with a singular/basic number S argument.
With a non-singular S argument, the Kiowa first person singular dative forms are initialized by a consonant\(^4\), but the singular form is vowel-initial, as noted. This pattern across three out of four branches indicates the vowel-initial form can be reconstructed to Proto-Kiowa-Tanoan. The consonant-initial non-singular S forms of Kiowa could be explained by metathesis: under Watkins’ (1984) analysis, a coda alveolar stop is expected in all three of these consonant-initial proclitics to mark the non-singular argument, but is not found. Watkins did not pursue this possibility at that time, believing there to be a first person-marking onset *d-* based on these three forms and based on the /d/-initial \(X >> 1NS\) proclitics. However under comparative perspective, there is actually little motivation for an initial consonant to index a first person singular dative argument other than the three \(XNS >> 1S\) proclitics in question. We could therefore follow Watkins’ analysis of other pronominal forms and appeal to metathesis: the coda alveolar stop indexing a non-singular non-dative argument has been moved to initial position in the proclitic before an onset-less vowel.

There is at first the temptation to consider the onset /d/ of Tewa as similarly derived by metathesis. However, vowel correspondences will suggest that the Tewa form may in fact not even be cognate with the proclitics of the other languages. Instead Tewa

\(^4\) Under Watkins’ (1984) analysis, it is the \(S >> 1S\) proclitic that is anomalous for its lack of an onset consonant. Under a comparative perspective, this is a conservative form and it is the non-singular S argument proclitics that are anomalous, unless Kiowa can be shown to be the most conservative language of the family in its pronominal forms.
dîŋ = (RGT) / dîŋ = (AT) appears to be derived from the transitive $X>1$ pronominal dî= plus the dative marker -ŋ = (the latter of which appears to descend from the S argument number-marking increments in 14.5). Indeed all of the Tewa intransitive-dative proclitics seem to be derived from other paradigms and are not satisfactorily cognate with the forms in the other languages. We will see in chapter 0, however, that the origin of the transitive $X>1$ form dî= is itself problematic. The expected form of the Tewa $X>>1S$ proclitic by regular sound correspondences would appear to be **æŋ = (RGT) / **ɑŋ = (AT), which is homophonous with the $X>>1D$ proclitic, or nearly so. Whether this first person singular form was innovated to avoid homophony or for other reasons is unclear.

Having contended that the first person singular form should be reconstructed as vowel-initial, there is also the question of whether or not there was a coda consonant (ignoring the non-singular number marking codas). A coda /n/ is found in all of the Tiwa languages. In the Northern Tiwa languages, this /n/ is clearly analyzed as an inherent part of the first person singular proclitic since the S argument number markers -m= and -w= are added following the /n/, separated by an epenthetic vowel copying the core vowel of the proclitic. As in the discussion of the intransitive dual proclitics in chapter 13.5, there is the question of whether this final /n/ should be reconstructed to Proto-Kiowa-Tanoan or not. Southern Tiwa may give us a clue. Rather than being added after the /n/, the number markers -m= and -w= actually replace the /n/. While this could mean that the /n/ has simply been reanalyzed as a number marker by analogy with the inverse and plural marking consonants, it may also suggest that the /n/ was a late addition to the singular

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5 The Picuris Tiwa 3P>>1S form onŋ appears to show anticipatory assimilation. The expected Proto-Picuris form would have been *ŋąw with the vowel-glide sequence subsequently fusing to a monophthongal /o/, i.e. *ąŋ. The initial syllable must then have assimilated to the following syllable to derive the modern form.

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form in the Tiwa branch. Under this latter analysis, Southern Tiwa would show the most conservative forms in the first person singular with its monosyllabic proclitics. It could be suggested that the /n/ may have been added either to help distinguish the first person singular from other, nearly homophonous proclitics, e.g. the third person singular, or it could simply be due to analogical pressure from proclitics bearing the same vowels that also had a coda /n/. Alternatively it could in some way originate from the dual marking number increment otherwise lost in Tiwa dative constructions.

In short from the above discussion, I will opt to reconstruct the first person singular intransitive-dative proclitic as \*\~V\~. There is some suggestion from the forms we see above (which I will follow up on in chapter 0) that the intransitive-dative first person singular may derive by nasalizing the intransitive 1S form.

The second person singular shows clear formal similarities across all but the Tewa languages, as seen in (2).

(2)  

<table>
<thead>
<tr>
<th></th>
<th>2s Proclitics</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>D</td>
</tr>
<tr>
<td>S</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td></td>
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<tr>
<td>D</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
</tr>
</tbody>
</table>

The proclitic begins with a velar stop in Towa, Tiwa, and in Kiowa (taking into account dental-velar switch, that is). These cognates all show an open syllable, the number marking consonants notwithstanding, so there seems no reason not to reconstruct the proclitic as a CV form. There is a difference in the vowels, however: Tiwa and Towa
show a nasal vowel\(^6\) while Kiowa shows an oral vowel in the singular and inverse numbers. Significantly, however, the Kiowa vowel is nasal in the inanimate plural, which is not regularly motivated by the plural number marking\(^7\). It is thus compelling to reconstruct the second person singular proclitic as \(^*\text{q}̃\text{Y}^=\), with a nasal vowel (and an initial back velar). This nasalization is retained in Kiowa in the plural form, perhaps conserved via the nasalized number-marking alveolar coda\(^8\), while the nasalization was lost in the CV-form singular and inverse. Denasalization is attested in Kiowa elsewhere following voiced stops (see chapter 0), but there is no obvious motivation in this particular second person singular dative proclitic.

The second person singular forms found in the Tewa languages appear to be entirely non-cognate with the proclitics in the other languages. The similarity with the intransitive second person singular proclitic—and, by extension, with the independent pronoun—suggests that this form may have been generated by reanalysis. Because the coda nasal \(/\eta/\), which originally marked number of the non-dative argument (see below), has been reanalyzed as an indicator of the dative paradigms, and because the intransitive-dative series is the dative complement of the intransitive series (i.e. occurs on the same predicates and is functionally closely related), we find a possible path by which the Tewa second person proclitic may have developed. The dative marker \(-\eta^=\) was simply

\(^6\) Southern Tiwa shows an oral vowel, but the sound correspondences suggest that this is a case of denasalization after the separation from Northern Tiwa and not a conservative feature. The same is true with the \(3p>>2s\) form in Picuris Tiwa. We will see that denasalization of vowels is very common in Southern Tiwa pronominal proclitics.

\(^7\) The dual form is also nasalized, but since nasalization regularly marks dual number, it cannot be used yet as evidence for nasalization as a reflex of the dative person-number marking. We will see suggestions in chapter 0, however, that this nasalization does indeed reflect the original nasalization of the proclitic and does not stem from the number marker.

\(^8\) That is, even if there were pressure to denasalize the vowel, there would not necessarily be a similar pressure to denasalize the already nasalized coda consonant. Since vowels are always nasalized in the same syllable as a nasal consonant, nasalization is preserved simply by retaining the coda consonant.
appended to the intransitive second person singular proclitic, thus creating greater similarity between the paradigms. The association between initial velar consonants and second person is not particularly strong in any of the paradigms, being found minimally in the dative and transitive paradigms, so this replacement in Tewa does effectively result in more regularity in how second person singular is indexed, suggesting some analogical development.

There may be a Tewa cognate to the velar-initial \( X >> 2S \) proclitics of the other languages. One variant of the transitive-dative-reflexive second person singular proclitic is \( gæ̅ŋ = \), the only second person form in Tewa that shows /g/. The vowel and consonant correspondences work for this form as do the semantics involved (second person singular dative), making it a likely cognate. This provides support from all branches for a reconstruction of \( *qV = \).

At first glance the third person singular appears to be cognate across all branches of the family, although the Tewa form may not be, at least not directly. These forms are shown in (3).

(3) Intransitive-Dative 3s Proclitics

<table>
<thead>
<tr>
<th>S</th>
<th>D</th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>3S</td>
<td>á</td>
<td>ñη~ñη</td>
<td>ñ</td>
<td>ŋ</td>
<td>a</td>
<td>a</td>
<td>9</td>
</tr>
<tr>
<td>I</td>
<td>3S</td>
<td>ñ</td>
<td>ñη~ñη</td>
<td>ñ</td>
<td>ŋm</td>
<td>am</td>
<td>am</td>
<td>9-l</td>
</tr>
<tr>
<td>D</td>
<td>3S</td>
<td>ôn</td>
<td>ôn</td>
<td>ôn</td>
<td>ôm</td>
<td>am</td>
<td>am</td>
<td>9-l</td>
</tr>
<tr>
<td>P</td>
<td>3S</td>
<td>ôn</td>
<td>ôn</td>
<td>ôn</td>
<td>ôw</td>
<td>o</td>
<td>aw</td>
<td>9-l</td>
</tr>
</tbody>
</table>

In all four groups, the proclitic consists of a vowel with no onset or coda consonant (aside from the normal dative marker /ŋ/ in Tewa\(^10\)). The vowel is nasalized in all languages

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\(^9\) The other variant is \( mæ̅ŋ = \), which originates from elsewhere.

\(^10\) As a dialectal alternative to the second person singular of Rio Grande Tewa and as the sole reported form of the third persons singular of Arizona Tewa, we find a long high nasal vowel with no coda nasal stop.
except in the singular and inverse S argument forms of Kiowa or in Southern Tiwa. By the same evidence and arguments that we saw with the second person, it appears that we should reconstruct a nasal vowel for the third person singular, i.e. *\( \upeta \). In Kiowa, the inanimate plural (and dual) form is nasalized while sound correspondences suggest that Southern Tiwa (and the \( 3P >> 3S \) form of Picuris Tiwa) underwent denasalization as a late development.

The Tewa vowel again does not match the vowel correspondence we see in the other languages. We would expect **æŋ** (RGT) / **ɑŋ** (AT), just as we found in the first person singular (which may be a motivation for the replacement of both of these forms in Tewa). Nasal /\( \eta \)/ does not really occur phonemically in Tewa, so we seem to have an oral /\( \epsilon \)/ form combined with the dative marker -\( \eta \)=. The probable source of this vowel is the transitive \( 3>3S \) proclitic \( \epsilon \)=, just as the previous two proclitics were derived from other paradigms.

Given that third person singular is marked by a null form in the more basic intransitive and transitive paradigms (cf. the \( 3S>3S \) form), it is worth asking where this \( \upeta \)= form intransitive-dative proclitic may have originated. The Tewa proclitic, even if not directly cognate, may give us a clue. It will be suggested in chapter 0 that the Tewa \( \epsilon \)= \( 3>3S \) proclitic originates from a second person singular form, cf. intransitive \( \epsilon \)= \( 2S.IMP \) and the reconstructed transitive \( 2s>3s \) forms. While the shift of this particular second person morpheme from second to third person appears to be otherwise limited to Tewa and Kiowa (to give the third person human plural proclitics), we will see in other

While it is possible that this is simply an idiosyncratic feature of these forms, it is equally likely that the nasal consonant has been lost with compensatory lengthening of the vowel. I find it not uncommon to hear [\( \epsilon \)] as an alternative pronunciation of /\( \epsilon \eta \)/ in Rio Grande Tewa, at least. Also, raising of nasalized /\( \eta \)/ to [\( \epsilon \)] appears to be a common development in the pronominal proclitics.
paradigms a merger of second and third person singular in Tiwa and Towa as well. Thus, it is possible that the Proto-Kiowa-Tanoan intransitive-dative \( X \gg 3s \) proclitic \( *V= \) derives by nasalizing the intransitive second person singular \( *V= \) proclitic. The vowel correspondences match just as we find between the intransitive and intransitive-dative first person singular. Thus, there may have been ambiguity between a second and third person singular in the intransitive-dative in Pre-Proto-Kiowa-Tanoan. The velar stop was then added to the second person form to distinguish them\(^{11}\). It is worth exploring this possible association between second and third person in more detail in future.

14.2 First and Second Person Non-Singular D Arguments, Intransitive-Dative

The non-singular dative proclitics show the same range of correspondences as the singular, the probable Proto-Kiowa-Tanoan forms being largely apparent notwithstanding anomalies in individual languages. Table 14-2 shows the first and second person plural D argument proclitic forms.

Table 14-2: Intransitive-Dative Plural D Proclitics

<table>
<thead>
<tr>
<th>S</th>
<th>D</th>
<th>Kí</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>1P</td>
<td>dó</td>
<td>gíŋ</td>
<td>gíŋ</td>
<td>kí</td>
<td>ki</td>
<td>ki</td>
<td>se</td>
</tr>
<tr>
<td>I</td>
<td></td>
<td>dót</td>
<td>gíŋ</td>
<td>gíŋ</td>
<td>kîm</td>
<td>kîm</td>
<td>kîm</td>
<td>se-l</td>
</tr>
<tr>
<td>D</td>
<td>dët</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>gyát</td>
<td></td>
<td></td>
<td></td>
<td>kîw</td>
<td>ku</td>
<td>kiw</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>2P</td>
<td>bó</td>
<td>úŋ</td>
<td>óh</td>
<td>mš~</td>
<td>mšm</td>
<td>mšm</td>
<td>ba</td>
</tr>
<tr>
<td>I</td>
<td></td>
<td>bót</td>
<td>úŋ</td>
<td>úŋ</td>
<td>mšm</td>
<td>mšm</td>
<td>mšm</td>
<td>ba-l</td>
</tr>
<tr>
<td>D</td>
<td>bët</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>bát</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{11}\) The source of this second person singular velar is not clear at present since we only find it in the dative. It may be related to the velar of the first person non-singular proclitics, however.
The first person plural looks to be cognate across all branches (although the Kiowa form is questionable as a cognate, cf. chapter 19.1.2.6). The form shows an initial velar in Tewa and Tiwa, an initial /s/ in Towa, and an initial alveolar or velar stop in Kiowa. The consonant correspondence across the Tanoan languages suggests an original velar while Watkins analyzes Kiowa as having an underlying alveolar stop since the consonant is realized as /d/ except before a high front vowel (where it predictably becomes velar). Following the instances of alveolar-velar correspondences of Part II, the proclitic may be reconstructed with either an initial alveolar or velar depending on the reconstructed quality of the proclitic vowel.

Alternatively it is possible that the Kiowa proclitics are not cognate, strictly speaking. Recall that first person non-singular is identical to the third person inverse when non-dative. However, in the dative there is no distinction between third person inverse and (animate) plural and Kiowa shows some oddities in its dative third person non-singular proclitics both on Kiowa-internal and comparative grounds (see below). Thus it is not impossible that the modern first person non-singular dative proclitics actually represent original third person inverse forms, the third person plural dative having later been replaced by the modern forms. Following this, there would be no question of reconstructing an initial velar for the first person plural for Proto-Kiowa-Tanoan, or at least no conflicting evidence.

The initial consonant notwithstanding, the schematic form of the rest of the first person plural proclitic is quite clear. No language suggests a coda consonant and all languages have an oral vowel. Therefore the reconstructed proclitic should be *QV= (or maybe *TV= by the alveolar-velar debate above), the capital letter consonant being non-
committal for voicing (but we’ll see in chapter 19.1.1 that it should be reconstructed as a voiceless stop). The Tewa proclitic may be only indirectly cognate, by regularly affixing the dative marker -ŋ to the intransitive first person plural form gi=. It may also be that the /g/ seen in the intransitive is derived by analogy with this intransitive-dative proclitic.

The second person plural is formally comparable across all but the Tewa languages, as seen in (4).

(4) Intransitive-Dative 2P D Proclitics

<table>
<thead>
<tr>
<th></th>
<th>D</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PT</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>2P</td>
<td>bó</td>
<td>ýη</td>
<td>óh</td>
<td>mʒ~mʒ̃</td>
<td>m̃n</td>
<td>mam</td>
<td>ba</td>
</tr>
<tr>
<td>I</td>
<td></td>
<td>bɔ́t</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>bét</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>mɔ́w</td>
<td>ba-l</td>
</tr>
<tr>
<td>P</td>
<td></td>
<td>bát</td>
<td></td>
<td></td>
<td>mʒ̃</td>
<td>mϊ̃m</td>
<td>mą̃m</td>
<td></td>
</tr>
</tbody>
</table>

There is an initial voiced bilabial stop in Kiowa, Tiwa, and Towa, the Tiwa forms being nasalized while the Kiowa and Towa proclitics have an oral stop. Since all proclitic-initial voiced stops have become nasalized in Northern Tiwa, the oral quality of the Kiowa and Towa consonants is probably the more conservative. Southern Tiwa retains oral voiced stops in an oral context, but the coda nasal appears to have led to nasal assimilation of the onset stop. Thus, it is reasonable to reconstruct an oral voiced bilabial stop for the Proto-Kiowa-Tanoan proclitic. The vowel of the proclitic also appears to be oral based on the evidence from Kiowa and Towa and the vowel correspondences of Tiwa. The Tiwa languages do raise the question of whether or not there was a coda consonant, based at least on the final /n/ seen in Picuris Tiwa. However, given the lack of a coda in the Taos Tiwa form mʒ= and the fact that the number increments in Picuris Tiwa replace the /n/ of the singular rather than being added to it, it is likely that the
original form was an open syllable. My suggestion is therefore that the second person plural be reconstructed as *bV=.

This then leaves the question of where the Tewa vowel-initial form for the second person plural came from. The Rio Grande Tewa form looks as though it may originate by analogy with the second person singular form, perhaps with influence too from the non-singular second person independent pronoun ˀúŋ. The Arizona Tewa proclitic, on the other hand, appears to have originated under influence of the /o/-initial second person forms of the transitive paradigm (see chapter 0). In either case it appears that the original second person dative proclitics have once again been lost in Tewa.

The first and second person dual proclitics show many of the same issues as their plural counterparts, as can be observed in Table 14-3.

**Table 14-3: Intransitive-Dative Dual D Proclitics**

<table>
<thead>
<tr>
<th>S</th>
<th>D</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>1D</td>
<td>dó</td>
<td>gęŋ</td>
<td>gęh</td>
<td>k próp</td>
<td>kánan</td>
<td>ki</td>
<td>sō</td>
</tr>
<tr>
<td>I</td>
<td>1D</td>
<td>dót</td>
<td>~ ěŋ</td>
<td>~ ěh</td>
<td>k próp</td>
<td>kánam</td>
<td>kim(ǐm)</td>
<td>sō-l</td>
</tr>
<tr>
<td>D</td>
<td>2D</td>
<td>dé</td>
<td>~ ěŋ</td>
<td>~ ěh</td>
<td>k próp</td>
<td>kánam</td>
<td>kim(ǐm)</td>
<td>mǒ</td>
</tr>
<tr>
<td>P</td>
<td>2D</td>
<td>gyát</td>
<td></td>
<td></td>
<td>k próp</td>
<td>kon</td>
<td>kiw(ǐw)</td>
<td>mǒ-l</td>
</tr>
<tr>
<td>S</td>
<td>1D</td>
<td>mǒ</td>
<td>dęŋ</td>
<td>déh</td>
<td>m próp</td>
<td>máną̄</td>
<td>bım</td>
<td>mǒ</td>
</tr>
<tr>
<td>I</td>
<td>1D</td>
<td>món</td>
<td>měn</td>
<td></td>
<td>m próp</td>
<td>máną̄</td>
<td>mům(ǐm)</td>
<td>mǒ-l</td>
</tr>
<tr>
<td>D</td>
<td>P</td>
<td>mán</td>
<td></td>
<td></td>
<td>m próp</td>
<td>mǒnów</td>
<td>biw</td>
<td>~ můw(ǐw)</td>
</tr>
</tbody>
</table>

The first person dual is cognate across all languages but Kiowa, and there only because Kiowa has entirely lost a distinctive first person dual. Like the plural the first person dual appears to be reconstructable with a velar. The vowel may be reasonably reconstructed as nasal, thus giving us a reconstructed *QV= for Proto-Kiowa-Tanoan. Similarly we can
reasonably reconstruct a voiced bilabial stop and a nasal vowel for the second person plural on the basis of all but the Tewa languages. The alternative forms of Southern Tiwa suggest that we should perhaps reconstruct the proclitic as *bY= rather than as *mY=.

All of the Kiowa-Tanoan languages show nasalization of voiced stops before nasal vowels in the pronominal proclitics, so it is merely a question of whether or not this applied at the Proto-Kiowa-Tanoan stage as well and whether it should be analyzed as a low level assimilation to the nasal environment or as a phonemic contrast in the proto-language. I will take the more generalizing perspective and reconstruct it as *bY= while allowing that it may have had an alternative pronunciation with a nasal stop in the ancestral language.

The Tiwa languages do present us with the same question as we have seen before regarding a proclitic-final consonant, with the same evidence as we have seen before. As in the first person singular, the Northern Tiwa languages seem to have analyzed the final /n/ seen in the singular as part of the proclitic since the inverse and plural number markers are added following this consonant (with an epenthetic vowel inserted). Indeed Picuris Tiwa has an additional syllable added even in the singular form. Southern Tiwa never presents us with a final /n/ in the dual, but there does appear to be quite a bit of variation and reanalysis going on. Among this variation, however, are monosyllabic forms with the number markers as codas, suggesting they have been added to a basically CV proclitic. However, it also appears that the dual and plural forms are merging in Southern Tiwa, which does obfuscate the issue. I will therefore stick with the reconstructed open-syllable forms *QY= and *bY= given above.
While the Tewa first person dual proclitic gæ̨ŋ = (RGT) / gę̈h = (AT) seems to be
cognate with the Tiwa and Towa forms (whether directly or indirectly via the
intransitive), the second person dual proclitic dæ̨ŋ = (RGT) / dę́h = (AT) is definitely not
cognate to the other languages. As in other paradigms, the second and third person dual
are homophonous, the third person having replaced the second person form. It should be
noted too that the dual proclitics of the intransitive-dative paradigm (gæ̨ŋ, dæ̨ŋ) are
identical with those of the intransitive paradigm (ga, da) but with the dative marker -
η= added and a (regular) vowel change of /a/ to /æ̨/ before /ŋ/. Indeed these forms
underscore what we have seen with the second person singular, first person plural, and
what we will also see with the third person plural: the intransitive-dative of Tewa is more
closely related to the intransitive paradigm than it seems to be to the intransitive-dative
paradigms of its sister languages.

14.3 Third Person Non-Singular D Arguments, Intransitive-Dative

Finally the third person non-singular proclitics seen in Table 14-4 show some
interesting developments.

Table 14-4: Intransitive-Dative 3NS Proclitics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>D</td>
<td>mé</td>
<td>dę̈ŋ</td>
<td>dę́ŋ</td>
<td>̓m</td>
<td>anan</td>
<td>im(îm)</td>
<td>i</td>
</tr>
<tr>
<td>I</td>
<td>3D</td>
<td>mën</td>
<td>dę̈ŋ</td>
<td>dę́ŋ</td>
<td>̓nm</td>
<td>anam</td>
<td>i-1</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>3I</td>
<td>bêt</td>
<td>dîŋ</td>
<td>dîŋ</td>
<td>̓m</td>
<td>im</td>
<td>im ~ im</td>
<td>e-1</td>
</tr>
<tr>
<td>I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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The Tiwa and Towa forms appear to be cognate and may represent the reflexes of the Proto-Kiowa-Tanoan proclitics. The Tewa forms seem to be based on the intransitive paradigm, as has been noted for many of the other dative proclitics, while the Kiowa third person dual and plural dative forms appear to be coming from a completely different direction.

The third person plural of Tiwa and Towa consist of a vocalic form with no onset or coda, at least not originally. There seems to be some merger with the inverse number S argument form in Southern Tiwa and Taos Northern Tiwa that introduces a coda in the singular. Picuris Tiwa shows an innovative /n/ coda on the singular proclitic, seemingly by reanalysis of the -n- as a singular marker, as in other forms above. The vowel is oral in both the Tiwa and Towa branches (nasalization in Tiwa is due to the coda nasal consonant in the singular and inverse), suggesting a reconstruction of the plural as *V=. Correspondingly the third person dual can be reconstructed as a nasal vowel form *Y=. Both Towa and the Tiwa languages have vowel-initial proclitics, with no coda in Towa and the usual issue of the final nasal in Tiwa alongside merger with the inverse form. The vowel is nasalized in all but Southern Tiwa, which appears to have undergone denasalization, as is common in that language.

As mentioned the Tewa third person plural and dual seems to be based on the intransitive paradigm. The intransitive-dative forms are identical to the intransitive correlates but with the dative marker -ŋ= added. Alternatively it is possible that the Tewa proclitics are cognate with the Towa and Tiwa forms, but with a /d/ added by either phonological motivation (see footnote 6 of chapter 0) or by analogical pressure, probably from the intransitive. Also, as already pointed out, the third person dual has extended to
second person dual, replacing the original second person form, as seen in other paradigms.

One anomaly in Tewa, however, is the Arizona Tewa third person plural dative proclitic dóˑ=. The form is odd within the paradigm, where all proclitics end in /ŋ/ or /h/ (the latter probably derived from the former, cf. chapter 6.2.3.4 and 6.3.2). It was already suggested in 0 above that it may originate as the intransitive third person inanimate plural proclitic. It may have developed here, however, in order to avoid homophony with the first person singular proclitic. Since the contrast between falling tone and high tone in Arizona Tewa seems to be less prominent than it is in Rio Grande Tewa, if it exists at all, both the first person singular and third person plural would be pronounced diŋ= in Arizona Tewa if the forms cognate with Rio Grande Tewa were maintained. Thus, third person plural must have been replaced to avoid confusion. An origin in an inanimate plural is strange, but the plural association may have been strong enough as this proclitic ceased to be used in the intransitive paradigm that it could be coopted for intransitive-dative use.

Finally the Kiowa third person dual and plural dative proclitics are strange both from a comparative perspective and from a language-internal perspective. For one, all non-singular S argument forms for these proclitics are homophonous: mé̂n= with the third person dual dative and bét= with the third person plural. This merger of numbers does not occur elsewhere in the proclitics. Moreover, these third person proclitics bear an initial bilabial stop, a feature typically associated with second person non-singular and
never with third person outside of these particular proclitics\textsuperscript{12} (in Kiowa or any other Kiowa-Tanoan language). Indeed, it may be that these third person forms do indeed originate as second person proclitics. We have already seen shared forms for the second and third person in the Tewa dual and suggestions of the Kiowa third person human plural originating from second person forms. It is not difficult to posit yet another shift.

If these non-singular third person proclitics do indeed derive from second person forms, there is still the question of motivation. Why did only these non-singular proclitics and not the third person singular forms undergo this replacement\textsuperscript{13}? If this third-second person relationship does exist, there is also the question of why there is not absolute homophony between the second and third person non-singular dative forms. One hypothesis comes from considering the vowels. In Tiwa and Towa, only the final consonant of the dative proclitics (or lack thereof) indexes the number of the S argument whereas in Kiowa it is more the vowel (plus maybe the final consonant) that marks this information. Assuming Kiowa is the innovator here, it may be that the third person non-singular forms that derive from second person have been conservative in retaining the original vowel of the proclitic, which is why non-singular S arguments are all marked by the same form (but see section 14.5). In these “person-shifted” proclitics, only the final consonant indexes the number of the S argument as is historically the case in Kiowa-

\textsuperscript{12} Watkins explains the /m/ in the third person plural reflexive ęm= as deriving from the same bilabial stop as is found in these dative forms. However, this reflexive proclitic is anomalous in the position of the bilabial as the coda. Based on Watkins’ analysis of proclitic constituency, it should occur as the onset. One could appeal to metathesis, but this only ever brings a coda consonant to onset position, never vice versa. Thus, relationship between the bilabial here and the one in the intransitive-dative forms is far from transparent.

\textsuperscript{13} It could be noted that the third person singular dative proclitic (with a singular S argument) is homophonous with the intransitive third person human plural proclitic, which I suggested above could originate from the original intransitive second person singular. It would be an indirect line of evidence and may be a stretch in the first place, but could help to explain some irregularities, e.g. the lack of nasalization on the dative form.
Tanoan, while the rest of the intransitive-dative paradigm has undergone the innovation of marking S argument number through the vowel. Further consideration of this issue is needed.

### 14.4 Summary of the Intransitive-Dative Reconstruction

Table 14-5 summarizes the schematic form of that part of the intransitive-dative proclitics that indexes the person and number of the dative argument.

Table 14-5: Schematic Reconstruction, Intransitive-Dative Paradigm

<table>
<thead>
<tr>
<th>S</th>
<th>( *\text{V} )</th>
<th>( *\text{QV} )</th>
<th>( *\text{QV} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>( *\text{qV} )</td>
<td>( *\text{bV} )</td>
<td>( *\text{bV} )</td>
</tr>
<tr>
<td>2</td>
<td>( *\text{V} )</td>
<td>( *\text{V} )</td>
<td>( *\text{V} )</td>
</tr>
</tbody>
</table>

The careful reader may have noted two features of the reconstructed forms as we’ve gone along. First, the dual appears to be identical to the plural except for nasalization, much as is found in the intransitive paradigm. Secondly, the intransitive-dative looks to be closely related to the basic intransitive in form except for nasalization in the singular, the overt third person singular form, and the initial \( *\text{K} \) in the second person singular and first person non-singular. These relationships will be clearer in chapter 19.2 with the reconstruction of the actual segmental realization of the proclitics.

### 14.5 Number-marking Coda Consonants, Intransitive-Dative

Having established a hypothesis of the dative portion of the proclitics, next there is the issue of the S argument number markers. Table 14-6 summarizes the regular coding in the modern languages.
Table 14-6: Number Marking Coda Increments

<table>
<thead>
<tr>
<th>S</th>
<th>Kiowa</th>
<th>RGT</th>
<th>AT</th>
<th>Taos</th>
<th>Pic</th>
<th>ST</th>
<th>Towa</th>
</tr>
</thead>
<tbody>
<tr>
<td>singular/A/basic</td>
<td>Ø</td>
<td>ŋ</td>
<td>ŋ</td>
<td>Ø</td>
<td>Ø ~ n</td>
<td>Ø ~ n</td>
<td>Ø</td>
</tr>
<tr>
<td>inverse</td>
<td>ɔ(-t)</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>l</td>
</tr>
<tr>
<td>dual</td>
<td>e(-t)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>inanimate plural</td>
<td>(i)a(-t)</td>
<td></td>
<td></td>
<td>w</td>
<td>V[round]</td>
<td>w</td>
<td></td>
</tr>
</tbody>
</table>

The darkened portions indicate those number categories that are not distinctly marked in the given language. In Tiwa the dual is indexed in the same way as the inverse or plural, depending on the noun class of the indexed referent. In Towa the inanimate plural is indexed as basic number, i.e. as singular. Inverse and dual are quite regularly marked by -l- in Towa in the dative paradigms\(^\text{14}\). In the Tiwa languages, plural is always marked by a proclitic-final -w=, which is combined with the preceding vowel as a rounded vowel in Picuris Tiwa. Inverse is always indexed by a final -m=. The singular varies between being unmarked and being marked by a final -n= in Picuris Tiwa and Southern Tiwa, a reanalysis already discussed above. The Tewa languages make no number distinctions at all in the proclitics for S arguments, the dative proclitics almost always being marked with a final nasal consonant. In Kiowa the non-singular numbers regularly take a final stop -d= realized as /t/ with an oral vowel or as /n/ with a nasal vowel. This final consonant fails to appear only with a first person dative—where it may have metathesized to onset position, as described above—or in the inverse when combined with second or third person singular. On top of this, there are regular patterns in the vowel of the proclitic: dual is marked by /e/, inverse by /ɔ/, and plural by /a/ (or /ia/ under

\(^\text{14}\) More accurately, dual and inverse are marked by the L-effect, an alternation in the initial consonant of the verb stem and/or an incorporated noun standing between the pronominal proclitic and the verb stem (cf. chapter 6.7.3.4.1). While the output of the L-effect suggests it derives from a fusion of a lateral consonant /l/ plus the following consonant, I have yet to see evidence that this inverse-marking lateral is ever conceptualized or articulated by speakers as a separate segment.
Watkins’ analysis, in order to explain the glide onset which occurs except when following a labial consonant or when the vowel is initial with the third person singular dative). The only area where this vowel-number correlation does not occur is with the third person non-singular dative forms where the vowel is /e/ throughout. There is no single vowel regularly correlated with singular number.

The radically divergent number-marking forms in each language render reconstruction exceedingly difficult. Perhaps the one certainty we can have is to reconstruct singular number as unmarked, i.e. to posit *-Ø as marker of singular. It is also not a stretch to suggest that Towa -l- and Kiowa -d=, and perhaps Tewa -ŋ= (< /n/), are cognate. Such a reconstructed morpheme—let's call it *D for now—would have marked a non-singular number, but which non-singular number is less clear at first. There will be reason in the following paradigms to associate it with inanimate plural. Functionally the Tiwa equivalent to this inanimate plural would be -w=, but it is far less clear whether this is formally cognate as well. The distribution of Tiwa -w= and the -l- and -d= of Towa and Kiowa is comparable enough to suggest cognate status even if this particular set is not yet a well-established sound correspondence elsewhere (cf. chapter 10.2.4 on the challenges of final alveolar consonants in the family). The only sound change to make sense of this would be */D/ > /w/ in Tiwa. Phonetically the */D/ may then represent either */l/ (there is reason to think this may indeed be the reflex, cf. chapter 19.1.1.4) or */d/, which subsequently lenited to */l/ and then to /w/ in Tiwa. A change from */w/ to the /l/ of Towa and the /d/ of Kiowa is far less phonetically plausible (Ian Maddieson, personal communication).
The Towa -l- increment also corresponds in usage to the Tiwa inverse -m= increment. Even though the -l- is associated primarily with inanimate plural in the transitive paradigm (see chapter 15.2), here in the intransitive-dative and in the transitive-dative, it is solely identifiable with the inverse (and dual). In Tiwa, the inverse -m= only exists as regular morpheme in the dative paradigms. We already saw in chapter 6.7 that the widespread coda consonant simplification and deletion in Towa did create some instances of coda correspondences between Tiwa /m/ and Towa /l/. The correspondence is /ŋ/ in Tewa (which appears to derive from /n/ historically), so we could posit a change in Towa of *m > *n > l (Ø in many contexts). Thus it could very well be the case that the inanimate plural and the inverse that are formally distinct in Tiwa have merged in Towa, thus accounting for the two functions of the -l- increment. We will also see below that the polysemous Kiowa -d=, which also usually accompanies the inverse-marking vowel, may also be cognate. This could also explain the general non-singular use of the Kiowa increment -d= to all non-singular forms and the loss of number contrasts that led to the reanalysis of coda -ŋ= as a dative marker in Tewa. From this we would reconstruct the inverse marker as *m in Proto-Kiowa-Tanoan, although it does not match the development of proposed stem-final */m/ as discussed in chapter 10.2.3.

The proposed neutralization in coda consonants in at least two, maybe three, of the branches means we only have the Tiwa branch on which to base the reconstructed form. It may actually have originated as an oral obstruent *b or perhaps even *p. Justification for the latter could come from the "inverse increment" we shall encounter in the transitive paradigm (and transitive-dative paradigm), which reconstructs to Proto-Kiowa-Tanoan as *-pV=. That is, there is another bilabial-initial element in the language
that serves to mark inverse number. It is possible the two forms *pV and *m are related. Word-final vowel elision is certainly attested in Tiwa (cf. chapter 6.4 and 6.6), thus a chain from *pV > *p > m is not impossible. Justification for the voicing, although not the nasalization, of */p/ in coda position is provided by the regular development of coda voiceless stops discussed in chapter 10.2. Given the uncertainty of this account, however, I will leave the reconstruction of the inverse marker in the dative as *m for the present.

It is fully possible that the -l- of Towa and the -d= of Kiowa (and maybe the -ŋ= of Tewa) are completely unrelated to either the -m= or -w= of Tiwa, or that they are related to only one or the other of them. I find it interesting, for instance, that we find this regularly occurring proclitic-final labial glide form -w= indexing inanimate plural as well as an intransitive proclitic composed of a back rounded vowel u= that indexes inanimate plural. The account in chapter 13.4 suggests the intransitive proclitic may be derived from late Proto-Tiwa *Vw=15 (where the /w/ is the plural increment cognate with the alveolar found in the other languages). However, it could be the case that the Tiwa intransitive inanimate plural proclitic is simply reconstructable as *u= and is not even cognate with the inanimate plural proclitics found in the other languages. The productive inanimate plural increment -w= found in the dative paradigms and part of the transitive paradigm may then be derived by compounding -u= to the end of the clitics, reanalyzed as a coda -w= since it normally follows a vowel16. This would mean that the Tiwa -w= is

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15 Vowel correspondences discussed in chapter 19.1.2 would lead to the Proto-Tiwa intransitive proclitic as ultimately deriving from *aw=, if it is related to the inanimate plural proclitics of the other languages at all.
16 There are some consonant-final (dual) proclitics in the Northern Tiwa languages where an epenthetic vowel is inserted between the consonant and the -w=, e.g. ṣpẹ́n + u/w > ṣpẹ́n̩w̩, not **ṣpẹ́n̩u. This could suggest that the plural increment really does originate as a consonant. On the other hand, this could just as well be a late innovation within the Northern Tiwa branch that applied only after the u= had been reanalyzed as -w=. I do in fact argue that this final /n/ found in such dual forms is a Tiwa-internal innovation, so these forms are not the most reliable indicators of conservativeness.
not at all related to the alveolar consonant found in the other branches. The distribution of
-l- in Towa and -d= in Kiowa leads me to maintain a relationship for now, but this could
very well turn out to be wrong.

The final grammatical number to take into account is the dual. Unfortunately the
only language to distinctively mark the dual in the dative paradigms is Kiowa. Kiowa
marks the number of the non-dative argument in the dative paradigms primarily through
the vowel quality. Such vocalic marking is not found in any of the other three branches,
suggesting either an innovation within Kiowa or suggesting that the Kiowa system is the
most conservative (see chapter 19.1.2.6). The latter only works, however, if we either
assume Kiowa was the first language to break off from the family, given the above facts
about the coda consonants. As I suggest in chapter 0, such a relationship is not yet clear
from data to date, even if it has not been ruled out. This does mean that we are at a
momentary loss for evidence of dual marking in the dative proclitics.

Both Towa and Kiowa take the non-singular marking -l- and -d= respectively in
the dual. In Kiowa this seems at first motivated by the generic non-singular reading of the
-d= increment while in Towa it seems motivated by the tendency to classify dual number
as inverse in certain constructions. We also find certain dual forms in other Towa
paradigms with an accompanying -l-. Remember also that we find a consonant associated
with dual forms in the Tiwa languages: /n/. While this consonant never marks an
intransitive-dative S argument dual, its strange distribution in Tiwa and Towa does
suggest it may indeed be related. In this non-dative usage, the dual marker always
accompanies the dual nasalization. This means that the consonant could be */n/ or it
could be */d/, only being nasalized by the nasal environment. There will be suggestions

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of the latter, but it could also be the former. In either case, this dual marker seems to have merged with the -l- in Towa and the -d= in Kiowa (and the -ŋ= in Tewa). We will find more discussion of the number markers in chapter 19.1.1.4 and 19.1.2.6.

Table 14-7 summarizes the slightly schematic forms of the reconstructed nondative argument number marking which occur in the dative paradigm.

Table 14-7: Reconstructed Number-Marking Coda Morphemes

<table>
<thead>
<tr>
<th>S</th>
<th>D</th>
<th>P</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Ø</td>
<td>*d/*ŋ</td>
<td>*D</td>
<td>*m</td>
</tr>
</tbody>
</table>

Remember that these morphemes never occur by themselves but are always bound to the right edge of the dative pronominal proclitics. They also occur with the transitive-dative pronominals discussed in chapters 0 and 18.2, but there is no formal particularity with those proclitics that will necessitate further discussion of these number markers in those sections.
15 Transitive Paradigm: Historical Reorganization

The transitive paradigm is larger and more complex than any of the above paradigms, so it will have to be tackled in a more piecemeal fashion. Like the intransitive-dative series in the previous chapter, the transitive prototypically involves two arguments. In the intransitive-dative, the dative referent is effectively always more informationally important than the S argument by the nature of the constructions in which it occurs. In transitive events, on the other hand, both semantic argument roles have a greater potential to be filled with an informationally prominent referent. There are certainly strong tendencies for more prominent referents to fall in the agentive role than in the more patientive role, but there is still a frequent need to be able to discuss a prominent referent as affected by a transitive event. These conflicting needs and tendencies have heavily shaped the transitive paradigm, including how the transitive proclitics relate to forms in the other paradigms.

We will begin this comparative reconstruction by analyzing the proclitics that index a third person O argument before taking on those forms that involve a patientive speech act participant in chapter 0. Dealing with speech act participants involves addressing voice and valence and the person-animacy hierarchy, which has led to different effects in the different languages, as the reader will have already noted in chapter 0. Those that index a third person O argument, while the larger set, are morphosyntactically more straightforward (but they do show us some very interesting developments in the language family).
15.1 Singular Third Person O arguments, Transitive

15.1.1 Transitive Xs>3S Proclitics

Table 15-1 lays out the transitive pronominal proclitics that index a third person singular (or basic number) O argument combined with a singular A argument.

Table 15-1: Transitive Xs>3S Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td></td>
<td>gya</td>
<td>dó</td>
<td>dó</td>
<td>ti</td>
<td>ti</td>
<td>ti</td>
<td>ta</td>
</tr>
<tr>
<td>2S</td>
<td>3S</td>
<td>a</td>
<td>nũ̍́ / nũ̍</td>
<td>nũ̍́</td>
<td>ɔ</td>
<td>a</td>
<td>a</td>
<td>q ~ ɑ</td>
</tr>
<tr>
<td>3S</td>
<td></td>
<td>Ø</td>
<td>i</td>
<td>3S&gt;3</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>ɑ̋</td>
<td>ɔ́</td>
<td>ɔ́</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

With the exception of the 3s>3 form of Arizona Tewa (with unspecified number for the O argument), all of these pronominals consist of open syllables. Indeed we’ll see throughout this portion of the paradigm that open syllables prevail, which can be loosely correlated with the fact that the third person singular O argument is unmarked, as we saw in the number markers of the intransitive-dative series. The rough schematic reconstruction of these forms is probably already clear at this point.

The first person singular in all languages consists of a CV form with an initial stop. The stop is alveolar in all but Kiowa, but the velar of Kiowa appears to derive simply by assimilation to the vowel under the regular dental-velar switch. It is therefore not contentious to reconstruct the proclitic as *TV=, leaving the voicing of the initial stop unspecified for now. We will see in chapter 19.1.2 that the vowel correspondence between the Tiwa languages and the other four branches is problematic. In fact, the Tiwa
1s>3s proclitics appear not even to be cognate with the proclitics of the other languages, although this does not affect the schematic reconstruction given.

The second person singular consists solely of a vowel in all but the Tewa languages. This vowel is oral in all but Towa, which shows the same oral ~ nasal variation we saw in the intransitive second person singular. Note that the vowel qualities in the Tiwa languages and Towa are exactly the same as those found in the intransitive second person singular, except for the contrasting nasalization in Taos Tiwa (i.e. $2s_{itr}$ is $\bar{a}=$ in Taos Tiwa). The Kiowa second person proclitic too may be the expected quality of the intransitive second person singular based on the discussion and reconstruction of chapter 0. Based on these forms, it therefore seems that we can reconstruct the transitive $2s>3s$ proclitic as a vowel. Moreover, it appears that this reconstructed proclitic could be homophonous with the reconstructed intransitive second person singular proclitic, that is $*V=\bar{a}$. We will see in chapter 0 below that there is another transitive proclitic $\bar{a}=$ in Taos Tiwa that is homophonous with the intransitive proclitic, namely the $1>2s$ form. I suggested in chapter 13.3 above that the intransitive proclitic derives from this $1>2s$ form while the original intransitive second person singular is reflected in this transitive $2s>3s$ form.

The Tewa languages once again present us with a challenge, the basic transitive $2s>3s$ forms $n\tilde{q}=$ (RGT) / $n\tilde{q}=$ (AT) and their short-voweled imperative counterparts $n\tilde{q}=$ looking quite different than any other second person form. The closest pronominal form phonologically within the language is the intransitive third person singular, but I see no clear semantic chain of development to relate the two. In comparative perspective, one could conceivably relate this proclitic to the transitive $2s>3p$ paradigm, which does not
distinctly exist in Tewa, but which does bear a coda plural number marker in the other languages: -d= in Kiowa, -l- in Towa, and -w= in Tiwa. Assuming an original 2s>3s form **ó= (identical with the intransitive second person singular) plus the number marking increment of Tewa -ŋ= (< Pre-Proto-Tewa */n/) and given metathesis, we could derive a form nq=. Significantly, the Tewa proclitic in question is also used for 2s>3p function. However, other possibly metathesized forms with the plural number marker reflect that morpheme as /d/, not as /n/. Also, all 2s>3p proclitics in the other Kiowa-Tanoan languages have an initial velar, no reflex of which is found in this Tewa form.

One other (remote) possibility to raise is that this proclitic derives from the fusion of some /n/-initial morpheme with the expected vocalic 2s>3s form cognate with the other languages, which would be expected to be *ó=, as noted. The only semantically relevant /n/-initial morpheme I can think of that could stand before the proclitic is the proximal deictic demonstrative ṉ̀(P)¹, which is commonly used for third person reference. It could thus be that the vocalic proclitic was felt to be too ambiguous with other forms (e.g. the 2>3s form ó=), leading the deictic to be used to disambiguate until eventually the deictic-proclitic sequence was phonologically reduced and reanalyzed as a single morpheme. I find this a dubious scenario, but grant the possibility.

It could of course be that the Tewa languages in fact conserve some original Proto-Kiowa-Tanoan proclitic indexing 2s>3s that was replaced by a derivative of the intransitive proclitic in the other branches. Its internal structure would therefore predate the proto-language. However, there is no clear line of development for this possibility given what seems to be the internal branching of the family tree (cf. chapter 0). My own

¹ In attributive or referential function in the modern Tewa languages, the deictic would always bear the number-marking relativizer =ŋ / =ŋ.
feeling is that the Tewa form derives by one of the processes mentioned in the preceding paragraph or one similar and thus would not reconstruct a /n/-initial transitive $2s>3s$ form to Proto-Kiowa-Tanoan. However, I will have to remain non-committal as to how the Tewa forms originated for the present$^2$.

The Tewa languages are also distinctive from the other languages and from each other in the third person singular, given again in (1).

(1) Transitive $3s>3s$ Proclitics

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>O</th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PT</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>3s</td>
<td>Ø</td>
<td>i</td>
<td>3s&gt;3</td>
<td></td>
<td>mάŋ</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
</tr>
<tr>
<td>3</td>
<td>Ø</td>
<td>9</td>
<td>9</td>
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</tr>
</tbody>
</table>

Based on Kiowa, Towa, and Tiwa, we can reconstruct the transitive $3s>3s$ form as null $^*Ø=,$ just like the intransitive third person singular. From a typological perspective, this is not surprising given the unmarked status of third person singular, which lends support to the hypothesis that Tewa is here the innovator again. There are two caveats to note here regarding Tewa. The first is that there are two distinct forms in each Tewa language for indexing third person acting on third person. The second is that each of the two proclitics only specifies the number of one of the arguments: the $i=$(RGT) / $mάŋ=$(AT) forms index $3s>3$, with the O argument unspecified for number, while the $9=$ forms index $3>3s$, with the A argument unspecified for number. Usage and development of these contrasting proclitics will be discussed with voice in chapter 0.

$^2$ Being uncertain as to the general family-internal origin of the proclitic, it is also difficult to determine with certainty the development of the differing imperative and basic transitive forms. The imperative may be the more conservative, as in the intransitive, with the vowel length of the basic transitive deriving by some other process. Or, the short vowel of the imperative may be derived from the basic transitive due to prosodic factors in the imperative construction.
The Rio Grande Tewa 3s>3 proclitic i= is homophonous with the reflexive third person singular in both Tewa languages, and we find by sound correspondences that it seems to derive from the transitive 3s>3I proclitic. It is thus cognate to inverse marking forms in the other languages to be discussed below. It may have grammaticalized as a general third person singular A argument marker as the noun class number marking within the pronominal proclitics broke down. The Arizona Tewa 3s>3 proclitic màn+= is less straightforward. It is the one third person proclitic that begins with a bilabial in Tewa (but see the Kiowa third person non-singular intransitive-dative proclitics in chapter 14.3). Notably it is homophonous with the transitive-dative 2s>X>3s proclitic found in both Tewa languages. It therefore seems to be a form participating in the shift of forms between second and third person. Even though second person tends to be ranked higher than third in Kiowa-Tanoan languages, dative arguments are also often ranked higher than A or O arguments. Thus it is possible that the third person singular being in dative position in the 2s>X>3s configuration could have provided enough incentive for this pronominal to be reinterpreted as a transitive 3s>3 indexation marker, even if the D to A argument shift is a little strange.

The Tewa 3>3s indexation forms ó= may also actually derive from a second person proclitic related to the imperative monovalent second person singular (i.e. to the reconstructed 2s.itr and 2s>3s transitive). No other Kiowa-Tanoan language has any transitive proclitics of a similar function, thus such a form must be either a feature preserved only in Tewa or be a Tewa-internal innovation. There are suggestions, however, that it may have developed from a second person form. Aside from the similarity to the imperative proclitic, there is also the homophony between transitive
second and third person non-singular O argument proclitics (e.g. RGT ovâŋ = 2s/3>3D, ovê = 2s/3>3A), which bear an initial /o/. The shift from second to third person may also be supported by comparative data. If the second person singular forms and the third person human plural of Kiowa are related, as was suggested in chapter 13.4, it could suggest a functional shift at some earlier stage of the languages leading to the use of second person singular forms for third person referents. I can think of no other obvious source of the Tewa transitive 3>3S proclitics.

15.1.2 Transitive Xp>3s Proclitics

Having developed an analysis of the singular transitive proclitics, next we have to deal with those that index a non-singular A argument and a third person singular O argument. Table 15-2 presents those pronominals with a plural subject.

Table 15-2: Transitive Xp>3s Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pl</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1P</td>
<td>3S</td>
<td>ĕ`</td>
<td>ĕ`</td>
<td>ĕ`</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>se</td>
</tr>
<tr>
<td>2P</td>
<td></td>
<td>bá`</td>
<td>bîq</td>
<td>bîq</td>
<td>më</td>
<td>më</td>
<td>më</td>
<td>bå</td>
</tr>
<tr>
<td>3H</td>
<td></td>
<td>dê`</td>
<td>dîq</td>
<td>dî`</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
</tr>
<tr>
<td>3I</td>
<td></td>
<td>ê`</td>
<td>dîq</td>
<td>dî`</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
</tr>
</tbody>
</table>

The reader may note that the situation is quite similar to what is found in the intransitive paradigm: the first and third person plural forms are vowel-initial and identical to each other in most languages, but with a couple of anomalies, and the second person plural shows an initial bilabial stop in all but Arizona Tewa.

The first person plural is homophonous with the third person inverse/plural in Kiowa and the Tiwa languages, but the two persons differ in Tewa and Towa in that the
latter languages possess an onset consonant. However, they add the consonant differently: Towa adds /s/ in the first person plural while Tewa adds /d/ in the third person plural. This distribution suggests that Kiowa and Tiwa are the conservative languages here. The transitive \(1P>3S\) and \(3I>3S\) proclitics should therefore both be reconstructed as identical \(*V=\).

Towa shows an initial /s/ in first person non-singular A argument forms throughout the transitive and transitive-dative paradigms where the other languages lack the cognate velar stops (cf. chapter 10.2.2 as well as chapter 19.1.1). This suggests that Towa has regularized its paradigm with the effect of formally distinguishing first and third person A arguments. We will see below a part of the transitive paradigm where Tiwa shows the cognate onset /k/ in first person plural form, which could suggest Towa is being conservative in having this initial consonant here. If so, however, this would mean that the other three branches have a shared innovation or that they all happen to have lost the initial consonant in the first person plural, which seems too coincidental.

Just like in the intransitive and intransitive-dative, the Tewa third person plural bears an initial /d/ where the other languages are vowel-initial. We have already seen that comparative evidence does not seem to bear out reconstructing an initial consonant for third person plural in Proto-Kiowa-Tanoan, thus the /d/ in the transitive paradigm undoubtedly stems from the same source as does the /d/ in the intransitive. The Tewa forms \(dê=\) (RGT) / \(dî=\) (AT) actually index \(3P>3\), meaning the O argument is unspecified for number. Just as the Rio Grande Tewa \(3S>3\) proclitic \(i=\) was argued above to derive from a pronominal indexing a third person inverse O argument, the \(3P>3\) proclitic could derive from a form with a non-singular O argument and the /d/ could
reflect a number marker in coda position that then metathesized to the onset\(^3\). Remember
that such metathesis was one suggested source for the initial /d/ in the intransitive as well.
Alternatively the /d/ may originate just by analogy with other third person forms, as
discussed in chapter 13.

The second person plural transitive proclitics repeated in (2) are more
straightforward.

(2) Transitive \(2P > 3s\) Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2P)</td>
<td>(3s)</td>
<td>bá`</td>
<td>bîŋ</td>
<td>obîŋ</td>
<td>mǒ</td>
<td>mą</td>
<td>má</td>
<td>bá</td>
</tr>
</tbody>
</table>

The Kiowa, Towa, and Tiwa forms are all CV forms that begin with a voiced stop. These
too are identical with the intransitive second person plural proclitics except for tone and
there is little reason not to similarly reconstruct the transitive form as *bV=,
homophonous or nearly homophonous with the intransitive counterpart.

The Tewa languages are once again a divergent case. Rio Grande Tewa does
show an initial bilabial stop, but also shows a coda consonant /ŋ/. It can also be noticed
that this Tewa form is the same as the second person plural proclitic of the reflexive and
of the intransitive in at least one dialect, but with the coda nasal added. Arizona Tewa
shows essentially the same form, but with a vowel /o/ preceding the bilabial. Like the
other Tewa transitive proclitics that index a non-singular A argument, no number
distinctions are actually made for the O argument. Therefore it is seems like that the /bi/
portion of the Tewa second person plural proclitic is cognate with the corresponding
pronominals in the other languages while the final /ŋ/ descends from a marker of non-

\(^3\) Indeed, even ignoring this issue of the initial /d/ in third person plural, all of the Tewa transitive \(XNS>3\)
proclitics may originate from non-singular O argument forms, e.g. \(XNS>3f\). It is hard to tell at this juncture.
singular number of the O-argument (perhaps by some kind of analogy with the dative proclitics which also show a coda /ŋ/).

The initial /o/ of the Arizona Tewa form also appears to be an analogical extension. Elsewhere in the Arizona Tewa transitive paradigm, there are second person forms that include a labial-initial increment -béŋ= or -béˑ=, which always has some phonological material preceding it, either o- (obéŋ = 3>3D, obé = 3>3P), mq- (mqbéŋ = 2>3D, mqbéˑ = 2>3P), or wo- (wobéŋ = X>2D, wobé = X>2P). Some reflex of the historical intransitive second person singular proclitic ó= appears to have been added to this second person plural either to make it phonologically comparable to these other proclitics or to reaffiliate the form with a second person argument. While the table above makes it look like an Arizona Tewa-specific innovation, it may have actually applied at the Proto-Tewa stage. I have occasionally heard the Rio Grande Tewa pronominal proclitic bîŋ= pronounced as ovîŋ= under unknown conditions, but in contexts that make it clear it is the more archaic form. Thus it may be that Proto-Tewa had a transitive 2P>3 proclitic *obîŋ= which descends without change in Arizona Tewa but has largely lost the initial /o/ in Rio Grande Tewa, bringing the originally initial second person /b/ back to proclitic-onset position.

Finally in Table 15-2 above there is the Kiowa third person human plural indexation form á'= . It is identical to the intransitive human plural proclitic á= except for tone. It has already been pointed out in earlier sections that none of the other languages has a functionally comparable third person human plural category, and so there might not be any immediately obvious cognate candidates. But, in chapter 13.4 I put forth the

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4 Rio Grande Tewa only shows o- or wo- before its cognate labial-initial increments -věŋ= and -vê=.
possibility that the intransitive human plural might be related to the intransitive second person singular. This hypothesis may be followed here in the transitive as well, in which case the cognates in Tiwa and Towa would be the 2s>3s proclitics and, perhaps more striking, in Tewa the cognates would be the 3>3s proclitic ọ=', as discussed above. Note too that the Kiowa transitive 2s>3s proclitic is also the same as 3t>3s except for tone, implying that the second person and third person human plural have fully diverged, if there is any historical connection at all.

Even if the form is not cognate with second person proclitics, there is the possibility of a connection with the Tewa 3>3s pronominal: the unspecified number of the A argument in the latter may have developed into the human plural of Kiowa, or vice versa. Assuming any validity in the proposed origin from second person forms, I would conjecture a development from second person singular to unspecified (third person) argument, to third person human plural in Kiowa. Lacking evidence to support such a change, I see no motivation for a direct shift from second person singular to third person plural.

15.1.3 Transitive Xd>3S Proclitics

Table 15-3 gives the last set of transitive proclitics with a third person singular O argument: those with a dual number A argument.

Table 15-3: Transitive Xd>3S Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pl</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1D</td>
<td>3s</td>
<td>é'</td>
<td>ẹ̀ŋ</td>
<td>ọ̀ŋ</td>
<td>ọ̀n</td>
<td>ọ̀n</td>
<td>ọ̀n</td>
<td>ọ̀s̀q</td>
</tr>
<tr>
<td>2D</td>
<td></td>
<td>má'</td>
<td>đẹ̀ŋ</td>
<td>ọ̀ẹ̀ŋ</td>
<td>ọ̀n</td>
<td>ọ̀n</td>
<td>ọ̀n</td>
<td>ọ̀m̀q</td>
</tr>
<tr>
<td>3D</td>
<td></td>
<td>é'</td>
<td>ẹ̀ŋ 2</td>
<td>đẹ̀ŋ 2</td>
<td>m̀ẹ̀n</td>
<td>m̀ẹ̀n</td>
<td>m̀ẹ̀n</td>
<td>m̀q</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3D&gt;3</td>
<td>3D&gt;3</td>
<td>3n</td>
<td>3n</td>
<td>3n</td>
<td>3q</td>
</tr>
</tbody>
</table>
Just as we saw in the plural proclitics above, the first and third person dual forms show identity, or at least similarity. Only in Tiwa is there full homophony between the first and third person proclitics. In Kiowa we have the usual replacement of the first person dual with the first person plural form (but note that the third person dual \( \tilde{q} = \) and first person non-singular \( \tilde{e} = \) are the same except for nasalization). In Tewa and Towa we see the same kind of initial consonant distribution as was seen in the plural: the first person dual has an initial /s/ in Towa while the third person dual has an initial /d/ in Tewa. Even with these added consonants, the syllabic nucleus is consistent between these first and third person pronominals. The second person dual proclitics are consistently /m/-initial forms that show a syllable nucleus homophonous with, or at least similar to, the other two forms. Tewa shows the usual exception of having a shared form between the second and third person dual.

Under the same lines of argument as given above, the \( 1D>3S \) and \( 3D>3S \) can be reconstructed identically as \( *\tilde{V} = \) and the \( 2D>3S \) as \( *b\tilde{V} = \). For the latter, we can use the same reasoning as was given with the second person dual in the intransitive-dative to reconstruct an initial */b/ rather than an initial */m/. Or rather, we can ultimately reconstruct the oral stop, but hypothesize that even at the Proto-Kiowa-Tanoan stage, there may have already been a */b ~ m/ alternation before a nasal vowel. In the Tewa languages, the \( 3D>3 \) proclitic form has replaced the original \( 2D>3 \) form. Also, since these Tewa proclitics leave the number of the O argument unspecified, their forms could show influence from original non-singular O argument proclitic forms. This may help to explain the final /ŋ/ and possibly the initial /d/ of the \( 2/3D>3 \) form. The initial /s/ of the
Towa \(1D>3s\) proclitic \(sq=\), as in the plural \(se=\), appears to be an analogical extension from other first person non-singular proclitics.

### 15.1.4 Summary of the Transitive \(X>3s\) Reconstruction

Table 15-4 provides a summary of the reconstruction of the transitive pronominal proclitic forms that index a third person singular (or basic number) \(O\) argument.

Table 15-4: Schematic Reconstruction, Transitive \(X>3s\) Paradigm

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>*TV</td>
<td>*(V_1)</td>
<td>*(V_1)</td>
</tr>
<tr>
<td>2</td>
<td>*V</td>
<td>*(bV)</td>
<td>*(bV)</td>
</tr>
<tr>
<td>3</td>
<td>*Ø</td>
<td>*(V_1)</td>
<td>*(V_1)</td>
</tr>
</tbody>
</table>

The reader will note certain schematic similarities with the other paradigms presented above. In particular all but the first person singular proclitic seems to be identical with the reconstructed intransitive paradigm while the non-singular forms are quite similar to what is seen in the reconstructed intransitive-dative paradigm. We will see how far these similarities extend in chapter 19.2 with the formal reconstruction.

### 15.2 Inanimate Plural Third Person \(O\) Arguments, Transitive

The rest of the pronominal proclitics indexing (non-singular) third person arguments are more complex in their development. We will therefore next take on what seems to be the simplest of this complexity, the forms indexing a third person inanimate plural \(O\) argument.

#### 15.2.1 Transitive \(Xs>3p\) Proclitics

Table 15-5 shows those pronominal proclitics which index a singular \(A\) argument and a third person plural inanimate \(O\) argument. Remember that the Tewa languages use
the same pronominal forms for third person inanimate plural O arguments as they do for third person singular arguments. The Tewa forms have therefore been omitted in this table since they were addressed in section 15.1 above.

Table 15-5: Transitive $X_S>3P$ Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>Ki</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>3P</td>
<td>gyat</td>
<td>ɔ</td>
<td>ta</td>
<td>te</td>
<td>ti-l</td>
</tr>
<tr>
<td>2S</td>
<td></td>
<td>bat</td>
<td>ku</td>
<td>ko</td>
<td>ku</td>
<td>ki-l</td>
</tr>
<tr>
<td>3S</td>
<td></td>
<td>gya</td>
<td>u</td>
<td>o</td>
<td>u</td>
<td>i-l</td>
</tr>
</tbody>
</table>

The reader will recall that this part of the Towa transitive paradigm is also used for the reflexive and will be seen again in chapter 0, although it is largely not directly cognate with the reflexive pronominals of the other languages. The first person singular form appears to be cognate in all but Taos Tiwa, beginning with an obstruent in all of the other languages. The Kiowa /g/ likely results simply from dental-velar switch before the Kiowa vowel /(i)a/ and thus probably derives from a /d/ reflex in Kiowa cognate with the alveolar stops of the other languages. The second person is comparable between the Tiwa and Towa languages, showing an initial velar in both branches. The Kiowa second person form appears to be unrelated. The same seems to be the case in the third person singular where Kiowa shows an initial stop not found in Tiwa or Towa. Note too that the Kiowa and Towa proclitics have a final alveolar consonant not seen in Tiwa, at least not in the first and second person.

There will be little dispute in reconstructing the first person singular proclitic form as at least $^{*}TV=*$, with an initial alveolar stop (unspecified for voicing for the moment). Correspondences among the vowels (or lack thereof) will be addressed in chapter 19.1.2. These vowel correspondences are important, however, in attempting to
determine whether or not a coda consonant should be reconstructed. We will see that
many of these plural O argument forms appear to be quite similar to the $X^{>3s}$
pronominals of section 15.1 above except with a coda consonant added, although this is
not as clear with the singular A argument forms. I will therefore suggest the
reconstruction fully as $^{*}\text{TV-D}=$, which will be justified as the argument progresses, but
will be most apparent once the formal sound correspondences are addressed in chapter 0.
The Tiwa languages will turn out to be irregular only in lacking a reflex of the coda in the
$I^{s}\geq>3p$ though.

One issue in the first person that can be addressed now is the divergent Taos Tiwa
proclitic, which lacks any consonants (although the vowel correspondence happens to fit
according to what we find elsewhere among the pronominal proclitics). While anomalous
when compared with the other languages in this paradigm, the reader may recognize that
the Taos Tiwa $a=I^{s}\geq>3s$ proclitic is homophonous with the intransitive first person
singular proclitic in that language. It therefore appears that the intransitive proclitic has
spread in Taos Tiwa into the transitive paradigm. This may not be surprising given the
general use of the transitive third person plural inanimate forms to indicate an unspecified
object. It is not a great semantic leap to associate unspecified objects with the lack of an
object, and thus for there to be convergence between the transitive $X^{>3p}$ paradigm and
the intransitive paradigm. On functional grounds it would indeed be tempting to suggest
that the Taos Tiwa proclitic is here the conservative form, but that would make it hard to
explain the initial consonant in the $I^{s}\geq>3p$ form in every other language in the family,
including the other Tiwa languages. Thus it does appear that the Taos Tiwa proclitic
derives from the intransitive.
The second person singular proclitic will be reconstructed as *QV-D= on the basis of the proclitics repeated in (3) below.

(3) Transitive 2S>3P Proclitics

<table>
<thead>
<tr>
<th></th>
<th>O</th>
<th>Kt</th>
<th>TA</th>
<th>P1</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2S</td>
<td>bat</td>
<td>ku</td>
<td>ko</td>
<td>ku</td>
<td>ki-l</td>
<td></td>
</tr>
</tbody>
</table>

Given that the Kiowa proclitic appears not to be cognate with the other languages, this reconstructed form is unfortunately only supported by two of the branches. But, since an initial velar can be reconstructed for another second person singular proclitic, namely the intransitive-dative in chapter 14.1, it does not seem far-fetched to reconstruct such a form here. The plural-marking coda consonant is only supported by Towa at first blush. The Kiowa proclitic does show the cognate coda alveolar, but since the rest of the proclitic is not cognate, this does not provide the strongest of evidence. The closest functional correlate of the Towa -l- to be found in Tiwa is the coda -w= morpheme we saw in the intransitive-dative, which was already suggested to be possibly cognate. The rounded vowel seen in the Tiwa languages could easily reflect an immediate historical structure of *kVw = in Proto-Tiwa, where the phonotactics of the languages have simplified the rounded vowel-glide nucleus to a monophthongal high back rounded vowel. Thus, it may be that the Tiwa forms are fully cognate with the proclitic seen in Towa.

With a reconstruction of an initial *Q, the Kiowa 2S>3P proclitic bat= is clearly an innovation. This is supported on both comparative and language-internal grounds by the limited occurrence of an initial /b/ with second person singular. The bilabial stop occurring in second person forms tends to correlate more strongly with non-singular second person. There is therefore the suggestion that the Kiowa form derives by analogical extension, perhaps with influence from the 2D>3P and 2P>3P proclitics.
discussed below. The $2S>3P$ is indeed identical to the $2P>3P$ form $bát’=$ except for tone. There may also be influence from the $2P>3I$ and $2P>3H$ proclitics ($bé=$ and $be=$ respectively) which also have the initial bilabial. Such an analogical shift may have been stimulated by avoidance of homophony. Even without getting into the details of the phonological reconstruction yet, we can observe that the Kiowa reflex of $*QV-D=$ cognate with the Tiwa and Towa proclitics would have been $**gyat=,$ homophonous with the $1S>3P$ proclitic except perhaps in tone. As we have seen suggested in other paradigms, having first and second person singular forms that are too similar appears to be strongly avoided, thus opening the potential for the analogical shift that is proposed. One could dispute this argument on the basis of the near homophony with the $2P>3P$ mentioned above. However, that near homophony may be functionally less problematic since the difference is only in the number of the referent. Homophony between forms marking two different speech act participants, on the other hand, seems more apt to cause confusion.

The third person singular proclitics show a similar pattern where at first glance the Tiwa and Towa forms may be cognate and the Kiowa form seems more divergent, as seen in (4).

(4) Transitive $3S>3P$ Proclitics

<table>
<thead>
<tr>
<th>$3S$</th>
<th>$3P$</th>
<th>A</th>
<th>O</th>
<th>Ki</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>gya</td>
<td>u</td>
<td>o</td>
<td>u</td>
<td>i-l</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There seems to be the same issue regarding the coda consonant as we saw in the second person where the rounded vowel in Tiwa may be masking a coda $-w=$ which may be cognate with the Towa $-l-$ (and we would reconstruct the most immediate Proto-Tiwa proclitic as $*Vw=.$) The Kiowa proclitic interestingly lacks the expected coda /t/ seen in.
most of the other transitive $X>3P$ forms. However, here it can be noted that these transitive $3S>3P$ proclitics are identical to the intransitive $3P$ pronominals in all of these languages, which suggests that the forms could be explained in the same way (and that the proclitics in the two paradigms are likely directly related). With this relationship recognized, we can recall that the CV Kiowa proclitic was suggested in chapter 13.4 to be derived from a *VC form by metathesis and therefore does appear to be fully cognate with the Tiwa and Towa forms. The initial /g/ of the Kiowa proclitic thus corresponds with the -l- of Towa (and possibly the “hidden” -w= of Tiwa), an original alveolar -d= having been backed to a velar before the nucleus /i/ /a/. From all of this, we would reconstruct the transitive $3S>3P$ proclitic in Proto-Kiowa-Tanoan as *V-D=, exactly homophonous with the intransitive third person plural inanimate form. More on the identity between intransitive and transitive proclitics will be taken up after formal reconstruction in chapter 19.2.

15.2.2 Transitive $XP>3P$ Proclitics

The next proclitics to be presented are those that index a (animate) plural or inverse A argument acting on a plural inanimate O argument, seen in Table 15-6.

Table 15-6: Transitive $XP>3P$ Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>Ki</th>
<th>Ta</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1P</td>
<td>3P</td>
<td>ét`</td>
<td>kiw</td>
<td>ku</td>
<td>kiw</td>
<td>se-l</td>
</tr>
<tr>
<td>2P</td>
<td>3P</td>
<td>bát`</td>
<td>məw</td>
<td>mǔ</td>
<td>mąw</td>
<td>bu-l</td>
</tr>
<tr>
<td>3H</td>
<td>3I</td>
<td>gyá`</td>
<td>iw</td>
<td>u</td>
<td>iw</td>
<td>e-l</td>
</tr>
<tr>
<td>3I</td>
<td></td>
<td>ét`</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here there is much more transparent comparability among all of the languages. The first person plural begins with an obstruent in Towa and Tiwa, but not in Kiowa. This is
because of the full confluence of third person inverse and first person non-singular that is more pervasive in Kiowa than in the other branches. All three branches show an initial voiced bilabial in the second person plural while they all show an initial vowel in the third person inverse. All languages also have a coda consonant in all pronominal forms with the exception of the $3H>3P$ in Kiowa and the regular /Vw/ monophthongization seen in Picuris Tiwa.

The developments that have led to the reflexes given in Table 15-6 are nothing that we have not seen already. Thus, I can go ahead and propose the reconstructions $*QV-D=$ for first person plural, $*bV-D=$ for second person plural, and $*V-D=$ for third person plural. Here we see the correlation between Kiowa coda /t/ (< -d=), Towa coda -l-, and Tiwa coda -w= much more clearly than we did with the singular A arguments. The Kiowa $3H>3P$ proclitic gyá`=, while it has no direct cognate in the other languages, appears to be a straightforward derivative of the $3H>3S$ proclitic á`= with the inanimate plural consonant -d= regularly added and the vowel and consonant metathesized and dental-velar switch applied (i.e. (i)á`-d= > d-(i)á`= > gyá`=).

15.2.3 Transitive XD>3P Proclitics

Table 15-7 finally recaps the transitive proclitics that index a dual A argument and a third person plural inanimate O argument.

Table 15-7: Transitive XD>3P Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>Ki</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1D</td>
<td>3P</td>
<td>ét`</td>
<td>kɔn</td>
<td>kɐm</td>
<td>kɔn</td>
<td>sɔ-l</td>
</tr>
<tr>
<td>2D</td>
<td></td>
<td>máŋ</td>
<td>mŋn</td>
<td>mɔm</td>
<td>mɛn</td>
<td>mɔ-l</td>
</tr>
<tr>
<td>3D</td>
<td></td>
<td>ɛn`</td>
<td>ɛn</td>
<td>Ɛm</td>
<td>ɪn</td>
<td>ʃ-l</td>
</tr>
</tbody>
</table>
We find here the familiar pattern of nasalization that is associated with the dual on top of the same types of forms we encountered with the plural A argument proclitics above. The first person forms begin with a velar stop (Tiwa) or alveolar fricative (Towa), with Kiowa divergent for its lack of a distinctive first person dual. The second person proclitics begin with a bilabial stop while the third person dual forms begin with a vowel. All proclitic forms here end in a coda consonant. This consonant is the regular -l- in Towa and is -n= in Kiowa by nasalization of the regular -d=. The Tiwa languages are curious in this final consonant. They do not show the -w= associated with the inanimate plural, but rather Taos Tiwa and Southern Tiwa have the coda /n/ regularly found with dual proclitics throughout the paradigms. Picuris Tiwa, on the other hand, anomalously has a coda /m/, which is typically associated with inverse objects.

As in the previous table, I think we can uncontroversially reconstruct these proclitics based on the patterns we have seen so far. The transitive 1D>3P proclitic will be reconstructed as *QY-D=, the 2D>3P proclitic as *bY-D=, and the 3D>3P proclitic as *Y-D. Even though here it appears we can reconstruct a coda consonant no matter what, there is the question of whether the final consonant seen in the Tiwa forms is actually related to the plural-marking coda of Kiowa and Towa or if it the same dual marking as found in other Tiwa proclitics (cf. chapter 13.5). If the latter, then the coda may prevent the appearance of the anticipated Tiwa -w= to mark the inanimate plural object. If the former, however, it would go towards suggesting a reconstruction of Tiwa -w=, Towa -l-, and Kiowa -d= as cognate reflexes of some kind of alveolar consonant *-D=. The nasalization of the consonant in the dual may have thus preserved the alveolar quality
even as the consonant lenited to \(-w=\) elsewhere in the paradigms\(^5\). The Picuris Tiwa proclitics with /m/ may then be a reanalysis that attempts to regularize the distribution of the plural-marking labial \(-w=\) while still showing the nasalization caused by the dual.

15.2.4 Summary of the Transitive X\(>3P\) Reconstruction

The reconstructed schematic proclitic forms that index a third person plural inanimate O argument are summarized in Table 15-8.

Table 15-8: Schematic Reconstruction, Transitive X\(>3P\) Paradigm

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>*TV-D</td>
<td>*QV-D</td>
<td>*QV-D</td>
</tr>
<tr>
<td>2</td>
<td>*QV-D</td>
<td>*bV-D</td>
<td>*bV-D</td>
</tr>
<tr>
<td>3</td>
<td>*V-D</td>
<td>*y-D</td>
<td>*V-D</td>
</tr>
</tbody>
</table>

These forms are essentially the same as those found in the transitive X\(>3S\) paradigm except for the plural-marking coda \(*-D=\), the initial velar consonant found in the first person non-singular and second person singular proclitics, and the overt form of the third person singular. The vowels of the first and second person also reconstruct distinct from those in the X\(>3S\) paradigm. However, there may still be reason to think the paradigms are related (see chapter 19.2).

\(^5\) That this is not a regular development applied after nasal proclitics—for example, it does not occur in the intransitive-dative—may be attributed to the recognizable productivity of the number-marking coda. The transitive paradigm in Tiwa shows several developments that obfuscate the regular meaning of inverse \(-m=\) and plural \(-w=\) and thus there is little motivation for maintaining these forms for the corresponding meanings. Their occurrence in the dative paradigms, however, is regular enough to bolster the form on the basis of recognizable meaning.
15.3 Inverse and Animate Plural Third Person O Arguments, Transitive

Somewhat more complex than the above proclitics indexing inanimate plural O arguments are those that index third person inverse O arguments (i.e. animate plurals and the singular of some inanimates).

15.3.1 Transitive Xs>3I Proclitics

Those proclitics that index a singular A argument are given in Table 15-9. Since they have no direct functional cognates in the Tanoan languages and since they appear to be related to the inverse O forms here, the Kiowa third person human plural proclitics are also given.

Table 15-9: Transitive Xs>3I/3H Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>Kt</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>3I</td>
<td>dé</td>
<td>dé</td>
<td>dé</td>
<td>dobé</td>
<td>pi</td>
<td>pi</td>
<td>bi</td>
</tr>
<tr>
<td>2S</td>
<td>3I</td>
<td>bé</td>
<td>bé</td>
<td>bé</td>
<td>mbé</td>
<td>i</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>3S</td>
<td>3I</td>
<td>ém</td>
<td>ém</td>
<td>ém</td>
<td>obé</td>
<td>i</td>
<td>i</td>
<td>i</td>
</tr>
</tbody>
</table>

Recall that the Kiowa X>3H proclitics are also used for the reflexive. It can be noticed that the inverse and human plural forms in Kiowa differ only in tone with the first and second person singular A arguments, while with third person there is both a difference in tone and the addition of a coda consonant /m/. The forms given in Tewa as 3S>3I here actually index 3>3A, an animate plural O argument with the number of the A argument unspecified. Important to note is the Tewa proclitic that does index the number of the A argument, the 3S>3 form i= in Rio Grande Tewa (and múŋ= in Arizona Tewa, not as formally relevant here). The 2S>3A and 3>3A proclitics are identical in Rio Grande Tewa,
but not in Arizona Tewa. We can also notice that all of the Tewa forms have a formal feature in common, the increment \(-\text{vê} = \text{(RGT)} / -\text{bé} = \text{(AT)}\). In both the Tiwa languages and in Towa, there is formal identity between the second and third person singular. Kontak and Kunkel (1987) claim a tone difference between the two persons in Taos Tiwa, but the homophony is probably still not coincidental. Finally it should be noticed that the 1S>3I forms in the Tiwa languages are divergent in both comparative and internal perspective in having an initial bilabial indexing first person singular, TA, PI \(\text{pi}=\), ST \(\text{bi}=\).

The first person singular will be reconstructed as \(*\text{TV} =\), reflected in the above table in the Kiowa and Towa proclitics and (partially) in the first syllable of the Tewa clitics. The motivation for this is not immediately clear from just Table 15-9 above, but is driven by the rest of the \(X>3I\) paradigm and by forms found in other paradigms. The Tiwa \(\text{pi}= \text{(TA, PI)} / \text{bi}= \text{(ST)}\) proclitics are divergent in-and-of themselves, but appear to be related to a \(-\text{pi}= \text{TA, PI} / -\text{bi}= \text{(ST)}\) increment we shall see in the Tiwa \(XNS>3I\) proclitics below. This increment also appears to be cognate with the \(-\text{vê} = \text{(RGT)} / -\text{bé} = \text{(AT)}\) increment of Tewa (and a \(-\text{p} = \text{increment of Towa that we shall see below}\). The distribution of this increment suggests that it serves to mark a third person inverse O argument, particularly when the A argument is non-singular. In the Tewa languages, it appears to have extended its meaning to mark third person animate plural O arguments no matter what the number of the A argument, having compounded with the 1S>3A proclitic \(\text{dô}=\) to derive the above 1S>3A forms \(\text{dov} = \text{(RGT)} / \text{dob} = \text{(AT)}\). The original Tewa 1S>3I proclitic appears to be retained as the first person singular reflexive proclitic \(\text{dé}(\text{)}=\) \(\text{(RGT)} / \text{déh} \sim \text{dí} = \text{(AT)}\), discussed in chapter 0. In the Tiwa languages, on the other hand, this increment appears to have entirely replaced the original 1S>3I proclitics.
(perhaps via an intermediate compounded stage similar to that seen in Tewa). By regular formal correspondences, the Tiwa proclitic cognate with the Kiowa, Towa, and Tewa (reflexive) first person singular pronouns actually appears to be the transitive 1S>3S form ti=. It appears, however, that as the original Tiwa inverse proclitic was reanalyzed as a marker of singular number, the inverse O argument morpheme pi= (TA, Pt) / bi= (ST) spreading into the 1S>3I proclitic slot (again, perhaps via a compound form stage where early Proto-Tiwa may have had a form like *ti-pi=).

The second and third person singular proclitics will be reconstructed as a homophonous form *V=, as reflected in Tiwa and Towa repeated in (5) below.

(5) Transitive 2S>3I and 3S>3I Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2S</td>
<td>3I</td>
<td>bé</td>
<td>ovê</td>
<td>mqbê</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
</tr>
<tr>
<td>3S</td>
<td>3I</td>
<td>é</td>
<td>2S&gt;3A</td>
<td>3&gt;3A</td>
<td>ì</td>
<td>ì</td>
<td>ì</td>
<td></td>
</tr>
</tbody>
</table>

There is inadequate evidence to determine at the moment whether the two persons might have differed in tone or not so they will be considered a single form. The Kiowa cognate is found only in the third person singular: both the 3S>3I proclitic é= and apparently the initial part of the 3S>3H proclitic ëm=. The Tewa cognate is preserved as the transitive 3S>3 proclitic in Rio Grande Tewa i= and as the third person singular reflexive proclitic in both Tewa languages, i=. Both Kiowa and Tewa have innovated a distinctive second person singular, however. Kiowa has a form with an initial bilabial bé=, analogous with second person (non-singular) proclitics in other paradigms. It is not clear whether this second person singular proclitic was developed by simply extending the second person /b/ to the original 2/3S>3I proclitic é= or if there might be some relationship between this
second person form and the inverse bilabial-initial increment pi=/bi=/bé=/vê=/pà= seen in the other languages (with biasing towards a second person reading due to the bilabial-second person association). It does appear that the Kiowa 2S>3I proclitic bé= (and the 2S>3H proclitic be=) may have a cognate in the Tewa second person singular reflexive pronominal bi=, which will be addressed in chapter 0.

The Tewa languages have also innovated in both the second and third person in the main transitive paradigm above. As already mentioned for the first person, the XNS>3I increment –vê = (RGT) / -bé = (AT) has been extended to use with singular A arguments in Tewa, always attached to another proclitic form. The 3>3A form ovê = (RGT) / obé = (AT) appears to be derived by agglutinating the inverse increment to the 3>3S proclitic ô=. Recall that I proposed above that the ô = itself ultimately originates as a transitive 2S>3S indexation marker, which would suggest an origin for the Rio Grande Tewa 2S>3A proclitic ovê = homophonous with the 3>3A proclitic: they are etymologically identical. This is not to say that they entered this part of the transitive paradigm at the same time, however. Arizona Tewa has a distinctive 2S>3A proclitic form mqbé=. This appears to be derived by affixing the inverse increment to the proclitic base seen in the transitive-dative 2S>X>3S proclitic máq= and in the homophonous transitive 3S>3 proclitic mentioned above (which I suggested in section 15.1 derived from a second person form). Given the conservative patterns of certain areas of the transitive-dative paradigm—and of Arizona Tewa in general—it is tempting to think that this 2S>3A proclitic might be reconstructed to Proto-Tewa, the second person usage of ovê = having developed from

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6 These similar, probably cognate, forms suggest a possible shared innovation between Kiowa and Tewa. Alternatively, these forms could be conservative of an original Proto-Kiowa-Tanoan transitive 2S>3I proclitic *bV=, but that would suggest a shared innovation between Towa and Tiwa, both of which have merged 2S>3I and 3S>3I forms. These two possibilities will be taken up in chapter 0.
the 3>3A usage later in Rio Grande Tewa (even though the form may ultimately derive from a second person morpheme). However, it could also be a later innovation within Arizona Tewa to disambiguate originally homophonous 2S>3A from 3>3A. In either case it does not appear to be indigenous to this part of the proclitic paradigm in the larger Kiowa-Tanoan context.

Finally, there are the third person human plural proclitics of Kiowa. Elsewhere it has been proposed that such human plural forms derive from second person singular proclitics, but that seems to be only when the plural argument is an S or A argument. Here where the human plural is indexed as an O argument, the forms seem to be derived from the X>3I proclitics. In the first and second person singular, the difference is only in tone: high on the inverse forms dé= 1S>3I, bé= 2S>3I, and low on the human plural, de= 1S>3H, be= 2S>3H. In the third person singular, there is not only the difference in tone, but also a coda /m/ added to the human plural proclitic, é= 3S>3I, ém= 3S>3H. The origin of this bilabial consonant is not readily apparent7, although there is of course the temptation to relate it to the bilabial-initial inverse increment found in the other languages and otherwise absent in Kiowa. The loss of the vowel of the inverse increment is not unique in Kiowa (as suggested in chapter 10, there appear to be originally stem-final CV syllables that have lost their vowel in other areas of Kiowa phonology). Unfortunately, there is too little evidence to support this contention. The only other pronominal proclitic with a coda /m/ that seems comparable is the 3H>3H proclitic ém= seen in the next section. Given the reflexive use of the plural human O argument

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7 This proclitic is anomalous under Watkins’ (1984) analysis as well. She suggests it is derived from Ø-Ø-Ø-Ø-Ø-b, where the two null increments would be read as a third person singular A argument, the -Ø- as a dual O argument, and the -b as a third person non-singular O argument, which does not occur in this fourth slot in any other pronominal form under her analysis.
proclitics, it is also possible that this labial consonant is related to the reflexive found in Tewa and Tiwa languages (see chapter 0), but this seems less likely from a functional perspective and suffers the same limited evidence as an origin from the inverse marker. I will leave this question unresolved in the present work.

**15.3.2 Transitive XP>3I Proclitics**

The follow-up to the inverse O argument proclitics with a singular A argument above are those proclitics that index a plural A argument, shown in Table 15-10. Because the Tewa proclitics that index a non-singular A argument do not differentiate the number of a third person O argument (or they index the number of O argument with a third person A argument unspecified for number), these languages are omitted from this table. See previous sections for the relevant Tewa forms.

**Table 15-10: Transitive XP>3I/3H Proclitics**

<table>
<thead>
<tr>
<th>A:</th>
<th>O</th>
<th>1P</th>
<th>2P</th>
<th>3H</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>3I</td>
<td>3I</td>
<td>ét</td>
<td>pi</td>
<td>ibi</td>
<td>bibi</td>
<td>bapa</td>
</tr>
<tr>
<td>3H</td>
<td>ét</td>
<td>ipí</td>
<td>pi</td>
<td>ibi</td>
<td>sepa</td>
<td></td>
</tr>
<tr>
<td>3I</td>
<td>ét</td>
<td>ipí</td>
<td></td>
<td>ibi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3H</td>
<td>ét</td>
<td>ipí</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here we find the regularized use of the third person inverse-marking increment -pi= (TA, Pi) / -bi= (ST) and -pa= (To) with a non-singular A argument. In all but Picuris Tiwa, this increment is affixed to a pronominal form indexing person and number of the A argument. There is identity between the first and third person plural forms in Taos Tiwa (ipí=) and Southern Tiwa (ibi=) and between first person plural and third person inverse
in Kiowa (ét=), as usual, and near identity between the two persons in Towa (sepa= 1P>3I, epa= 3P>3I) except for the initial /s/ in the first person plural. In Kiowa there is merger between the third person inverse and human plural when combined with an inverse A argument (ét=). It also appears that all third person inverse O argument forms have a coda /t/ (<-d=), just like the third person inanimate O argument proclitics presented above.

From the above table and prevailing patterns we have already seen, we can reconstruct the first and third person plural/inverse proclitics identically as *V-pV=. The initial /s/ seen in the Towa first person plural appears to be an analogical extension from other paradigms. The second person plural can be reconstructed as *bV-pV= rather less controversially. Under this proposal, Taos Northern Tiwa and Southern Tiwa directly preserve the original proclitic forms but Picuris Northern Tiwa has lost the initial part of the proclitic (as with the 1S>3I form) and indexes all persons with an undifferentiated pi= proclitic marking the inverse O argument. Towa innovates only in distinguishing the first and third person plural by extending the first person non-singular increment s- to this paradigm.

Kiowa shows the greatest divergence due to loss of the inverse increment. It is perhaps preserved in the coda /m/ of the 3H>3H proclitic ḗm=, but the uncertainty of this proposal has already been mentioned in the previous section. Instead, Kiowa appears to have extended the use of the non-singular marking increment -d= seen in the dative paradigm to index any non-singular O argument in the transitive8. Thus in the proclitics that index an inverse O argument there is a coda /t/. The same use of this non-singular

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8 Recall from chapter 14.5 that this increment may also descend from an inverse number marking morpheme.
increment is not found when the O argument is human plural, except where the
distinction between the human plural and inverse has been neutralized (when combined
with an inverse A argument). Thus, the $2P>3H$ proclitic $b\acute{e}=$ is identical to the $2P>3I$
proclitic $b\acute{e}t=$ except for the coda consonant. Similarly, the $3H>3I$ proclitic is $et=$, with
the $-d=$ increment, while the $3H>3H$ form is $\acute{e}m=$, without the increment (but with the
mysterious /m/ mentioned above). There is not the regular tone distinction between
inverse and human plural that is found with the singular A arguments. However, note that
the $3I>3I/3H$ form is $\acute{e}t=$, with a high tone, while the $3H>3I$ form is $et=$, homophonous
but with low tone. This suggests a possible tonal derivation on the basis of the A
argument rather than the O argument, although this is not as problematic as it seems
given that these proclitics involve marked number categories in both the A and O
arguments. Otherwise, Kiowa does appear to preserve the $*V-$ portion of the first and
third person plural proclitic and the $*bV-$ portion of the second person.

15.3.3 Transitive $Xd>3I$ Proclitics

Table 15-11 gives the proclitics indexing a third person inverse (and human
plural) O argument combined with a dual number A argument. Again the Tewa proclitics
are omitted since we have already covered the relevant forms (since they only index the
number of the A argument, not of the O argument). We see the by now familiar
derivation of the dual forms from the plural forms and so the same patterns recur.
Table 15-11: Transitive $XD > 3i/3H$ Proclitics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Ki</th>
<th>Ta</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1D</td>
<td>3I</td>
<td>ét</td>
<td>òpén</td>
<td></td>
<td>imîm</td>
<td>sâpa</td>
</tr>
<tr>
<td>2D</td>
<td>3I</td>
<td>méñ</td>
<td>m̃òpén</td>
<td>pá</td>
<td>bibîm</td>
<td>mâpa</td>
</tr>
<tr>
<td>3D</td>
<td>3I</td>
<td>éñ</td>
<td>òpén</td>
<td></td>
<td>imîm</td>
<td>qâpa</td>
</tr>
</tbody>
</table>

As in the previous section, we see identity or near identity between first and third person. Towa has a distinct first person only by addition of the /s/ increment while the Kiowa first person dual is the same as the first person plural, as usual, and is not directly cognate within this set. We also see the usual association of nasalization with dual number and the continued use of the labial-initial increment in Tiwa and Towa to index a third person inverse O argument, although comment on its divergent form is required here.

In Towa only the initial part of the pronominal is nasalized, the inverse -pa= being added to this. In the Tiwa languages we find the first part of the proclitic to be an oral vowel (except in Picuris Tiwa, where there is no first part to the proclitic) while the nasalization occurs on the inverse marker, leading to the lowered vowel in Northern Tiwa: -pê= in Taos Tiwa and -pâ= in Picuris Tiwa. In Taos and Southern Tiwa the inverse increment is then followed by a nasal consonant. This coda nasal is /n/ in Taos Tiwa, analogous with the /n/ found in other dual proclitics, and makes the inverse increment look like an infix. In Southern Tiwa, on the other hand, this coda nasal is /m/ either by assimilation in place of articulation to the preceding bilabial consonant of the inverse increment (which has itself become a nasal stop) or, perhaps more likely, by analogy with the dative proclitics where inverse number of O arguments is regularly indexed by a coda -m= increment.
In the previous paradigms, I have considered the (non-number marking) coda nasal consonant usually seen in the dual proclitics of the Tiwa languages to be an innovative use of the dual marker specific to that branch. However, the seemingly infixed form of the Taos Tiwa proclitics could suggest that the coda nasal consonant should indeed be reconstructed to Proto-Kiowa-Tanoan. After all, the vowel preceding the inverse increment -pi= (TA, PI) / -bi= (ST) is oral and only the second syllable adjacent to the coda nasal ends up nasalized, suggesting that the inverse increment is falling templatically between the person-number indexing part of the proclitic and the dual-marking part of the proclitic. However, the sound correspondences between the initial (oral) vowels of Taos Tiwa and Southern Tiwa (and Towa and Kiowa) are only regular for the nasal vowels, not for the oral vowels. As we shall see in chapter 19.1.2, Taos Tiwa /ɔ/ only corresponds to Southern Tiwa /i/ when the vowels are nasalized (otherwise the correspondence is TA /i/, ST /i/ when the vowels are oral). Thus it appears that the initial vocalic syllable preceding the inverse increment originally contained a nasal vowel which has subsequently lost its nasalization. Either before this denasalization—and thus by nasal spread—or after—and thus by compensation to maintain the nasal-dual association—the second syllable also became nasalized. The dual marking coda -n= was subsequently added by analogy with other dual forms. The coda /m/ seen in Southern Tiwa was probably a later innovation under influence of the dative clitics.

From the above argument, we would therefore reconstruct the first and third person dual proclitics as homophonous *y-pV= and the second person dual proclitic as *by-pV. The same comments regarding a possible */b ~ m/ alternation at the Proto-Kiowa-Tanoan stage hold here as with other dual second person forms. Towa has once
again introduced an initial consonant into the first person non-singular to distinguish it from the third person. A comparison of the dual-marked inverse increment in Towa and Tiwa (and Tewa when we see the cognate in the next part of the paradigm) does not unambiguously indicate whether the vowel of the inverse increment \*-pV= was also nasalized in Proto-Kiowa-Tanoan so I will leave the vowel of the increment oral for now. Picuris Tiwa has again innovated by eliding the initial part of the proclitic and marking all persons by an undifferentiated (dual-marked) reflex of the inverse marker, pa=.

The Kiowa proclitics are almost regularly produced reflexes following from previous discussion. Rather than a cognate of the \*-pV= inverse increment, the inverse O argument clitics take the non-singular-marking final -d=, nasalized to /n/ because of the dual here. The 2D>3H proclitic m̃̄家伙 lacks the -d=, as expected, while the human plural and inverse have merged to ēn= when combined with a third person dual A argument as they did with a third person inverse A argument (ēt= 3I>3I/H). One curious feature is that the 2D>3I proclitic m̃̄ŋ= causes a drop in tone on the following verb word, the only instance of this in this part of the transitive paradigm. The Kiowa proclitics otherwise appear to be cognate with the Tiwa and Towa forms.

15.3.4 Summary of the Transitive X>3I Proclitics

The reconstruction of the transitive X>3I proclitics is given in Table 15-12.

Table 15-12: Schematic Reconstruction, Transitive X>3I Paradigm

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>*TV</td>
<td>*V-pV</td>
<td>*V-pV</td>
</tr>
<tr>
<td>2</td>
<td>*V</td>
<td>*bV-pV</td>
<td>*bV-pV</td>
</tr>
<tr>
<td>3</td>
<td>*V</td>
<td>*Y-pV</td>
<td>*V-pV</td>
</tr>
</tbody>
</table>
The schema is much like what we have seen in other paradigms. The dual and plural are identical except for nasalization and the non-singular numbers are more marked than the singular. The first person and third person non-singular are identical while the second person non-singular bears an initial */b/*. This section of the transitive paradigm is unique from the previous insofar as the second and third person singular are identical, but the singular number forms are otherwise schematically quite similar to what we find with singular and plural O arguments.

15.4 Dual Third Person O Arguments, Transitive

The final section of the transitive paradigm is composed of those proclitics indexing a third person dual O argument.

15.4.1 Transitive XS>3D Proclitics

The dual argument forms with a singular A argument are summarized in Table 15-13. Remember that dual is not a significant category within O arguments in the Tiwa languages and they are therefore omitted. With the relatively conservative Tiwa languages missing from the dataset, however, reconstruction of the dual forms is much more tenuous.

Table 15-13: Transitive XS>3D Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>1S</th>
<th>2S</th>
<th>3S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ki</td>
<td>RGT</td>
<td>AT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>nən</td>
<td>dovęŋ</td>
<td>dobęŋ</td>
</tr>
<tr>
<td>1S</td>
<td>3D</td>
<td></td>
<td>dobęŋ</td>
<td></td>
</tr>
<tr>
<td>2S</td>
<td></td>
<td>męn</td>
<td>ovăŋ</td>
<td>mąbęŋ</td>
</tr>
<tr>
<td>3S</td>
<td></td>
<td>ė</td>
<td>2S/3&gt;3D</td>
<td>3&gt;3D</td>
</tr>
</tbody>
</table>

We can immediately recognize similarities with the inverse O argument proclitics of the previous section. Indeed all forms look the same in the respective languages except for
the addition of nasalization (and the coda -l- in the Towa forms). The second and third person singular are again merged in Towa and Rio Grande Tewa, but distinct in Kiowa and Arizona Tewa. In Tewa we again see the extension of the bilabial-initial number increment, which is here nasalized with a terminal /ŋ/. In Kiowa we again see the final alveolar -d=, although not in the third person singular. It can be expected that our reconstruction will look quite similar to what we found in the $X>3I$ paradigm of the previous section.

The first person singular will be reconstructed as at least $^*TV_̨$ and the second and third person as an identical form $^*V_̨$. By analogy with the inverse proclitics, we can suspect that the Tewa languages have extended the use of the (dual-marked) inverse increment $^-va_̨\eta_=$ (RGT) / $^-b\eta_=$ (AT) into the pronominals that index a singular A argument. Originally, however, the increment was probably restricted to use with non-singular A arguments and should not be reconstructed in this part of the paradigm. There is the question of whether there was a coda consonant in these forms, as suggested by the Towa -l- and the Kiowa /n/ (< -d=). Only the Kiowa 3S>3D proclitic $\eta_=$ lacks the non-singular-marking coda. By analogy with the plural proclitics, I will opt to reconstruct a final dual morpheme $^*^-d_=/^*^-n_=$ on top of the nasalization distinguishing the dual from the inverse proclitics, i.e. $^*TY^-d_=$ for first person singular and $^*Y^-d_=$ for second and third person singular. This would mean that Kiowa innovated a loss of the non-singular -d= in the 3S>3D. Perhaps due to homophony with $\eta_n_= 3D>3I$ and $\eta_\_n_`= 3D>3P$ forms was this coda lost in this proclitic. Towa would be the more conservative retaining the -l- for

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9 Note that, just like in the Tiwa languages, the dual nasalization is applied to the increment itself and is closed by a nasal consonant. The neutralization of coda consonants in Tewa makes it difficult to determine whether the coda /ŋ/ here can be used as evidence for an original coda in Proto-Kiowa-Tanoan, cf. the earlier discussion of the coda nasal in Tiwa in chapter 13.5.
the dual. We will see in the rest of the $X>3D$ paradigm that the -l- is not found in Towa with a non-singular A argument. However, a case could also be made for marking the dual argument only through nasalization and that the coda consonant is an innovation in both Kiowa and Towa.

The question of the coda consonant aside, it appears that all of these dual proclitics are derived directly by nasalization of the corresponding inverse clitics. This gives rise to Kiowa $1S>3D$ nę-n = from $1S>3I$ dé =, $2S>3D$ me-n = from $2S>3I$ bé =, and $3S>3D$ e = from $3S>3I$ ē =. We can see that there is a difference in tone as well. Similarly Towa dual ti-l- and j-l- appear to derive from inverse te = and i = respectively (there is no nasal vowel /ę/ in Towa) and Tewa dual -vēng = (RGT) and -bēng = (AT) from animate plural -vê = (RGT) and -bé = (AT) respectively.

15.4.2 Transitive XNS>3D Proclitics

Table 15-14 and Table 15-15 below present the remaining dual O argument proclitics which index non-singular A arguments. Because proclitics indexing dual or plural A arguments in Tewa do not also distinguish number of the third person O argument, the relevant proclitics have already been addressed and the Tewa languages are omitted from these tables. Since dual is not a significant category for O arguments in Tiwa, that means that we are only left with data from Towa and Kiowa. This makes the argumentation of the reconstructed forms even more limited.
Table 15-14: Transitive $XP\!>\!3D$ Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>Ki</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1P</td>
<td>3D</td>
<td>et</td>
<td>sepa</td>
</tr>
<tr>
<td>2P</td>
<td>bet</td>
<td>bapa</td>
<td></td>
</tr>
<tr>
<td>3H</td>
<td>et</td>
<td>epa</td>
<td></td>
</tr>
</tbody>
</table>

Table 15-15: Transitive $XD\!>\!3D$ Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>Ki</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1D</td>
<td>3D</td>
<td>et</td>
<td>sapa</td>
</tr>
<tr>
<td>2D</td>
<td>mę́</td>
<td>ṃapa</td>
<td></td>
</tr>
<tr>
<td>3D</td>
<td>én</td>
<td>qpa</td>
<td></td>
</tr>
</tbody>
</table>

The Towa proclitics bear the inverse increment -pα= and indeed are entirely identical with the proclitics that index an inverse O argument in section 15.3.2 above. The Kiowa forms all show the coda /t/ or /n/ coming from the non-singular increment -d= and are identical to the corresponding inverse O argument proclitics except for tone (although the $3D\!>\!3D$ proclitic ę́n= and the $3I/H\!>\!3D$ proclitic et= are entirely homophonous with the $3D\!>\!3I$ and $3H\!>\!3D$ proclitics respectively). Note that any nasalization in these proclitics only occurs when the A argument is also dual.

Following the discussion of the final alveolar consonant in the singular A argument proclitics, we have here an even argument between Kiowa and Towa as to whether to reconstruct dual *-d=/*-n= in this series or *-pV=. On the one hand these dual proclitics are quite closely related to the inverse. On the other hand, the singular forms do seem to suggest a productive use of the dual coda morphemes here in the transitive paradigm. I will leave this issue in limbo for the current dissertation, but at least narrow it down to these two options.
15.4.3 Summary of the Transitive X>3D Proclitics

The reconstruction of the full paradigm indexing a third person dual O argument is given in Table 15-16.

Table 15-16: Schematic Reconstruction, Transitive X>3D Paradigm

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>*TY-d</td>
<td>*Y-d / *Y-pV</td>
<td>*V-d / *V-pV</td>
</tr>
<tr>
<td>2</td>
<td>*Y-d</td>
<td>*bY-d / *bY-pV</td>
<td>*bV-d / *bV-pV</td>
</tr>
<tr>
<td>3</td>
<td>*Y-d</td>
<td>*Y-d / *Y-pV</td>
<td>*V-d / *V-pV</td>
</tr>
</tbody>
</table>

The singular forms are identical to the inverse paradigm in section 15.3.4 except for nasalization on the vowel. The non-singular A argument forms are not certain: either they bore the inverse increment *-pV= or they bore the dual increment *-d=/*-n= (represented in the table as just -d).

15.5 Summary of the Transitive X>3 Paradigm

Table 15-17 summarizes the reconstructions presented in the above sections for the transitive proclitics which index a third person O argument.
Table 15-17: Schematic Reconstruction, Transitive X>3 Paradigm

<table>
<thead>
<tr>
<th>A ↓ / O →</th>
<th>3s</th>
<th>3D</th>
<th>3I</th>
<th>3P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>*TV</td>
<td>*TV-d</td>
<td>*TV</td>
<td>*TV-D</td>
</tr>
<tr>
<td>2S</td>
<td>*V</td>
<td>*V-d</td>
<td>*V</td>
<td>*KV-D</td>
</tr>
<tr>
<td>3S</td>
<td>*Ø</td>
<td>*V-d</td>
<td>*V-pV</td>
<td>*V-D</td>
</tr>
<tr>
<td>1D</td>
<td>*Y</td>
<td>*Y-d   /</td>
<td>*Y-pV</td>
<td>*KV-D</td>
</tr>
<tr>
<td>2D</td>
<td>*bY</td>
<td>*bV-d</td>
<td>*bV-pV</td>
<td>*bV-D</td>
</tr>
<tr>
<td>3D</td>
<td>*Y</td>
<td>*Y-d   /</td>
<td>*Y-pV</td>
<td>*V-D</td>
</tr>
<tr>
<td>1P</td>
<td>*V</td>
<td>*V-d   /</td>
<td>*V-pV</td>
<td>*KV-D</td>
</tr>
<tr>
<td>2P</td>
<td>*bV</td>
<td>*bV-d</td>
<td>*bV-pV</td>
<td>*bV-D</td>
</tr>
<tr>
<td>3I</td>
<td>*V</td>
<td>*V-d   /</td>
<td>*V-pV</td>
<td>*V-D</td>
</tr>
</tbody>
</table>

We can see that the dual and inverse O arguments may or may not have been the same when the A argument was non-singular. The 1S>3 forms all differ in the vowel. The first and third person dual proclitics are always identical as are the first plural and third person inverse, except when the O argument is inanimate plural. We can also see that the proclitics indexing non-singular O arguments were probably largely derived from the unmarked singular proclitic forms. The details of the forms will be reconstructed in chapter 19.2, which will also render some of the more interesting and unexpected functional shifts more transparent.
16 Reflexive

Despite having comparable functions in all of the languages, the reflexive paradigm has a varied development across the four branches. Firstly, while it can be considered a distinctive paradigm on functional grounds, it has transparent origins within the transitive series. Indeed, as already noted in chapter 0, the Kiowa and Towa reflexive series are both absolutely identical (and derived from) transitive proclitics that index plural arguments. Note however that the Kiowa reflexive is derived from the transitive proclitics indexing a third person animate (human) plural argument while the Towa reflexive comes from clitics that index a third person inanimate plural argument. Indeed, their reflexive series are not even cognate to each other. The Towa proclitics primarily have to be compared to the transitive \( \times > 3p \) inanimate proclitics of Kiowa in order to find cognates (see chapter 15.2). The Kiowa clitics show greatest comparability to the transitive \( X > 3i \) forms of Towa, although largely indirectly (see chapter 15.3). As we saw in chapter 15.3, the Kiowa transitive \( X > 3h \) proclitics used for reflexive appear themselves to be derived from the Kiowa \( X > 3i \) proclitics, which are then more closely related to the Towa \( X > 3i \).

Because they are more properly considered with the transitive proclitics, we have already encountered the Kiowa and Towa reflexive forms, analyzed in chapter 0 with the rest of the transitive paradigm. However, individual forms from those languages will be mentioned where relevant. This section will thus focus more on the Tewa and Tiwa languages, whose reflexive paradigms form more unique series. However, this uniqueness does not entail that the series in the two languages are actually fully related to each other.
16.1 Reflexive Proclitics of Tewa and Tiwa

Table 16-1 summarizes the reflexive forms from all Kiowa-Tanoan languages.

Table 16-1: Reflexive Proclitics

<table>
<thead>
<tr>
<th></th>
<th>Kí</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>de</td>
<td>dé(·)</td>
<td>déh</td>
<td>tə</td>
<td>ta</td>
<td>te</td>
<td>ti-l</td>
</tr>
<tr>
<td>2S</td>
<td>be</td>
<td>bi</td>
<td>bi</td>
<td>ṣ</td>
<td>a</td>
<td>a</td>
<td>ki-l</td>
</tr>
<tr>
<td>3S</td>
<td>ḳm</td>
<td>i</td>
<td>i</td>
<td>mɔ</td>
<td>mə</td>
<td>be</td>
<td>i-l</td>
</tr>
<tr>
<td>1D</td>
<td>ét</td>
<td>æŋ</td>
<td>əŋ</td>
<td>kɔn</td>
<td>kəm</td>
<td>kin</td>
<td>sə-l</td>
</tr>
<tr>
<td>2D</td>
<td>mɛ</td>
<td>dæŋ</td>
<td>dəŋ</td>
<td>mɔn</td>
<td>məm</td>
<td>mɛn</td>
<td>mə-l</td>
</tr>
<tr>
<td>3D</td>
<td>ŋn</td>
<td>ŋn</td>
<td>ŋn</td>
<td>mən</td>
<td>mən</td>
<td>mən</td>
<td>mə-l</td>
</tr>
<tr>
<td>1P</td>
<td>ét</td>
<td>îví</td>
<td>î ví</td>
<td>i bí</td>
<td>kí-mɔ</td>
<td>kí-mə</td>
<td>kí-be</td>
</tr>
<tr>
<td>2P</td>
<td>bé</td>
<td>ūví</td>
<td>ëví</td>
<td>îbí</td>
<td>mĩ-mɔ</td>
<td>mĩ-mə</td>
<td>be-be</td>
</tr>
<tr>
<td>3I</td>
<td>ét</td>
<td>dîví</td>
<td>dîbí</td>
<td>î-mɔ</td>
<td>i-mə</td>
<td>i-be</td>
<td>e-l</td>
</tr>
<tr>
<td>3H</td>
<td>ḳm</td>
<td>dîví</td>
<td>dîbí</td>
<td>î-mɔ</td>
<td>i-mə</td>
<td>i-be</td>
<td>e-l</td>
</tr>
</tbody>
</table>

The reader may notice some immediate similarities, and some striking differences, right off the bat. The Tewa singular proclitics have already received mention when dealing with the transitive proclitics, already suggesting their origins from $XS>3I$ forms. The origins of the Tiwa proclitics, on the other hand, will involve more discussion.

Before getting into those details, we can note that the third person singular and all of the plural persons in the Tiwa languages bear the reflexive proclitic $mɔ=(TA) / mə=(Pt) / be=(ST)$. The pronominal forms to which this reflexive marker is attached and the forms in which it is not found are indicative of the development of the paradigm. The plural persons in the Tewa languages also bear a conspicuous common element -vi= (RGT) / -bì= (AT)\(^1\) which appears in no other pronominal forms. This looks to be

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\(^1\) Recall from chapter 6.2 that the voiced bilabial stop regularly spirantizes to [v] intervocally in Rio Grande Tewa. The RGT dialectal forms shown that lack the labial consonant appear to have elided the
possibly cognate with the Tiwa reflexive, suggesting this element was productive at some earlier stage in the family. Whether or not we can reasonably reconstruct this reflexive form to Proto-Kiowa-Tanoan then depends on whether Tewa and Tiwa constitute any kind of subgroup within the family. If these two branches are more closely related to each other than to Kiowa or Towa—or indeed if there is any grouping that includes Tewa and Tiwa, but excludes at least one of the other two branches—then we can only reliably reconstruct this reflexive to the proto-language of that subgroup and not necessarily to Proto-Kiowa-Tanoan. I have yet to find a definitive cognate to this reflexive morpheme in either Kiowa or Towa.

Internally, the Tiwa proclitics look to be closest in form to their transitive X>3P pronominal series with just a dash of the X>3S pronominals. The Picuris Tiwa and Southern Tiwa first person singular proclitics, ta= and te= respectively, are absolutely identical to their respective 1S>3P proclitics (the Taos proclitic will be addressed below). The second person singular proclitics of all of the Tiwa languages are identical to those of the intransitive paradigm, but also to the transitive 2S>3S in Picuris Tiwa and Southern Tiwa. We find only the reflexive marker occurring in the third person singular, not attached to any pronominal form. This suggests it may be occurring with the null proclitic Ø= indexing transitive 3S>3S. Aside from tone (suggested only by the Taos Tiwa data),

---

intervocalic obstruent as an innovation, as suggested by the long vowel, i.e. compensatory lengthening. The second person plural form bi= would thus suggest an earlier form *bivi=/*bibi=, although no such form is attested in either Tewa language. It may be that the form lost the initial vowel of *obi= as has happened in other second person forms (see chapter 0) and lengthened the vowel of the proclitic by analogy with the other plural reflexive proclitics.

2 There is also a proclitic in Tewa, pi=, which follows the pronominal proclitic and lends some focusing function to one of the indexed arguments. It is possible that this element is related to the Tiwa reflexive in some way, although there is no regular sound correspondence in either lexical stems or grammatical morphemes that pairs a voiceless stop in Tewa with a voiced or nasal stop in Tiwa (except by verb stem-initial consonant ablaut, not applicable here).
the plural proclitics look quite similar to the transitive $XP>3P$ series as though the plural marking coda -w= increment had been removed and the reflexive put in its place. The dual pronominals are also identical to the transitive $XD>3P$ proclitics except for tone. The exceptions are the shared form of the reflexive second and third person dual in Picuris Tiwa, mąm=, and the apparent spread of the third person plural as an alternative to the third person dual for some speakers of Southern Tiwa (seen in the alternating forms in= ~ ibe= 3D.RFL).

The potential for an internal comparison within Tewa is more limited given the reduced size of the transitive paradigm in that branch. Since no number distinctions are made for a third person O argument when the A argument is non-singular, it is effectively moot to try to consider $XNS>3P$ or $XNS>3I$ forms with respect to the reflexive language-internally. For singular A arguments, the modern transitive $X>3A$ proclitics are not related to the reflexive. What we therefore find is that the first and second person singular proclitics, dé(·)= (RGT) / déh ~ dí·= (AT) and bi=, are wholly unique to the reflexive. But, we can see in the table above their similarity to the Kiowa reflexive forms, suggesting their origin as transitive $XS>3I$ proclitics. The third person singular i= is homophonous to the $3S>3$ proclitic found in Rio Grande Tewa, but a wholly distinctive transitive form mąŋ= $3S>3$ is found in Arizona Tewa. However, we have already seen in chapter 15.3 above that this transitive and reflexive proclitic i= is cognate with the transitive $3S>3I$ proclitic of the other languages. The dual reflexive proclitics are almost homophonous with the transitive $XD>3$ proclitics (undifferentiated for the number of the

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3 But, the Southern Tiwa $2P>3P$ form is mąw=, with a nasal stop and low vowel. The voiced oral stop of the reflexive $2P$ be-be= may be a conservative feature or may be derived by assimilation to the oral stop of the reflexive be=, or may be from a combination of both.
O argument) except that they differ in tone. The plural proclitics, minus the old reflexive marker -bí=, do not regularly align with any of the other paradigms. The third person plural diví= (RGT) / dibí= (AT) seems most similar to the intransitive 3A form di=, but may also be related to the transitive 3P>3 proclitic đê= (RGT) / dî= (AT). The first person plural íví= may be relatable to the intransitive first person plural gi=, absent the initial /g/ of the latter paradigm (which I argued in chapter 0 might have been added to the intransitive form by analogy), but it could also be related to the vocalic 1P>3 proclitic of the transitive, ê= (RGT) / i= (AT). The second person plural of Rio Grande Tewa úví= almost looks like the reflexive marker has been added to the second person singular proclitic of the intransitive, with the nasalization lost. However, a glance at the Arizona Tewa form óbí= indicates it may relate more to polyvalent second person forms, some of which begin with o-4.

16.1.1 Reflexive Singular Tiwa Proclitics

The key may lie in a hard look at the Tiwa proclitics. The singular forms are repeated here in Table 16-2.

Table 16-2: Tiwa Singular Reflexive Proclitics

<table>
<thead>
<tr>
<th></th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>tɔ̂</td>
<td>ta</td>
<td>te</td>
</tr>
<tr>
<td>2S</td>
<td>ḡ</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>3S</td>
<td>mɔ̄</td>
<td>ma</td>
<td>be</td>
</tr>
</tbody>
</table>

As already noted above, the second and third person singular reflexive forms appear to be related to, and thus perhaps derived from, transitive X>3s proclitics. The 2S>3S forms are

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4 We saw in chapter 0 that there is evidence that consonant-initial second person forms in Rio Grande Tewa like 2P>3 bíŋ= may have formerly had an initial vowel, i.e. **bįŋ=, as in their Arizona Tewa cognates.
used by themselves in the reflexive while the null $3S \!> 3S$ is accompanied by the reflexive morpheme TA $m\check{\mathfrak{z}}$, Pt $m\check{a}$, ST $be$ =. So what about the first person singular, which seems to be related to transitive $1S \!> 3P$ forms in Picuris Tiwa and Southern Tiwa, not $1S \!> 3S$? It was already suggested in chapter 0, and will be more strongly suggested in chapter 0, that the modern transitive $1S \!> 3S$ form found in all Tiwa languages, $ti$ =, was originally a $1S \!> 3I$ proclitic. The question then becomes what happened to the original Tiwa $1S \!> 3S$ form cognate with Towa $ta =$, Tewa $\check{d}o =$, and Kiowa $gya =$ . My suggestion is that it may be preserved here in the reflexive, at least indirectly: Taos Tiwa $t\check{\mathfrak{z}}$, Picuris Tiwa $ta =$, Southern Tiwa $te =$ . Actually, by regular sound correspondences we would expect Taos $**t\check{o}$, Picuris $**ta =$, and Southern Tiwa $**ta =$ . The Picuris Tiwa form is fine, but the Taos proclitic has a difference in nasalization while the Southern Tiwa form differs in vowel quality. However, we might also notice that the Taos Tiwa form is identical with the transitive-dative $1S \!> S \!> 3S$ form in that language (cf. chapter 0) while the hypothesized Southern Tiwa form $**ta =$ is actually identical to the transitive-dative $1S \!> S \!> 3S$ form in that language, $ta =$ . We will see in chapter 0 that the $1S \!> X \!> 3S$ form can be reconstructed to Proto-Kiowa-Tanoan as the transitive $1S \!> 3S$ ($*TV =$) with nasalization added, i.e. as $*TV \check{a}$ . The Southern Tiwa transitive-dative proclitic $ta =$ appears to have lost its nasalization, a common process in Southern Tiwa, which means a Proto-Tiwa transitive-dative form similar to the modern Taos Tiwa reflex, $*t\check{a}$ . This transitive-dative form would indeed suggest an original Tiwa transitive $1S \!> 3S$ form $*ta =$ .

Is there thence some connection to get us from transitive-dative to reflexive? There may very well be. Consider the Rio Grande Tewa transitive-dative-reflexive paradigm in Table 16-3.
In the derivation of this paradigm, we can see that the dual and plural forms are all taken straight from the transitive $X^{NS}>3$ proclitics and the third person singular $i=$ is derived from $3S>3$ (see chapter 0). These forms are also used in the plain transitive-dative paradigm as well. The first and second person singular forms, however, are unique to this paradigm. The second person singular variant $mæng=$ is similar to the transitive-dative $2S>X>3S$ form $mɑ̨ŋ=$ except for tone and vowel quality (but we'll see in chapter 19.1.2 a relationship between Tewa $/q\!/\!$ and $/æ\!/\!$ which will suggest the forms are not as divergent as they seem). The other second person singular form was addressed in chapter 0 and will be again in chapter 0 with the transitive-dative paradigm. The first person singular form is similar to the transitive-dative $1S>X>3S$ proclitic $dôŋ=$ except for tone. In other words, these transitive-dative-reflexive proclitics seem to derive directly from plain transitive-dative forms. Recall from chapter 11.3 that they are often used in Tewa with divalent predicates to suggest that the A argument has affected an O argument that belongs to, or for the benefit of, him-/herself. It is not unfeasible to conjecture that there was such a usage of basic transitive-dative proclitics before the grammaticalization of these specialized reflexive forms. It appears that the specific transitive-dative forms that were used were those that indexed $1/2S>s>3S$.

If this specialized reflexive-benefactive use of the transitive-dative series could be reconstructed to Proto-Kiowa-Tanoan (or to a proto-stage that includes both Tewa and
Tiwa), we may have a derivation for the Tiwa first person singular reflexive. Taos Tiwa preserves the transitive-dative form with nasalization as $t\tilde{o}=\text{in its reflexive. Picuris Tiwa may also preserve this form, but with loss of nasalization in reflexive $ta=^5$. The Southern Tiwa reflexive form $te=$ is divergent under any explanation, not showing nasalization or the expected vowel correspondence with the Taos Tiwa proclitic. It can be noted that Southern Tiwa has /ɛ/ corresponding with Taos /ɔ̨/ and Picuris /ą/ in a small number of pronominal forms, but this correspondence only seems to occur in a closed syllable (where it appears that Southern Tiwa /ą/ has raised to [ɛ], cf. chapter 19.1.2). We could speculate that early Proto-Southern Tiwa has a proclitic **$ta=$ which changed to **$te=$ and subsequently denasalized to modern $te=$ (but denasalized without the vowel raising in the transitive-dative paradigm to give modern $ta=1s>s>3s$). This is problematic since the phonological environment for the */ą/* to /ɛ/ raising is not present. Alternatively it could be suggested that Southern Tiwa fully replaced an original reflexive form derived from the transitive-dative with a form derived from the modern transitive $1s>3p$ form $te=.$ Considering the modern impersonal use of third person plural proclitics, this may not be far-fetched. We'll see in chapter 19.1.2 that this Southern Tiwa /ɛ/ form causes problems in regular vowel correspondences no matter what explanation we take here.

The above argumentation regarding reflexive use of transitive-dative forms is not problematic for other parts of the Tiwa reflexive paradigm. The same forms are used for transitive-dative $2s>s>3s$, intransitive $2s$, and reflexive $2s$: Taos Tiwa $\varphi=$, Southern Tiwa

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5 Alternatively, Picuris Tiwa may preserve the original transitive $1s>3s$, the Picuris Tiwa reflex of which would still be **$ta=$. Or, Picuris Tiwa may have followed the same innovation as one of the possible explanations for Southern Tiwa, in coopting the $1s>3p$ form later in its development.
This form thus provides neither support nor contradiction for the above story. One could point out that the third person singular and the non-singular reflexive forms are not shared with the modern Tiwa transitive-dative forms, which could run counter to the above conjecture. However, note that in the Tewa transitive-dative-reflexive paradigm, the third person singular and the non-singular persons do not show specially developed forms. Only the first and second person singular, $dɔŋ=$ and $mæŋ= \sim gæŋ=$ respectively, are distinct from the plain transitive-dative or from the transitive. There may simply not be common enough reflexive-benefactive usage with other persons and numbers to license specialized development. Thus, there may not have been motivation for this transitive-dative construction to affect the third person singular or the non-singular persons of the reflexive paradigm. These forms simply maintained their origin from transitive $X>3S$ forms.

### 16.1.2 Reflexive Non-Singular Proclitics

The non-singular reflexive proclitics of Tiwa, repeated in Table 16-4, do not render the historical analysis any easier.

Table 16-4: Tiwa Non-Singular Reflexive Proclitics

<table>
<thead>
<tr>
<th></th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1D</td>
<td>kɔ́n</td>
<td>kɔ́m</td>
<td>kɔ́n</td>
</tr>
<tr>
<td>2D</td>
<td>mɔ́n</td>
<td>mɔ́m</td>
<td>mɛ̀n</td>
</tr>
<tr>
<td>3D</td>
<td>n̄</td>
<td>mₐm</td>
<td>īn</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>~ ibe</td>
</tr>
<tr>
<td>1P</td>
<td>ki-mɔ̄</td>
<td>ki-mₐ</td>
<td>ki-be</td>
</tr>
<tr>
<td>2P</td>
<td>mɔ́-mɔ̄</td>
<td>mɭ-mₐ</td>
<td>be-be</td>
</tr>
<tr>
<td>3I</td>
<td>i-mɔ̄</td>
<td>i-mₐ</td>
<td>i-be</td>
</tr>
</tbody>
</table>

---

6 There are no reported transitive-dative proclitics in Picuris Tiwa, but this second person form is still shared between the intransitive, transitive, and reflexive).
The dual proclitics are most similar to the transitive \( XD>3P \) forms, except for tone, as indicated solely by Taos Tiwa, and the shared \( 2D \) and \( 3D \) reflexive form in Picuris, \texttt{m\=a\=m}\=. They differ from the transitive \( XD>3S \) both in tone and in the initial /k/ of the first person dual form and in the final /m/ in the Picuris Tiwa reflexive forms. The plural reflexive proclitics do match the transitive \( XP>3S \) forms for tone, but differ in the presence of first person /k/ and some divergent vowels in the Picuris Tiwa and Southern Tiwa second person. Here the transitive \( XP>3P \) are only closer in sharing the first person /k/ with the reflexive, but show differences in tone and the same vowel issues. The transitive \( XP>3P \) forms also regularly bear the number-marker \texttt{-w=\ (=w=\)}, which may be the key to solving the development of the reflexive paradigm.

Where the number-marking increments, \texttt{-m=\ (=m=\)} inverse and \texttt{-w=\ (=w=\)} plural, are most regular (in the dative paradigms), they are simply agglutinated to the unmarked singular O argument form. However, these increments are not regularly applied within the transitive paradigm. The inverse increment \texttt{-m=} effectively never occurs and the plural increment \texttt{-w=} only occurs with plural A arguments. However, we still might be able to analyze the \texttt{-w=} as being attached to an unmarked form which would regularly mark singular. Within the Tiwa languages, this is almost true: remove the \texttt{-w=} from the \( XP>3P \) forms and you get the \( XP>3S \) forms, except for the respective presence versus absence of the first person non-singular /k/ and the tone\(^7\). Tone in Tiwa often changes in association with final consonants, including the number increments, and still needs analysis, so we'll set this issue aside for now. This leaves us with the issue of the distribution of first person non-singular /k/.

\(^7\) Picuris has some other divergences. See chapter 0.
Within Tiwa, and within the proposed reconstruction of the Proto-Kiowa-Tanoan paradigms, the /k/ is found only on first person non-singular forms in the intransitive-dative paradigm and in the transitive \( X>3P \) paradigm. The one commonality between both of these sets is that the third person argument is, or overwhelmingly tends to be, inanimate. The third person plural O argument in the transitive only indexes inanimate plural while the third person S argument in the intransitive-dative, usually expressing a possessed entity, tends to be inanimate\(^8\). I would suggest therefore that the /k/-initial proclitics reflect the original first person non-singular proclitics, which are only preserved as such when the non-first person argument is frequently inanimate. Where this argument is often animate (throughout the rest of the transitive paradigm and maybe in the transitive-dative) the first person non-singular has merged with the third person inverse, an inherently animate category when expressing non-singular number.

To get us back to the Tiwa reflexive, the plural reflexive forms may thus represent transitive \( XP>3S \) forms which predate the merger of inverse and first person non-singular or may reflect an explicitly inanimate O argument. We can see from the third person singular reflexive and from the combination of the reflexive morpheme \( mə= (TA) / mə= (PI) / be= (ST) \) with the dative proclitics that it seems to elicit overt indexation as a third person singular argument. Although I am not certain of the origin of the reflexive morpheme, it is not unlikely that it originates as an incorporated noun (cf. also Rosen 1990), probably referring to an inanimate entity, perhaps a body part given cross-linguistic tendencies (cf. Frajzyngier and Curl 2000, Kemmer 1993). Thus, the plural Tiwa plural reflexive forms originate as transitive \( XP>3S \), where the third person singular

\(^8\) They do not infrequently index kinship terms, however, which are of course animate.
O marking indexes the reflexive morpheme. Either because of the originally inanimate referent of the reflexive or because of sheer conservativeness where the reflexive forms were frozen before the first person merger with inverse, we have the /k/ in the first person plural. The divergent second person plural forms for Picuris Tiwa, mij-ma=, and Southern Tiwa, be-be=, may reflect some conservativeness and some language-internal innovation. See chapter 0.

Even if we accept the above scenario for Tiwa, there is still the issue of the plural reflexive forms in Tewa, which also appear to contain a reflex of the reflexive morpheme, -bí~ -ví=. These are repeated in Table 16-5.

Table 16-5: Tewa Plural Reflexive Proclitics

<table>
<thead>
<tr>
<th></th>
<th>RGT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1P</td>
<td>ñíví ~ ñí</td>
<td>ñibí</td>
</tr>
<tr>
<td>2P</td>
<td>ñúví ~ ñbí</td>
<td>ôbí</td>
</tr>
<tr>
<td>3l</td>
<td>ñdíví ~ ñdí</td>
<td>ñdíbí</td>
</tr>
<tr>
<td>3H</td>
<td>ñdíví ~ ñdí</td>
<td>ñdíbí</td>
</tr>
</tbody>
</table>

The Tewa proclitics look as though there has been language-internal innovation postdating the split from Tiwa if not also the split from all the other branches. We see no initial velar in the first person plural ñíví= (RGT) / ñibí= (AT); we do see an initial alveolar in the third person plural ñdíví= (RGT) / ñdíbí= (AT); and we see what appears to be a second person singular morpheme in the second person plural ñúví= (RGT) / ñbí=. There is no portion of the modern Tewa transitive paradigm from which we can derive these forms by simple agglutination of the reflexive morpheme. However, it may be that at some Proto-Tewa or Pre-Proto-Tewa stage after the forms of the transitive paradigm began to be reshaped (loss of the first person velar, addition of the third person non-
singular alveolar, spreading of the second person singular **o= to non-singular and third person usages) but before the reflexive morpheme lost productivity, the first part of the reflexive proclitics were altered to reflect the new transitive $Xp>3s$ patterns.

Finally we have the Tiwa dual forms, which do not show the reflexive morpheme. It is possible that the coda nasal seen in Tiwa dual forms blocked the occurrence of the reflexive in some way and that these proclitics also derive from some archaic form of the transitive $Xd>3s$ paradigm. Alternatively, being so similar to the modern transitive $Xd>3p$ proclitics (and the intransitive-dative $X>>Xd$ proclitics), it may be that the reflexive dual forms have simply been shaped by analogical pressures or reanalysis due to the unspecified object use of the $X>3p$ pronominals. The dual forms here, as elsewhere in the Kiowa-Tanoan (and Tiwa-specific) reconstructions, are mildly problematic and less variable than singular and plural forms.

**16.2 Summary of the Reflexive Reconstruction**

Having walked through hypotheses of the development of the reflexive proclitics from transitive forms in all of the languages, can we now reconstruct any reflexive forms for Proto-Kiowa-Tanoan? It would be tenuous at best. We find that Kiowa seems to have developed its reflexives from transitive $X>3i$ (at least the singular forms), Towa from transitive $X>3p$, and Tiwa seemingly from transitive $X>3s$. Thus, we can reasonably speculate that the Proto-Kiowa-Tanoan reflexive was derived from transitive $X>3$ proclitics, perhaps with an overt reflexive morpheme with some arguments, but that could be as far as we can go.
Given the forms discussed for Tiwa above and the presence of what seems to be
the reflexive morpheme in both the Tiwa and Tewa branches, I think we can make a
guess. The proposed conservative forms with the Tiwa plural reflexive proclitics leads
me to suspect that the Tiwa branch is the most conservative here and that Proto-Kiowa-
Tanoan derived its reflexive proclitics from transitive $X>3S$ forms. I present the possible
reconstruction of these proclitics in Table 16-6.

Table 16-6: Schematic Reconstruction, Reflexive Paradigm.

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$^\ast TV$</td>
<td>$^\ast QV$</td>
<td>$^\ast QV-bV$</td>
</tr>
<tr>
<td>2</td>
<td>$^\ast V$</td>
<td>$^\ast bV$</td>
<td>$^\ast bV-bV$</td>
</tr>
<tr>
<td>3</td>
<td>$^\ast B-bV$</td>
<td>$^\ast V$</td>
<td>$^\ast V-bV$</td>
</tr>
</tbody>
</table>

Under this proposal, the first and second person singular forms were exactly identical to
the transitive $XS>3S$ proclitics$^9$. The third person singular and the plural persons involved
the use of the reflexive morpheme. The dual proclitics were exactly identical to the
transitive $XD>3S$ proclitics.

While I present the above as a possibility, I admit that it is highly suspect. I will
not be surprised if further research and argumentation overthrows the above proposal.
Bill Croft (p.c.) suggests the possibility that the grammaticalization of the passive was
only getting started at the time that PKT was breaking up leading the different branches
to innovate different constructions for the reflexive function. It will require further
investigation to sort out the possibilities of the developments in this paradigm.

$^9$ There is no reason to believe, or disbelieve, that the above reflexive use of the transitive-dative proclitic s
was at play in the reflexive paradigm in the proto-language. For simplicity’s sake I do not assume it was, so
first person singular is reconstructed as $^\ast TV=$, not as $^\ast TV=$.
17 Transitive-Dative: Historical Reorganization

The transitive-dative paradigm is both complex and simple at this point in the comparative analysis. On the one hand it indexes, or is at least licensed by, three arguments. Also, given how infrequently the paradigm is used and how complex it is, the different languages have independently innovated it on the basis of the other paradigms. On the other hand, this innovation has largely been through analogical change and by coopting pronominal forms from other paradigms. This means that there are relatively few proclitics that are unique to the transitive-dative series. Unsurprisingly the more unique forms occur when singular (i.e. unmarked) number is being indexed. The greater the semantic complexity, the less unique the forms become, undoubtedly a result of the lesser frequency with which these more complex semantics occur.

17.1 Singular Third Person D Arguments, Transitive-Dative

17.1.1 Transitive-Dative Xs>X>3s Proclitics

Table 17-1 presents the proclitics that index a singular A argument and a third person singular D argument. Recall that there is no report of a transitive-dative series in Picuris Northern Tiwa. This language is therefore omitted from the tables throughout this section.
Already in this first set, we see some new proclitics, some that we have encountered before, and gross patterns that will be familiar from previous paradigms. In terms of new forms, the first person singular proclitics in all but Kiowa are unique to the transitive-dative series. The Rio Grande Tewa is a new finding within that language, although we have encountered its Arizona Tewa cognate already in the transitive paradigm (where AT = indexes 3S>3). In terms of general patterns, the number indexation of the O argument shows the same form-meaning correspondence as does the indexation of the S argument in the intransitive-dative of chapter 0. In Tiwa the singular is unmarked, the inverse is marked by the increment -m=, and the inanimate plural is marked by -w=. In Towa the singular/basic number is unmarked and the dual and inverse are marked by -l-. In Kiowa the number indexation is primarily reflected in the vowel:

---

1 The Taos Tiwa 1s>s>3s proclitic is homophonous with the reflexive in that language. This is not a coincidence, as was discussed in chapter 16.1.1.

2 The form with falling tone to the right of the slash, mųŋ=, is the imperative form.
singular unmarked, inverse with /ɔ/, dual with /e/, and plural with /(i)a/). Non-singular numbers also sport the coda number increment -d=. The Tewa languages never index the number of the O argument. We also see neutralization of the second/third person singular distinction in all but the Tewa languages, familiar from part of the transitive paradigm. In terms of familiar forms, the reader may recognize all of the Kiowa proclitics, the Tewa third person singular proclitics, and the merged second and third person proclitics of Tiwa and Towa from the intransitive-dative paradigm, as well as the aforementioned Arizona Tewa second person form from the transitive paradigm.

The regularities of number indexation for the O argument suggest that we can reconstruct the same number morphemes in use here as we did in the intransitive-dative paradigm in chapter 14.5, repeated here in Table 17-2.

Table 17-2: Reconstructed Number-Marking Coda Morphemes

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>P</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>*Ø</td>
<td>*d/*n</td>
<td>*D</td>
<td>*m</td>
</tr>
</tbody>
</table>

These morphemes, realized as coda consonants, are affixed to the right edge of the pronominal proclitic which indexes the person and number of the A argument and/or the D argument. We can thus set this part of the transitive-dative proclitics aside for the following discussion.

Given the presence of both a dative argument and A and O arguments, it should not be surprising to find that the transitive-dative paradigm shares features and forms with both the intransitive-dative and the transitive. The first person singular proclitic, for instance, can probably be reconstructed as *TV̨ on the basis of Towa and Tiwa (and Tewa). Even though this form is unique to the transitive-dative paradigm, it appears to
derive from the $1S>3S$ form of the transitive paradigm. Namely it seems to be derived by adding nasalization to the transitive $1S>3S$ proclitic, much as some of the intransitive-dative proclitics appear to derive by nasalizing intransitive proclitics (see chapter 19.2 for the formal support). The Tewa languages also show the nasal coda /ŋ/ which is regularly associated with the dative paradigms\(^3\). Southern Tiwa shows the regular denasalization that often applies to pronominal forms in that language.

The Kiowa $1S>X>3S$ proclitics, on the other hand, are identical to the intransitive-dative $X>>2S$ forms and do not appear to be cognate with the transitive-dative proclitics of the other languages. We shall find in chapter 0 that the same forms are also used for the transitive-dative $1S>X>2S$. It was already shown in chapter 0 that these proclitics are cognate with the intransitive-dative $X>>2S$ forms of Tiwa and Towa. Thus, in Kiowa it appears that the intransitive-dative $X>>2S$ forms have been extended to the transitive-dative paradigm when the A argument is first person singular\(^4\). The diachronic shift between second and third person then applied so that the $1S>X>2S$ proclitics came to be used for $1S>X>3S$ as well.

Both the $2S>X>3S$ and the $3S>X>3S$ proclitics appear to be reconstructable as homophonous $*\gamma=\eta=$ on the basis of Kiowa, Tiwa, and Towa, none of which have distinct forms indexing a second person singular versus a third person singular A argument. The Tewa $3>X>3S$ proclitic $\delta\eta=$ (with the number of the A argument unspecified) also

---

\(^3\) The Tewa $1S>X>3S$ proclitic $d\delta\eta=$ actually seems not to be directly cognate with the corresponding proclitics of the other languages. Rather, it is directly derived from the transitive by affixing the dative-marker $-\eta=$ to the transitive forms.

\(^4\) A different set of proclitics is used when the A argument is any other person or number, as will be discussed in chapter 0. Why these intransitive-dative proclitics came to imply only a first person singular A argument is not entirely clear. Perhaps it is due to the historically applied person-animacy hierarchy (which would disprefer a third person A argument reading) and/or discourse frequency effects (which would probably disprefer a first person non-singular reading and show a high frequency of combining a first person singular A argument with a second person singular D argument).
appears to be cognate, at least partly. These proclitics are not unique within this paradigm, however. Like the Kiowa forms just discussed in the previous paragraph, these pronomininals are identical to intransitive-dative proclitics, those indexing $X_{>>3S}$, from which these transitive-datives pronomininals undoubtedly originate. Deriving from the intransitive-dative, there would originally have been no A argument encoded, leading to the ambiguous reading of second or third person singular in the transitive-dative. No first person A argument reading is available due to the presence of another form to fill this function and only singular number is indexed perhaps due to its unmarked status, given that non-singular number of the A argument is otherwise encoded in the rest of the paradigm.

The Tewa $2S_{>>3S}$ proclitics $m\hat{\eta}$ seem to be an innovation, perhaps in order to distinguish second from third person A arguments. It was noted earlier that second person singular is not regularly marked by a bilabial stop (/b/ or /m/) in Kiowa-Tanoan, this being regularly associated with non-singular second person. But, as in the innovative Kiowa transitive $2S_{>3I}$ proclitic $b\dot{e}$ (and the derived $2S_{>3H}$ form $b\dot{e}$) and the cognate Tewa $2S$ reflexive $bi\dot{e}$, the bilabial may spread to the singular as the most recognizable form associated with second person. The nasal quality of the stop in this transitive-dative Tewa proclitic suggests an origin as a second person dual form, perhaps being an extended (and preserved) instance of the original Tewa $2D_{>>3S}$ proclitic that was

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5 It may not be insignificant that the $X_{>>3S}$ proclitics perhaps originate from intransitive or transitive second person singular forms, cf. chapter 0.
otherwise lost\textsuperscript{6}. In any case there is no reason to think it was an original member of this part of the transitive-dative paradigm.

### 17.1.2 Transitive-Dative $X_P>X>3s$ Proclitics

Table 17-3 below presents the transitive-dative proclitics that index a third person singular D argument with a plural A argument.

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>D</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1P$</td>
<td>S</td>
<td></td>
<td>ê·</td>
<td>\textit{ê}·</td>
<td></td>
<td>ipım</td>
<td>mım</td>
<td>se</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td></td>
<td>édê·</td>
<td>1P$&gt;$X$&gt;$3</td>
<td>ipiw</td>
<td>mìw</td>
<td>se-l</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D</td>
<td></td>
<td>égê·</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>P</td>
<td></td>
<td>è·</td>
<td>ì·</td>
<td></td>
<td>ipiw</td>
<td>mìw</td>
<td>se-l</td>
</tr>
<tr>
<td>$2P$</td>
<td>S</td>
<td></td>
<td>bà·</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I</td>
<td></td>
<td>bōdê·</td>
<td>bê·</td>
<td></td>
<td>m̄pìm</td>
<td>èm</td>
<td>bā</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td></td>
<td>bēdê·</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>P</td>
<td></td>
<td>bāgê·</td>
<td>bê·</td>
<td></td>
<td>m̄pìw</td>
<td>iw</td>
<td>m̄jw</td>
</tr>
<tr>
<td>$3H$</td>
<td>S</td>
<td></td>
<td>å·</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I</td>
<td></td>
<td>dê·</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D</td>
<td></td>
<td>dē·</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>P</td>
<td></td>
<td>gyā·</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$3I$</td>
<td></td>
<td>égê·</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here we see unique forms in Kiowa and somewhat in Southern Tiwa. The proclitics in Tewa and Towa we have encountered before while in Taos Tiwa, even if the actual realized forms are new, the constituent morphemes are not. The Towa forms are identical to both the $X$>$>3P$ proclitics of the intransitive-dative and to the $X_P$>$>3s$ proclitics of the transitive, notwithstanding the inverse-marking -l-. The Tewa first and second person

\textsuperscript{6} Also recall its further extension into the Arizona Tewa transitive paradigm to index $3_S$>$>3$, mentioned in chapter 15.1.
plural proclitics are also identical to their transitive $XP\!>\!3$ forms. Indeed, we shall see these proclitics never specify the number of a third person D argument. The third person is the same as seen with singular A arguments above, $\hat{\delta}n = (\text{RGT})$ / $\check{\delta}n = (\text{AT})$ indexing $3\!>\!X\!>\!3S$ without specifying the number of the A argument. In Taos Tiwa and Kiowa, the first person plural and third person inverse proclitics are identical, as is the common pattern, while Towa's first person plural shows the common addition of the first person non-singular /$s$/ marker. Southern Tiwa shows distinctive first and third person plural forms, but second person plural is reported as the same as either the first or the third in different sources. We will see below that these actual Southern Tiwa forms ($m\hat{i}m$, $m\check{i}w$, $\hat{i}m$, $iw$) are sprinkled throughout the transitive-dative paradigm. Both Tiwa languages show merger between the singular and inverse number forms in their O argument indexation.

Here we start to see the rampant innovations all of the languages have made to fill out the transitive-dative paradigm. It may be impossible, or perhaps even moot, to reconstruct the Proto-Kiowa-Tanoan forms that filled the transitive-dative functions. The prevailing patterns suggest these $XP\!>\!X\!>\!3$ forms were originally identical to the transitive $XP\!>\!3$ proclitics, which here indexed the A and D arguments, followed by the O argument number marker. Thus, $2p\!>\!X\!>\!3S$ would be $*bV=$, $3p\!>\!X\!>\!3S$ would be $*V=$, and $1p\!>\!X\!>\!3S$ would be either $*V=$ or $*QV=$, depending on what dictates the distribution of the onset first person non-singular $*Q$ (see chapter 16.1.2 and 19.2 for discussion of this issue). Absence of the initial velar across Kiowa, Tewa, and Tiwa would suggest an original absence, but there is no compelling reason to think the proclitics in these

---

7 These are largely identical to the reconstructed intransitive-dative $X\!>>\!XP$ proclitics as well.
languages are directly comparable to reach this conclusion. I will not resolve this question in the present work.

In terms of innovation, both the Tiwa and Kiowa proclitics require some explanation. The Tewa and Towa forms are straightforward imports from other paradigms (or at least, straightforwardly shared between paradigms). In Taos Tiwa, by removing the O number-marking coda we see that the proclitics are identical to the transitive $XP>3t$ forms. Here, however, it appears that the inverse increment -pi= is marking the plurality of the A argument more than it is indicating the number of either the O or D arguments. We shall see further indication of this marking of A argument number below. These exact forms will indeed be seen elsewhere in the transitive-dative paradigm.

The Southern Tiwa forms may also be explained via this inverse increment. We will find the bilabial-initial proclitics mj= / mjw= (or variants thereof) spread throughout the transitive-dative to index $I>X>3NS$, $I>X>2D$, $2P>X>I$, and $2>X>3$, although there is variation reported on this last point. The vowel-initial proclitics jm= / iw= (and variants thereof) will be found to index all $3>X>3$ functions as well as $2>X>3$ (in some sources). The latter forms originate as third person inverse forms (lacking the inverse increment of Southern Tiwa, -bi=) and are not problematic in their distribution. The bilabial-initial forms, on the other hand, may have two potential sources. On the one hand, the initial /m/ may be a reflex of the stop that indexes a second person non-singular argument, as we have seen throughout the paradigms. These second person forms then spread to index third person dative arguments, a process we have also seen before. Under this development, it is curious for them to be used even when a first person A argument is
acting on a third person D argument, considering the operation of the person-animacy hierarchy. On the other hand, the bilabial may be a reflex of, or be influenced by, the inverse marker -bi=, which has come to index the number of the A argument in Tiwa, with subsequent spread through the paradigm. We will see suggestions below that the former hypothesis, derivation from second person, is the more likely, but I mention the latter as a possibility. If these bilabial-initial proclitics do originate from the second person, then that would mean that the reanalysis of the inverse increment -pi= is a Taos-internal innovation not generalizable to the whole Tiwa branch.

Finally, we have the innovative Kiowa proclitics. These, and many of the other transitive-dative proclitics, belong to Watkins' (1984) mixed: object paradigm, forms that share certain formal and functional features in common. They are the only Kiowa proclitics to bear long vowels or to be disyllabic. This set is only used with non-singular A arguments affecting first or third person singular D arguments. Those indexing a third person A argument (and, by extension, first person plural, identical with the third person inverse) are identical to the transitive 3NS>3 proclitics except that a copy of the O argument number-indexing vowel follows the non-singular -d= increment. The copied vowel is long and bears falling tone. With a singular O argument where there is no -d=, it is the sole vowel of the proclitic that is lengthened and bears the falling tone. For the third person human plural A argument forms, the singular á'= is regularly produced (< á'=), as is the inanimate plural gyá'= (< gyá'=), where the non-singular increment and the vowel have metathesized in the transitive form. The metathesis is kept and the vowel is lengthened like in the singular. In the dual dê'= and inverse dɔ'=, on the other hand, it seems that the -d= increment and the vowel have metathesized in the transitive-dative
where they are not metathesized in the transitive form (homophonously < et= and et= respectively). The number-marking vowel replaces the original /e/ and is lengthened and takes falling tone as usual. Those proclitics that index a second person non-singular A argument are formed the same way except that the vowel preceding the -d= is the same as the number marking vowel that follows, thus showing some formal similarity to the intransitive-dative X>>2NS proclitics.

No cognates to these formally unique Kiowa proclitics are to be found in the other languages, suggesting they are a language-internal innovation\(^8\). They do effectively serve to differentiate transitive-dative usage from transitive. Note too that this is another set that shows derivation of the transitive-dative from the transitive rather than from the intransitive-dative, as we saw with some of the singular A arguments (and more of which we shall see below).

**17.1.3 Transitive-Dative XD>X>3s Proclitics**

Table 17-4 shows the transitive-dative proclitics that index a dual A argument with a third person singular D argument.

---

\(^8\) Alternatively they could be conservative from Proto-Kiowa-Tanoan, a possibility if Kiowa was the first language to separate from the others in the family, although there is no indication that they are conservative forms. Also, the presence of long vowels in these forms, not otherwise found throughout the Kiowa paradigm, suggests they are innovations.
Table 17-4: Transitive-Dative \( XD>3S \) Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>D</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1D</td>
<td>S</td>
<td></td>
<td>ê·</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
<td></td>
<td>édō·</td>
<td>1D&gt;3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
<td>édē·</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
<td></td>
<td>égi·</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td></td>
<td></td>
<td>mā·</td>
<td>2D&gt;3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
<td></td>
<td>mōnē·</td>
<td>2D&gt;3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
<td>mēnē·</td>
<td>2D&gt;3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>S</td>
<td></td>
<td>ô·</td>
<td>3&gt;3S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
<td></td>
<td>énō·</td>
<td>3&gt;3S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
<td>énē·</td>
<td>3&gt;3S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
<td></td>
<td>énī·</td>
<td>3&gt;3S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The reader will see all of the same issues at hand here as we saw with the plural A arguments. The Kiowa proclitics are new, but are derived from the transitive \( XD>3 \) forms as was described in the previous section. The Tewa first and second person proclitics are direct carry-overs from the transitive and the third person shows the same \( 3>X>3S \) form as seen in the previous two tables. The Towa proclitics are also identical to their transitive \( XD>3S \) counterparts and to the intransitive-dative \( X>>XD \) forms. The Taos Tiwa proclitics are also imported from the transitive, from the \( XD>3I \) paradigm, once the number-marking coda /m/ and /w/ are removed. Note again here that the inverse increment -\( pί= \), changed to -\( pē= \) under the dual nasalization before the /n/, is marking the number of the A argument rather than the O or D argument.

In Southern Tiwa we see the same forms used with first person dual as used with first person plural. In the (identical) second and third person dual, on the other hand, we find what appear to be reduplicated forms of the third person plural proclitics. We will also see this reduplication with other dual forms below. This may simply be an
idiosyncratic development of Southern Tiwa, the reduplication standing in for the usual
derivation of the dual from the plural. Alternatively, it may be that we have a usage of the
inverse increment -bi=, reflected in the first /m/ in imjm=, originally marking the dual A
argument. The nasal assimilation and the number-marking -m= may have accidentally
led this form to appear reduplicated, which was then reanalyzed and applied to the plural
object form to give iwiw=.

As with the plural A arguments, we can probably reconstruct the transitive-dative
paradigm here to be identical with the transitive XD>3S series: second person *bV=, third
person *V=, and first person *V= or *QV=.

17.1.4 Summary of the Transitive-Dative X>X>3S Proclitics

The reconstructed transitive-dative proclitics indexing a third person singular D
argument are given in Table 17-5.

Table 17-5: Schematic Reconstruction, Transitive-Dative X>X>3S Paradigm

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>*TV</td>
<td>*(Q)V</td>
<td>*(Q)V</td>
</tr>
<tr>
<td>2</td>
<td>*V</td>
<td>*bV</td>
<td>*bV</td>
</tr>
<tr>
<td>3</td>
<td>*V</td>
<td>*V</td>
<td>*V</td>
</tr>
</tbody>
</table>

The number-markers indexing the number of the O argument are added following these.
Only the first person singular form is unique to the transitive-dative paradigm. The non-
singular A argument forms all are identical to transitive counterparts while the
homophonous second and third person singular are identical to the intransitive-dative
X>>3S.
17.2 Non-Singular Third Person D Arguments, Transitive-Dative

Although there are some curious forms and usages in Southern Tiwa, the rest of the transitive-dative paradigm indexing a third person non-singular D argument in all of the languages are wholesale imports from other paradigms. In Kiowa the forms are shared with the intransitive-dative, but in the other languages, it seems to be the transitive that is more directly relatable. I will briefly address each language in turn for the rest of this paradigm rather than dividing it up by grammatical number. Because we have already seen and discussed all of the forms, I will not be repeating their historical development.

17.2.1 Kiowa Transitive-Dative X>X>3NS Proclitics

Kiowa has the fewest number of forms in the paradigm that indexes a non-singular D argument, shown in Table 17-6.

Table 17-6: Kiowa Transitive-Dative X>X>3NS Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>D</th>
<th>K₁</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>S</td>
<td>3D</td>
<td>mé</td>
</tr>
<tr>
<td>X</td>
<td>D/P/I</td>
<td>méén</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>S</td>
<td>3P</td>
<td>bé</td>
</tr>
<tr>
<td>X</td>
<td>D/P/I</td>
<td>bét</td>
<td></td>
</tr>
</tbody>
</table>

These proclitics leave the person and number of the A argument entirely unspecified and even the distinction among the three non-singular numbers for the O argument is neutralized. The reader may recall these curious forms from chapter 14.3, where they appear in the intransitive-dative paradigm indexing X>>3D and X>>3P. The semantically simpler intransitive-dative usage is probably the original, although the lack of cognates in other languages makes this uncertain. The initial bilabial stop is anomalous in a form
indexing only third person, leading to the suggestion in chapter 0 that these may illustrate another instance of using second person forms for third person.

17.2.2 Tewa Transitive-Dative X>X>3ns Proclitics

Table 17-7 gives the Tewa proclitics indexing a third person non-singular D argument.

Table 17-7: Tewa Transitive-Dative X>X>3ns Proclitics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>D:</th>
<th>RGT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1s</td>
<td>X</td>
<td>3d</td>
<td>dovēŋ</td>
<td>dobēŋ</td>
</tr>
<tr>
<td>2s</td>
<td>X</td>
<td>3d</td>
<td>ovēŋ</td>
<td>mōbēŋ</td>
</tr>
<tr>
<td>3</td>
<td>X</td>
<td></td>
<td>obēŋ</td>
<td></td>
</tr>
<tr>
<td>1s</td>
<td>X</td>
<td>3p</td>
<td>dovē</td>
<td>dobē</td>
</tr>
<tr>
<td>2s</td>
<td>X</td>
<td>3p</td>
<td>ovē</td>
<td>mōbē</td>
</tr>
<tr>
<td>3</td>
<td>X</td>
<td></td>
<td>obē</td>
<td></td>
</tr>
<tr>
<td>1d</td>
<td>X</td>
<td>3</td>
<td>ãŋ</td>
<td>əŋ</td>
</tr>
<tr>
<td>2d</td>
<td>X</td>
<td></td>
<td>dēŋ</td>
<td>dēŋ</td>
</tr>
<tr>
<td>1p</td>
<td>X</td>
<td></td>
<td>ẹ</td>
<td>í</td>
</tr>
<tr>
<td>2p</td>
<td>X</td>
<td>3</td>
<td>]</td>
<td>óbíŋ</td>
</tr>
</tbody>
</table>

Number of the D argument is unspecified whenever there is a first or second person non-singular A argument while the number of a third person A argument is unspecified whenever combined with a third person D argument. Number of the O argument is always unspecified, as is typical in Tewa. All of these forms are the same as those occurring in the transitive paradigm proclitics that index a third person O argument. Note that the dative marker /ŋ/ does not occur in all of the non-singular imports from the transitive paradigm throughout the transitive-dative series in Tewa, the only occurring /ŋ/
marking a dual argument or the second person plural. Thus the dative marker only occurs in the transitive-dative when both the A and D arguments are singular.\(^9\)

### 17.2.3 Towa Transitive-Dative X\(>\)X\(>\)3NS Proclitics

In Towa also we find forms exactly identical to those found in the transitive, as shown in Table 17-8.

**Table 17-8: Towa Transitive-Dative X\(>\)X\(>\)3NS Proclitics**

<table>
<thead>
<tr>
<th>A ↓</th>
<th>D ↓ / O →</th>
<th>S</th>
<th>D/I</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>3D</td>
<td>tj</td>
<td>tj-l</td>
</tr>
<tr>
<td>2S</td>
<td></td>
<td>ĭ</td>
<td>ĭ-l</td>
</tr>
<tr>
<td>3S</td>
<td></td>
<td>te</td>
<td>te-l</td>
</tr>
<tr>
<td>1D</td>
<td>3P</td>
<td>sapa</td>
<td>sapa-l</td>
</tr>
<tr>
<td>2D</td>
<td></td>
<td>mảpa</td>
<td>mảpa-l</td>
</tr>
<tr>
<td>3D</td>
<td></td>
<td>apa</td>
<td>apa-l</td>
</tr>
<tr>
<td>1P</td>
<td>3NS</td>
<td>sepa</td>
<td>sepa-l</td>
</tr>
<tr>
<td>2P</td>
<td></td>
<td>bapa</td>
<td>bapa-l</td>
</tr>
<tr>
<td>3P</td>
<td></td>
<td>epa</td>
<td>epa-l</td>
</tr>
</tbody>
</table>

The only major difference is the usage of the O argument number marker -l- here, not found with the homophonous proclitics in the transitive. We still see no distinction between second and third person singular A arguments when combined with non-singular third person O/D arguments. We also see the dual-plural contrast for the third person D/O argument lost when combined with non-singular A arguments.

---

\(^9\) Which does raise the question of whether I should call this /ŋ/ a "dative marker" in Tewa. I do not find it problematic to suggest that this segment has come to overtly mark dative usage only in the least marked of forms, i.e. the singular or in the semantically simpler intransitive-dative. Other researchers may opt for a different analysis, however.
17.2.4 Tiwa Transitive-Dative $X>X>3NS$ Proclitics

Finally, Table 17-9 gives the remaining transitive-dative proclitics indexing non-singular third person D arguments for Tiwa. In neither Tiwa language is the singular and inverse ever distinguished in this part of the paradigm.

Table 17-9: Tiwa Transitive-Dative $X>X>3NS$ Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>D</th>
<th>TA</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S/D</td>
<td>s/i 3D</td>
<td></td>
<td>ɔpénɛm</td>
<td>bibɨm</td>
</tr>
<tr>
<td>1P</td>
<td></td>
<td>ipɨm</td>
<td>~ mɨm(im)</td>
<td></td>
</tr>
<tr>
<td>1S/D</td>
<td>p 3D</td>
<td></td>
<td>ɔpénɔw</td>
<td>bibiw</td>
</tr>
<tr>
<td>1P</td>
<td></td>
<td>ipɨw</td>
<td>~ mɨw(iw)</td>
<td></td>
</tr>
<tr>
<td>1S/D</td>
<td>s/i 3P</td>
<td></td>
<td>ɔpénɛm</td>
<td>ɓɨm</td>
</tr>
<tr>
<td>1P</td>
<td></td>
<td>ipɨm</td>
<td>~ mɨm</td>
<td></td>
</tr>
<tr>
<td>1S/D</td>
<td>p 3P</td>
<td></td>
<td>ɔpénɔw</td>
<td>biw</td>
</tr>
<tr>
<td>1P</td>
<td></td>
<td>ipɨw</td>
<td>~ mɨw</td>
<td></td>
</tr>
<tr>
<td>2S/D</td>
<td>s/i 3D</td>
<td></td>
<td>mɔpɛnɛm</td>
<td>mɨm</td>
</tr>
<tr>
<td>3S/D</td>
<td></td>
<td></td>
<td>~ imɨm</td>
<td></td>
</tr>
<tr>
<td>2S/D</td>
<td>p 3D</td>
<td></td>
<td>ɔpɛnɛm</td>
<td>imɨm</td>
</tr>
<tr>
<td>3S/D</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2S/D</td>
<td>s/i 3P</td>
<td></td>
<td>mɔpɛnɔw</td>
<td></td>
</tr>
<tr>
<td>3S/D</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2P</td>
<td>s/l 3D</td>
<td></td>
<td>mɔpɨm</td>
<td>mɨm</td>
</tr>
<tr>
<td></td>
<td>3P</td>
<td></td>
<td>~ ɨm</td>
<td></td>
</tr>
<tr>
<td>3P</td>
<td></td>
<td></td>
<td>ɨm</td>
<td></td>
</tr>
<tr>
<td>2P</td>
<td>p 3D</td>
<td></td>
<td>mɔpɨw</td>
<td>mɨw</td>
</tr>
<tr>
<td></td>
<td>3P</td>
<td></td>
<td>~ iw</td>
<td></td>
</tr>
<tr>
<td>3P</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Taos Tiwa proclitic forms we saw earlier in the transitive-dative paradigm, but with some new usages. We find no distinction between singular and dual number in the A argument, the forms resolving in favor of the dual form (by the presence of the dual-
inverse increment -pe(n)=. Plural of the A argument is distinguished by use of the non-dual inverse increment -pi=. The third person dual and plural are never distinguished for the D argument. Indeed, comparing with the earlier tables, third person singular is not distinguished from dual or plural when the A argument is non-singular. First and third person A argument forms are identical while second person begins with the usual bilabial. Although the conflated usages are new, these forms are still ultimately derived from transitive forms with the O argument number indexed by the final consonant, as already discussed.

In Southern Tiwa we find a lot of variability in forms. Second and third person are sometimes conflated (the vowel-initial forms) and second and first person are sometimes conflated (the /m/-initial forms). The third person dual and plural D arguments are sometimes distinct and sometimes merged, although variation suggests full merger for some speakers. We find the reduplicated forms with the third person dual D argument except when the A argument is second or third person plural. Even though some of these forms are unique to the transitive-dative paradigm, they undoubtedly derive from transitive forms ultimately, as was discussed for Southern Tiwa earlier.

17.3 Summary of the Transitive-Dative X>X>3 Paradigm

In summary of the transitive-dative, we can probably reconstruct the Proto-Kiowa-Tanoan forms for most of them as identical with the transitive, as shown in Table 17-10.
Table 17-10: Schematic Reconstruction, Transitive-Dative $X^>X^>3$ Paradigm

<table>
<thead>
<tr>
<th>A ↓ / D →</th>
<th>3S</th>
<th>3D</th>
<th>3I</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>*TY</td>
<td>*TY-d</td>
<td>*TV</td>
</tr>
<tr>
<td>2S</td>
<td>*Y</td>
<td>*Y-d</td>
<td>*V</td>
</tr>
<tr>
<td>3S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1D</td>
<td>*(Q)V</td>
<td>*Y-d / *Y-pV</td>
<td>*Y-pV</td>
</tr>
<tr>
<td>2D</td>
<td>*bV</td>
<td>*bV-d / *bV-pV</td>
<td>*bV-pV</td>
</tr>
<tr>
<td>3D</td>
<td>*V</td>
<td>*V-d / *V-pV</td>
<td>*V-pV</td>
</tr>
<tr>
<td>1P</td>
<td>*(Q)V</td>
<td>*V-d / *V-pV</td>
<td>*V-pV</td>
</tr>
<tr>
<td>2P</td>
<td>*bV</td>
<td>*bV-d / *bV-pV</td>
<td>*bV-pV</td>
</tr>
<tr>
<td>3P</td>
<td>*V</td>
<td>*V-d / *V-pV</td>
<td>*V-pV</td>
</tr>
</tbody>
</table>

There is a lot of uncertainty in this, however. It is perhaps only those forms that index a singular A argument and a third person singular D argument that can be reconstructed with any confidence. It may be that a full transitive-dative paradigm simply never existed and that at the Proto-Kiowa-Tanoan stage there was already variation between use of the transitive and use of the intransitive-dative to express trivalent situations.
18 SAP Pronominals: Historical Reorganization

The final set of pronominal proclitics to address are those transitive and transitive-dative forms that index a speech-act participant (SAP) as a non-A argument, i.e. as an O argument in the transitive or as a D argument in the transitive-dative. These are the forms that are most relevant to the discussion in chapter 0 in dealing with voice and valence. While there are not many new proclitic forms to encounter in these set, we do find innovation and interesting developments within them.

18.1 Transitive X>SAP Proclitics

Table 18-1 lays out those pronominals that index a first or second person as an O argument in a transitive configuration.

<table>
<thead>
<tr>
<th>A &gt; O</th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S&gt;2S</td>
<td>ɛm</td>
<td>wí</td>
<td>wí</td>
<td>ɔ ~ ɔ</td>
<td>q</td>
<td>i</td>
<td>q ~ a</td>
</tr>
<tr>
<td>1NS&gt;2S</td>
<td>ɡɔ</td>
<td>wí</td>
<td>wí</td>
<td>ɔ ~ ɔ</td>
<td>q</td>
<td>i</td>
<td>q ~ a</td>
</tr>
<tr>
<td>1&gt;2D</td>
<td>ɔ̨́</td>
<td>wó</td>
<td>wí ~ wobén</td>
<td>mɔpɛn</td>
<td>ɔn̩</td>
<td>mɛn</td>
<td>mɛ-l</td>
</tr>
<tr>
<td>1&gt;2P</td>
<td>ɔ̨́</td>
<td>wóv</td>
<td>wí ~ wobé</td>
<td>mɔpî</td>
<td>ɔn̩</td>
<td>mɛ</td>
<td>bɑ</td>
</tr>
<tr>
<td>2S&gt;1S</td>
<td>ɛ</td>
<td>dí</td>
<td>dí</td>
<td>mɔy</td>
<td>may</td>
<td>bey</td>
<td>bæ</td>
</tr>
<tr>
<td>2D&gt;1S</td>
<td>ɔ̨́</td>
<td>wó</td>
<td>wí ~ wobén</td>
<td>mɔpî</td>
<td>ɔn̩</td>
<td>mɛ</td>
<td>bɑ</td>
</tr>
<tr>
<td>2P&gt;1S</td>
<td>ɔ̨́</td>
<td>wóv</td>
<td>wí ~ wobé</td>
<td>mɔpî</td>
<td>ɔn̩</td>
<td>mɛ</td>
<td>bɑ</td>
</tr>
<tr>
<td>2&gt;1NS</td>
<td>ɔ̨́</td>
<td>wóv</td>
<td>wí ~ wobé</td>
<td>mɔpî</td>
<td>ɔn̩</td>
<td>mɛ</td>
<td>bɑ</td>
</tr>
<tr>
<td>3S&gt;1S</td>
<td>ɛ</td>
<td>dí</td>
<td>dí</td>
<td>mɔy</td>
<td>may</td>
<td>bey</td>
<td>bæ</td>
</tr>
<tr>
<td>3D&gt;1S</td>
<td>ɛ</td>
<td>dí</td>
<td>dí</td>
<td>mɔy</td>
<td>may</td>
<td>bey</td>
<td>bæ</td>
</tr>
<tr>
<td>3P&gt;1S</td>
<td>ɔ̨́</td>
<td>wóv</td>
<td>wí ~ wobé</td>
<td>mɔpî</td>
<td>ɔn̩</td>
<td>mɛ</td>
<td>bɑ</td>
</tr>
<tr>
<td>3&gt;1NS</td>
<td>ɔ̨́</td>
<td>wóv</td>
<td>wí ~ wobé</td>
<td>mɔpî</td>
<td>ɔn̩</td>
<td>mɛ</td>
<td>bɑ</td>
</tr>
<tr>
<td>3&gt;2S</td>
<td>ɡɔ</td>
<td>wó</td>
<td>wó</td>
<td>mɔpî</td>
<td>ɔn̩</td>
<td>mɛ</td>
<td>bɑ</td>
</tr>
<tr>
<td>3&gt;2D</td>
<td>ɔ̨́</td>
<td>wóv</td>
<td>wí ~ wobén</td>
<td>mɔpî</td>
<td>ɔn̩</td>
<td>mɛ</td>
<td>bɑ</td>
</tr>
<tr>
<td>3&gt;2P</td>
<td>ɔ̨́</td>
<td>wóv</td>
<td>wí ~ wobé</td>
<td>mɔpî</td>
<td>ɔn̩</td>
<td>mɛ</td>
<td>bɑ</td>
</tr>
</tbody>
</table>

As was mentioned in chapter 0, in any instance where you have a third person A argument acting on a first or second person O argument in Tiwa or Towa, a passive
construction must be used. Intransitive proclitics are used to index the SAP O argument
There are no transitive pronominals that encode 3>1 or 3>2 in these languages. We do
find such forms in Kiowa and Tewa, however, which do not make use of an obligatory
passive. We can note some other patterns as well. In all of the languages, in any 1>2
transitive configuration, number is distinguished for the second person O argument but
not for the first person A argument. Only Kiowa makes a singular / non-singular
distinction for a first person A when combined with a second person singular O. The
same is true in 3>2 configurations in Kiowa and Tewa: only the number of the second
person O argument is contrastive. Similarly when the configuration is 2>1, only Kiowa
shows any number distinction in the second person A argument, at least when the first
person O argument is singular. Tewa, Towa, and Picuris Tiwa also show no number
distinction in the first person O argument. Tewa also has no number distinction for either
argument in 3>1 configurations while Kiowa again only has contrasts in number in the A
argument when the O argument is singular.

Among these pronominal forms, we have encountered all of the Kiowa proclitics,
except the 1NS>2S and homophonous 3>2S ɔ3=, and many of the 1>2 proclitics of Tiwa
and Towa. However, all of the Tewa pronominals, the 2>1 of Tiwa and Towa, the 1>2S
of Picuris and Southern Tiwa, and the 1>2D of Picuris Tiwa are all novel to this
paradigm. In reconstruction not all of these unique forms seem to be native to this part of
the paradigm while some of the non-unique forms just might be.

The table above shows Kiowa to make the most elaborate of contrasts, but the
reader may already recognize the source of many of these proclitics. Almost all of these
originate as dative proclitics: either as intransitive-dative S>>X (most of those with short
vowels) or as transitive-dative $XNS>S>3S$ forms (those with long vowels). Note in the latter cases that third person singular dative proclitics are being used to express first person singular O arguments, which is not otherwise a common development within the family. Such forms are only used when the A argument is second or third person non-singular. In both the imports from the intransitive-dative and from the transitive-dative, it is the singular S/O argument form that is used, probably because singular is unmarked in these series. The one non-dative proclitic that appears to be directly identical to a form from another paradigm is the $I>S>2S$ proclitic $\epsilon m=$, which is shared with the intransitive second person singular form. The source of the /m/ in this proclitic is uncertain, as noted in chapter 0, but the vowel correspondence may indicate an origin within this transitive series (see chapter 19.1.2).

The one novel Kiowa proclitic is the form $g\omega=$, which indexes a second person singular O argument combined with any A argument except first person singular. However, note that it differs only in tone from the intransitive-dative $s>>2S$ proclitic $g\delta=$ and undoubtedly derives from it in some way. No other Kiowa-Tanoan language distinguishes number in the A argument with a second person singular O argument, so this Kiowa proclitic finds no cognates within this paradigm.

In all of the Tanoan languages we see forms related to proclitics in other paradigms whenever a second person O argument is involved. In Towa the $I>2$ proclitics are all exactly identical to their intransitive forms indexing $2s$, $2D$, and $2P$. The same appears to be true of Southern Tiwa second person dual $m\epsilon n=$ and plural $m\alpha=$, both identical to intransitive proclitics. In Taos Tiwa the second person singular $\varphi=$ appears to

\[\text{1 The details of tonal derivations in Kiowa are not entirely clear at present.}\]
be shared with the intransitive (although the variation in nasality also suggests a relationship with transitive $2S>3s$). In both Taos and Picuris Tiwa, the $I>2D$ and $I>2P$ proclitics (Ta mɔ̨pень, Pt pən= and Ta mɔ̨pię, Pt pi=) are identical to the transitive $2D>3I$ and $2P>3I$ forms respectively, except for the final /n/ in the Picuris dual form.

Finally in Tewa we see that all proclitics indexing a second person O argument have an initial /w/. In the $3>2$ pronominals in both Tewa languages, this second person w- is evidently attached to the transitive $3>3s$, $3>3D$, and $3>3P$ proclitics: w-ô·=, w-ovêŋ=, w-ovê=, The dual and plural of these has been extended to $I>2D$ and $I>2P$ usage as well in Arizona Tewa, at least in Yegerlehner’s elicitation of the 1950's. In Kroskrity’s data there is a single invariant $I>2$ form, wi=, while in Rio Grande Tewa there are three unique $I>2$ proclitics that encode the number of the second person O argument: wí= $I>2S$, wêŋ= $I>2D$, wê= $I>2P$.

Looking across the languages it appears that we can reconstruct four or five different pronominal forms: $I>2S$, $I>2D$, $I>2P$, $2>1S$, and maybe $2>1NS$. The least certain in form are probably the $I>2D$ and $I>2P$ proclitics. On the basis of Towa and Southern Tiwa, I would reconstruct the proclitics as identical with the $2D$ and $2P$ intransitive forms, i.e. as *bY= and *bV= respectively. Given that the transitive-derived proclitics in Northern Tiwa index the second person as A argument, it is probably a good bet that Taos and Picuris have innovative forms in these slots. The Rio Grande Tewa $I>2D$ and $I>2P$ are also difficult to interpret in comparative perspective. The syllable nuclei -êŋ- and -ê- may just be derived from prevailing patterns within the transitive paradigm, where dual proclitics show /êŋ/ and plural show /ê/. Or, these may be a contraction of Proto-Tewa **wobêŋ= or **wibêŋ= and **wobê= or **wibê=.
respectively. Or, they may indeed represent some kind of conservative form. For the present work, I will suggest that \( I > 2D \) and \( I > 2P \) simply made use of the intransitive paradigm and the different languages then innovated on the basis of functional pressures to differentiate the transitive forms.

The \( I > 2S \) proclitic was probably unique in the reconstructed paradigm. While the Towa proclitic suggests identity with the intransitive \( 2S \) form, the Tiwa vowel correspondences and, if they are at all cognate, the Kiowa and Tewa forms, suggest that the proclitic was indeed different than the intransitive. I will suggest on the basis of the Tiwa and Kiowa vowel correspondences that the reconstructed proclitic was schematically \(*Y=\), but distinct from the intransitive \( 2S \). The /í/ of the Tewa proclitic may be cognate, but underwent denasalization at an early stage. See chapter 19.1.2 for more discussion.

Having reconstructed all of the \( I > 2 \) transitive forms, we do need to wonder about that Tewa second person \( w- \) increment. There is the temptation to derive it from the second person bilabial \(*b-\), even though this only sporadically occurs with second person singular. There could also be the temptation to derive it from second person \(*Q-\), seen in the intransitive-dative and the transitive \( 2S > 3P \) paradigms. However, while /g/ > [w] is an attested change in some modern Tewa dialects (when /g/ is in the context of a rounded vowel), I have not found much evidence for it diachronically between Proto-Kiowa-Tanoan and Tewa (although */gʷ/ > /w/ is attested in chapter 0). I therefore wonder if it might not derive from \( ò=\), the historical second person singular intransitive proclitic (preserved in the monovalent imperative), which has spread to other paradigms, retained
in such forms as reflexive $2P \, \text{óbí}= (\text{AT}) / \, \text{úví}= (\text{RGT})$\(^2\) and the Arizona Tewa (and archaic Rio Grande Tewa) transitive $2P>3 \, \text{óbíŋ}= (\text{AT}) / \, \text{ovíŋ}= (\text{RGT})$. The $I>2$ proclitics may thus have originated as either, e.g. $**\text{óí}= > \, \text{wi}= \text{or maybe} \, **\text{ówí}= > \, \text{wi}=, \text{with the vowel giving way to the glide early in Proto-Tewa. It had probably already been reanalyzed as just } \text{w- when the } 3>2 \text{ forms were innovated on the basis of the } 3>3 \text{ forms (themselves perhaps deriving from second person forms). Unfortunately I have yet to reach a resolution of this } \text{w- increment in comparative-historical perspective.}$

Of the $2>I$ proclitics, I think we can be a little more secure in our reconstruction. On the basis of Tiwa and Towa, we can readily reconstruction $2>I_S$ as $*\text{bVg}^j=\text{.}$ We have already seen the $*/\text{Vg}^j/> \, \text{Towa /æ/ change among lexical roots in chapter 10 and the initial bilabial is apparent. Only if Tiwa and Towa form a subgroup within the family could we hesitate about reconstructing such a form to Proto-Kiowa-Tanoan. On the other hand, it is not as certain whether we can reconstruct a form indexing $2>I_{NS}$. Only two of the Tiwa languages show such a form, $\text{ku=}\text{.}$ The two languages are Taos Tiwa and Southern Tiwa, so we can at least reconstruct $*\text{ku=} \text{to Proto-Tiwa. Lacking evidence from the other branches, we can only questionably reconstruct } *\text{qV=} \text{to Proto-Kiowa-Tanoan.}$

The last form to investigate in this paradigm is the Tewa $X>I$ proclitic $\text{dí=}\text{, which indexes a second or third person A argument of any number and a first person O argument of any number. There is no clear cognate in any of the other languages. One could posit a relationship with the Tiwa $\text{ku=} \text{just mentioned, suggesting a fronting of the}$

\[^{2}\text{The vowel has raised in this form. Such vowel raising is found elsewhere as well, cf. the variation in the Rio Grande Tewa intransitive-dative } x>>3S \, \text{óŋ} \sim \text{úŋ}=\text{.}\]
stop\(^3\), but there is no evidence for this. Alternatively the Tewa proclitic may originate by analogy with the transitive 1\(S\rangle3\) proclitics producing the /d/ and the transitive 1\(\rangle2\)\(S\) proclitic lending the /ï/. Or, the source could ultimately be the intransitive-dative 3\(\rangle\rangle1\)\(S\) proclitic *\(Y\) with denasalization of the vowel and the initial /d/ being introduced by analogy with the transitive 1\(S\rangle3\) forms or by phonological epenthesis (as was suggested in chapter 0 as one possible origin of third person plural /d/). At present, however, this Tewa proclitic remains a mystery.

18.1.1 Summary of the Transitive X\(\rangle\)SAP Paradigm

Table 18-2 summarizes the reconstruction of the Proto-Kiowa-Tanoan transitive proclitics that index a first or second person O argument.

Table 18-2: Schematic Reconstruction, Transitive X\(\rangle\)SAP Paradigm

<table>
<thead>
<tr>
<th>A (\downarrow) O (\rightarrow)</th>
<th>1(S)</th>
<th>1(NS)</th>
<th>2(S)</th>
<th>2(D)</th>
<th>2(P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>*b(Vg)</td>
<td>*(bV)</td>
<td>*(bV)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No forms indexing a third person A argument could be reconstructed. No number contrasts are made in the first or second person A arguments, while a three-way distinction was made for a second person O argument. It is not clear whether there was any distinction in the number of the first person O argument.

18.2 Transitive-Dative X\(\rangle\)X\(\rangle\)SAP Proclitics

The transitive-dative equivalent to the previous paradigm, which indexes a first or second person D argument, consists of a larger set of pronominals. However, this

\(^3\) The voicing difference is regular in Tewa-Tiwa correspondences. By regular sound correspondences, we would expect Tewa **\(g\)(\(V\))= (assuming the vowel correspondences found in lexical stems) or perhaps **\(g\)(\(V\)) (see chapter 0). It is not impossible that a change in place of articulation may have occurred, of which we saw plenty in chapter 0.
expansion is primarily derived by the number distinctions made in the O argument, which
is historically indexed in the family by separable number-marking morphemes. Still, to
present the modern forms, it is necessary to break the proclitics up in order to present
them all neatly.

18.2.1 Transitive-Dative X>X>1 Proclitics

Table 18-3 shows those forms that index a first person D argument in Tewa,
Tiwa, and Towa.

Table 18-3: Transitive-Dative $X>X>1$ Proclitics: Tewa, Tiwa, and Towa

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>D</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>2S</td>
<td>s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bæ</td>
</tr>
<tr>
<td>2D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bæ-l</td>
</tr>
<tr>
<td>2P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bæ</td>
</tr>
<tr>
<td>2S</td>
<td>I</td>
<td>dî</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bæ</td>
</tr>
<tr>
<td>2D</td>
<td></td>
<td>dî</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bæ-l</td>
</tr>
<tr>
<td>2P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bæ</td>
</tr>
<tr>
<td>2S</td>
<td>D</td>
<td>bæ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bæ-l</td>
</tr>
<tr>
<td>2D</td>
<td></td>
<td>bæ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bæ-l</td>
</tr>
<tr>
<td>2P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bæ</td>
</tr>
<tr>
<td>2S</td>
<td>P</td>
<td>mɔ̂w</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bæ</td>
</tr>
<tr>
<td>2D</td>
<td></td>
<td>mɔ̂w</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bæ-l</td>
</tr>
<tr>
<td>2P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bæ</td>
</tr>
<tr>
<td>3</td>
<td>X</td>
<td></td>
<td>PASSIVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note that no number distinction is made in the first person D argument. Taos Tiwa and
Towa also show no contrast in the number of a second person A argument (and Taos does
not differentiate singular and inverse of the O argument). Southern Tiwa makes a full
three-way contrast in number for the second person A argument and for the O argument$^4$,
but not for the first person D argument. The Tewa clitics do not distinguish the number of
any argument, but the A may also be ambiguously second or third person. There are no

$^4$ Except only a contrast between singular/inverse and plural when the A argument is second person plural.
forms in Tiwa or Towa to index a third person A argument and a first or second person D argument.

Table 18-4 presents the Kiowa proclitics that index a first person D argument.

Table 18-4: Transitive-Dative $X>X>1$ Proclitics: Kiowa

<table>
<thead>
<tr>
<th>A ↓ D →</th>
<th>1S</th>
<th></th>
<th></th>
<th>1NS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S</td>
<td>D</td>
<td>P</td>
<td>I</td>
<td>S</td>
<td>D</td>
</tr>
<tr>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2S</td>
<td>ŗ</td>
<td>Ň</td>
<td>ų</td>
<td>Ň</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>mâ’</td>
<td>mën’</td>
<td>män’</td>
<td>män’</td>
<td>dô’</td>
<td>dêt’</td>
</tr>
<tr>
<td>3D</td>
<td>ê’</td>
<td>ên’</td>
<td>ên’</td>
<td>ên’</td>
<td>dô’</td>
<td>dêt’</td>
</tr>
<tr>
<td>2P</td>
<td>bâ’</td>
<td>bëdë’</td>
<td>bâgë’</td>
<td>bôdô’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3I</td>
<td>ê’</td>
<td>êdë’</td>
<td>êgî’</td>
<td>êdô’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3H</td>
<td>â’</td>
<td>dë’</td>
<td>gyå’</td>
<td>dô’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Kiowa does make a number distinction for the first person D argument, unlike the other languages. It also consistently makes a four-way number contrast for the O argument.

The same proclitics are used with a first person singular D argument when the A argument is second or third person singular. Otherwise with a 1S D argument, full distinctions are made in person and number of the A argument. With a first person non-singular D argument, on the other hand, no person or number distinctions are made at all for the A argument.

Once again in the above, we see many familiar proclitic forms as well as a few new ones. All of the Kiowa proclitics are once again dative proclitics seen either in the intransitive-dative, the $X_5>X>1S$ and the $X_5>X>1NS$ forms, or transitive-dative proclitics also seen with a third person singular D argument (whenever the A argument is non-singular). The Tewa $X>X>I$ pronominals are the same as the intransitive-dative $X>>1S$ and the Towa $2>X>I$ is the same as the transitive $X>I$. It is only in the Tiwa languages that we find entirely new forms.
Southern Tiwa appears to be the more conservative of the Tiwa languages, with three numbers distinguished for the second person A argument. Sound correspondences suggest that the Taos proclitics could be cognate with all of the Southern Tiwa forms, but the nasalization of all voiced bilabial stops to /m/ and lowering of nasal vowels to /ɔ̨/ in the proclitics seems to have neutralized all of the distinctions. Considering the form of the Southern Tiwa proclitics and the general patterns we have seen so far, I am not convinced that such elaboration in the A argument was actually made. I would suggest only reconstructing a single $2\text{>X}\text{>I}$ proclitic with no number distinctions made in the A or D arguments (and number marked for the O argument by the coda number increments). The reconstructed form I posit as $^*bV\hat{g}=$, derived from the transitive $2\text{>I}s$ proclitic by dative nasalization. The presence of the coda is uncertain, although it may have been lost in accommodation of the coda number markers.

The Tiwa languages may have developed elaboration from this originally simple form by analogy with other transitive and transitive-dative forms. The $2D\text{>X}\text{>I}$ forms may have derived simply by nasalization normally associated with the dual. The $2P\text{>X}\text{>I}$ proclitics are the same as have become widespread in the Southern Tiwa transitive-dative and may derive from $2\text{>X}\text{>3}$ proclitics ultimately. The Tewa languages appear to have derived their transitive-dative form $d\text{ji}n=$ by adding the nasal marker $\text{–}n=$ to the transitive $X\text{>I}$ proclitic. This may have then spread to the intransitive-dative $X\text{>>I}s$ function. Or, the intransitive-dative may have been the source form for both the transitive-dative and the transitive$^5$.

$^5$ Such a scenario would seem to require various steps of denasalization and reanalysis. See chapter 19.1.
18.2.2 Transitive-Dative X>X>2 Proclitics

Table 18-5 presents all of the pronominal proclitics that index a second person D argument.

Table 18-5: Transitive-Dative X>X>2 Proclitics

<table>
<thead>
<tr>
<th>A</th>
<th>O</th>
<th>D</th>
<th>Kí</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS</td>
<td>S</td>
<td></td>
<td>gyá</td>
<td></td>
<td>wíŋ</td>
<td></td>
<td>kō</td>
<td></td>
</tr>
<tr>
<td>INS</td>
<td>I</td>
<td></td>
<td>gó</td>
<td></td>
<td></td>
<td>kms</td>
<td>kām</td>
<td>kō-l</td>
</tr>
<tr>
<td>IS</td>
<td>2S</td>
<td></td>
<td>gót</td>
<td>wíŋ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INS</td>
<td>D</td>
<td></td>
<td>nën</td>
<td>wíŋ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IS</td>
<td>P</td>
<td></td>
<td>yän</td>
<td>wíŋ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INS</td>
<td></td>
<td></td>
<td>gyát</td>
<td>wíŋ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Once again Kiowa is highly elaborate beyond what we find in the other languages. All of the languages make a three-way number distinction in the second person D argument, but only Kiowa contrasts singular and non-singular first person A arguments. The Tiwa
languages only distinguish singular and inverse number of the O argument when the D argument is singular, otherwise the two numbers are merged. Only Kiowa and Tewa have forms to index a third person A argument combined with a second person D argument. Tiwa and Towa must make use of a passive construction using the intransitive-dative proclitics to express such a configuration (cf. chapter 0). Both Kiowa and the Tewa languages have some unique proclitic forms in this set, although their derivation from other proclitics is clear.

The proclitics of Kiowa are almost all to be found in the intransitive-dative paradigm where they index $X>>2$. The same forms are found here indexing $I>X>2NS$ and $3>X>2NS$. When the second person D argument is singular, however, it is the forms indexing $I_S>X>2S$ that are identical to the intransitive-dative $X>>2S$. The same proclitics are used for $3>x>2S$ as are used for $I_NS>X>2S$. Even though these have the same formal features as intransitive-dative proclitics, they seem not to be used to express second person singular datives in intransitive-dative constructions. Thus, the most basic forms used to express a second person singular D argument—those used in the intransitive-dative—are the ones used to express combination with a first person singular A argument. In any other combination of person and number there is rampant merger.

The Towa proclitics, the Taos Tiwa forms indexing a second person singular D argument, and the Southern Tiwa proclitics indexing second person singular and second person plural are all shared with the intransitive-dative paradigm. Meanwhile the Taos forms indexing $2D$ and $2P$ D arguments are the same as the transitive-dative proclitics that index a $2D$ or $2P$ A argument respectively when combined with a third person D argument. These seem to derive from the transitive proclitics that index a second person
A argument and a third person inverse O argument. The Southern Tiwa $I>X>2D$
proclitics are the same as the transitive-dative $I>X>3D$ forms, although formally they
look more like second person non-singular proclitics than third person.

The Tewa pronominals indexing a non-singular second person D argument are all
identical to the transitive $I>2NS$ and $3>2NS$ proclitics\(^6\). Only the $I>X>2s$ $wîŋ=\$ and the
$3>X>2s$ $wôŋ=\$ forms are original to this paradigm. However, both of these proclitics are
clearly derived by adding the dative marker $-ŋ=\$ to the transitive $I>2s$ and $3>2s$ proclitics
respectively. See discussion of these transitive Tewa proclitics above for the development
of these forms.

In terms of reconstruction, we can probably only conclude from the modern
language data that there were three proclitics indexing $I>X>2s$, $I>X>2D$, and $I>X>2P$ in
this part of the paradigm. These proclitics were all identical to the intransitive-dative
$X>\cdot 2$ forms of the appropriate number. Thus we would reconstruct $*qV=\$ for $I>X>2s$,
*$bV=\$ for $I>X>2D$, and $*bV=\$ for $I>X>2P$. Kiowa and Towa seem to fully preserve this
pattern, while the Tiwa languages both preserve it in the $I>X>2s$, but only Southern
Tiwa in the $I>X>2P$. Tewa shows entirely innovative forms. However, a reflex of the
original pattern may be found in the transitive-dative-reflexive where (one variant of) the
second person singular dative reflexive proclitics is $gæŋ=\$, which seems to preserve the
initial $*/q/$ of the second person singular dative argument.

\(^6\) In the Arizona Tewa sources, only Yegerlehner discusses the transitive-dative proclitics. Whereas
Kroskrity reported only a single transitive $I>2$ proclitic $wî=\$, he does not give any information as to
whether modern Arizona Tewa comparably has only a single transitive-dative $I>X>2$ proclitic $wîŋ=\$. 
18.2.3 Summary of the Transitive-Dative X>X>SAP Paradigm

Table 18-6 summarizes the reconstruction of the transitive-dative proclitics indexing a first or second person D argument.

Table 18-6: Schematic Reconstruction, Transitive-Dative X>X>SAP Paradigm

<table>
<thead>
<tr>
<th>A ↓ / D →</th>
<th>1</th>
<th>2S</th>
<th>2D</th>
<th>2P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>*qV</td>
<td>*bV</td>
<td>*bV</td>
</tr>
<tr>
<td>2</td>
<td>*bV(g!)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Being dative clitics, the number-marking coda morphemes would be added to these when a non-singular O argument is being indexed. Like other transitive-dative proclitics, these appear to be little differentiated from proclitics in other paradigms.
19 Pronominal Sound Correspondences and Reconstruction

The previous six chapters laboriously worked through the functional shifts of the pronominals amongst all of the languages in order to determine which forms are, or might be, cognate. While a prognosticative appeal was made to regular sound correspondences where necessary to suss out which of a set of similar forms might actually belong to a given cognate set, I left a detailed discussion of such sound correspondences aside. This section will remedy this critical oversight and present those recurring sound correspondences that we find among the pronominal forms on the basis of the cognate alignments made through the long discussions of chapters 0-0\textsuperscript{1}. From these sound correspondences, I will then propose actual formal reconstructions for the pronominals in place of the schematic forms given in the preceding chapters. Section 19.1 therefore discusses the regular sound correspondences we seem to find and posits reconstructions of individual sounds. Section 19.2 then returns to the pronominal proclitic paradigms to reconstruct the Proto-Kiowa-Tanoan pronominal proclitic forms themselves.

19.1 Pronominal Sound Correspondences

It was already hinted in chapter 5 and in Part II that the pronominal proclitics have some distinctive phonological properties, at least in some of the languages. As bound grammaticalized morphemes, they rarely bear primary lexical stress and indeed

\textsuperscript{1} The primary reason for organizing the reconstruction in this fashion was to attempt to get around a potential circularity. We cannot identify true cognates with certainty without accounting for regular sound correspondences. At the same time, we cannot reliably posit regular sound correspondences without establishing a reasonable set of cognates on the basis of semantics. As tedious as the present organization is, it does permit the reader to walk through the process of identifying potential cognates and their subsequent justification through regular sound correspondences with less risk of being mired in circularity (and will perhaps enable a future researcher to more easily catch me in this work if I have fallen into such a trap).
may even show variation in what it is they are phonologically attached to. In at least Tewa and Towa, for instance, there is evidence that despite being morphologically bound to their right, the pronominal proclitics might be phonologically attached to their left whenever possible. What this means for this section is that we can expect that the pronominal proclitics do not always show the same sound correspondences as we find in the primary syllables of lexical stems. Since lexical stress in Kiowa-Tanoan has a tendency to fall on the first syllable of a lexical stem, we might expect the sound correspondences to be more akin to what we find word-internally and word-finally (i.e. those presented in chapter 10)\(^2\). However, the monosyllabic root form found in Kiowa-Tanoan and the limited suffixal morphology does mean in some instances that we have limited support for the purported correspondences that we do find in the pronominal proclitics.

As large as the sets of pronominals are, they show only a small number of the sounds that occur in any of the languages. No reflexes of the ejective or aspirated stops, affricates, or fricatives are apparent. While the occasional approximant can be found in some of the languages, their historical origin as approximants is questionable. Of the vowels we find no diphthongs or central vowel in the Tiwa languages, almost no long vowels in Towa\(^3\), and limited vowel length in Kiowa. The long vowels in Tewa will be addressed only briefly below in section 19.1.2.7. There are also some interesting patterns of vowel nasalization: no clear reflex of */y/ and about the only phonemic instances of */q/ in Towa occurs in the pronominal proclitics. Such limited occurrence of sounds may also

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\(^2\) It is not yet clear whether the similar sound correspondences in pronominal proclitics and non-initial syllables in lexical stems is more a factor of (lack of) stress or of being internal to a phonological unit (or of both).

\(^3\) The one that does occur, namely e\(^–\) = 1p.\(\text{ITR}\), I find suspect. If true at all, it is probably an innovation.
be linked to a pattern the reader may have noticed in the schematic reconstructions of the preceding chapters: the large and complex paradigms that occur in the modern languages seem to derive from a much simpler system.

### 19.1.1 Consonant Correspondences

We will begin our survey of sound correspondences with the small set of consonants, seen in Table 19-1. A dash "-" on both sides of a sound indicates that the correspondence is found only proclitic-internally. A coda occurrence will be indicated by a pound symbol "#". Otherwise the sound correspondences can be assumed to apply proclitic-initially. Gaps indicate that we lack evidence for a correspondence within a given language.

#### Table 19-1: Proclitic Consonant Correspondences

<table>
<thead>
<tr>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>b</td>
<td>b</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>b</td>
</tr>
<tr>
<td></td>
<td>-v-</td>
<td>-b-</td>
<td>(-)m(-)</td>
<td>(-)m(-)</td>
<td>(-)b(-)</td>
<td></td>
</tr>
<tr>
<td>m</td>
<td>b ~ m</td>
<td>b ~ m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td></td>
<td>?m#</td>
<td>-v-</td>
<td>-b-</td>
<td>-p-</td>
<td>-p-</td>
<td>-b-</td>
</tr>
<tr>
<td>d</td>
<td>d</td>
<td>d</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>g</td>
<td>g</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
</tr>
<tr>
<td>d# (~t ~n ~g)</td>
<td>η#</td>
<td>η#</td>
<td>?w#</td>
<td>?w#</td>
<td>?w#</td>
<td>l#</td>
</tr>
<tr>
<td>?m# / ?d#</td>
<td>η#</td>
<td>η#</td>
<td>?m#</td>
<td>?m#</td>
<td>?m#</td>
<td>l#</td>
</tr>
<tr>
<td>d# (~t ~n)</td>
<td>η#</td>
<td>η#</td>
<td>?n#</td>
<td>?n#</td>
<td>?n#</td>
<td>l#</td>
</tr>
</tbody>
</table>

Correspondence sets that appear to be related or show similar developments are separated out by the bolder lines. These clearly align with place of articulation and we will find there to be a predictable distribution that reduce the number of the actual reconstructed segments.
19.1.1.1 Bilabial Consonants

The following sets of cognate proclitics illustrate the initial bilabial correspondences. In the first set, in Table 19-2, we find voiced oral bilabial stops in all but the Tiwa languages, where we find a nasal stop.

Table 19-2: Bilabial Correspondence #1

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2P.ITU</td>
<td>ba</td>
<td>bí</td>
<td>bí</td>
<td>ṃ</td>
<td>ṃ</td>
<td>ṃ</td>
<td>ba</td>
</tr>
<tr>
<td>2P&gt;3P</td>
<td>bá</td>
<td>bí</td>
<td>bí</td>
<td>ṃ</td>
<td>ṃ</td>
<td>ṃ</td>
<td>ba</td>
</tr>
<tr>
<td>2S&gt;3I</td>
<td>bé</td>
<td>bé</td>
<td>bí</td>
<td>ṃ</td>
<td>ṃ</td>
<td>ṃ</td>
<td>ba</td>
</tr>
<tr>
<td>2P&gt;3S</td>
<td>bá</td>
<td>(bí)</td>
<td>ṃ</td>
<td>ṃ</td>
<td>ṃ</td>
<td>ba</td>
<td></td>
</tr>
<tr>
<td>1&gt;2P,</td>
<td>bú</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ba</td>
</tr>
</tbody>
</table>

This correspondence set is recognizable from the lexical correspondences of chapter 9.2.

Before a nasal vowel, Proto-Kiowa-Tanoan */b/ is nasalized to /m/ in the Tanoan languages and before an oral vowel, */b/ is unchanged, as is the case seen in this set. In the Northern Tiwa languages all voiced stops have merged with nasal stops in most contexts, which is found here. Southern Tiwa keeps at least some of its voiced oral stops, but here we see that the consonants have nasalized. In some of the above cases, the proclitic has a nasal coda, which undoubtedly led to anticipatory nasal assimilation. The

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4 Pronominal forms in parentheses indicate proclitics that are questionably cognate. For most of these, we can be fairly confident that they are at least partially cognate or indirectly cognate.

5 Arizona Tewa shows a difference in this correspondence set as compared to the lexical correspondence sets. Voiced stops have nasalized to /m/ in all lexical reflexes of Proto-Kiowa-Tanoan */b/. In grammatical morphemes, however, we find the oral stop preserved as such.
rest of the cases may be derived by analogy with the nasalized majority. Non-nasalized Southern Tiwa voiced stops can be seen in the forms in Table 19-3.

Table 19-3: Bilabial Correspondence #2

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>Tₐ</th>
<th>P₁</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>-v-</td>
<td>-b-</td>
<td>m</td>
<td>m</td>
<td>b</td>
<td>b</td>
</tr>
<tr>
<td>2P&gt;3I</td>
<td>bét / bé</td>
<td>m̃-p̃i</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>bet</td>
<td>bi-bi</td>
<td>(2P&gt;S&gt;3I, 2P&gt;S&gt;3D)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RFL</td>
<td>-ṽ-</td>
<td>-b̃-</td>
<td>m̃</td>
<td>m̃</td>
<td>be</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2P.RFL</td>
<td>m̃-m̃</td>
<td>m̃-m̃</td>
<td>be-be</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2&gt;1S</td>
<td>máy</td>
<td>may</td>
<td>bey</td>
<td>bæ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2&gt;S&gt;1</td>
<td>m̃̃m̃</td>
<td></td>
<td>bẽn, baw</td>
<td></td>
<td>2&gt;P&gt;1</td>
<td>bæ</td>
<td></td>
</tr>
</tbody>
</table>

For some reason the voiced stop of Southern Tiwa has been preserved in these forms. It may be a combination of the specific vowel quality found in the morpheme (e.g. be=, where there is not a regularly occurring nasal correlate to /e/), the support of a second morpheme that begins with a voiced oral stop (bi-bi= and be-be=), or frequency effects.

Note also in this table that we can probably include the intervocalic instances of voiced bilabial stops, as in the reflexive. Rio Grande Tewa shows the spirantization of the voiced stop intervocically as is currently productive in the language, but otherwise all languages where such an intervocalic instance occurs leave the bilabial stop unchanged compared to initial position. It is reasonable to reconstruct the bilabial stop in both of the above tables as Proto-Kiowa-Tanoan */b/, its reflex when it occurs before oral vowels.

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6 The majority of labial-initial proclitics in Southern Tiwa do have a nasal coda, usually due to the inverse increment -m/= and its extended uses.
Table 19-4 gives those forms that show the other cognates with corresponding initial voiced bilabial stops.

Table 19-4: Bilabial Correspondence #3

<table>
<thead>
<tr>
<th></th>
<th>Kî</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>m</td>
<td>b ~ m</td>
<td>b ~ m</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td>2D. ITR</td>
<td>mą</td>
<td>bů 2D. IMP</td>
<td>bů 2D. IMP</td>
<td>mąn</td>
<td>mąn</td>
<td>mąn</td>
<td>mą-l</td>
</tr>
<tr>
<td>S&gt;&gt;2D</td>
<td>(mą / ? mę 2D. IMP</td>
<td>mąn</td>
<td>mąn</td>
<td>bım (~ mım)</td>
<td>mą</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D&gt;3S</td>
<td>mą́</td>
<td>mą́</td>
<td>mą́</td>
<td>mą́</td>
<td>mą́</td>
<td>mą́</td>
<td>mą́</td>
</tr>
<tr>
<td>2D&gt;3P</td>
<td>mą́́</td>
<td>mą́</td>
<td>mą́</td>
<td>mą́</td>
<td>mą́</td>
<td>mą́</td>
<td>mą́</td>
</tr>
<tr>
<td>2D&gt;3I, 2D&gt;3D</td>
<td>męń́ / mę́ 2D&gt;3H</td>
<td>mq-bé· 2S&gt;3I / mq-bęڭ 2S&gt;3D</td>
<td>mą-pí</td>
<td>mımjm (~ bibım)</td>
<td>mq-pa (&amp; 2D&gt;S&gt;3D, 2D&gt;S&gt;3I)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D=S&gt;3S</td>
<td>mą́</td>
<td>mą́-pę́m</td>
<td>mım</td>
<td>mą́</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1&gt;2D, 1&gt;S&gt;2D</td>
<td>mą́</td>
<td>mą́</td>
<td>mą́</td>
<td>mą́</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here we see all languages showing nasal stops except for some idiosyncrasies in Tewa and Southern Tiwa. The idiosyncrasy in Tewa will be addressed in section 19.2 after we have dealt with the vowels in 19.1.2. In Southern Tiwa the variant forms with an initial oral stop are odd, but may show some analogical effects: bibım is probably based on the 2P>3I form bibi= which we saw above, while bım (P>>2D biw=, with an oral vowel) seems to be generally anomalous⁷.

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⁷ It looks like a plural form rather than a dual form in both its initial consonant and vowel. Some reanalysis may have transpired in the Southern Tiwa proclitics: there does seem to be a tendency to merge dual with plural.
Considering the forms with voiced oral stops—particularly the Tewa proclitics—it is probably safe to categorize these cognate sets with those in the lexical correspondence series of chapter 9.2.2 which showed nasalization of */b/* before a nasal vowel. Unlike in the lexical correspondence sets, however, this nasalization is found in Kiowa as well as in the other three branches. The vowel correspondences will suggest, however, that all of the above illustrate the stop before a nasal vowel, so we can say */b/* became /m/ before a nasal vowel (/_V̨_/) in all languages and remained /b/ before an oral vowel (/_V_/), except in Tiwa where most voiced bilabial stops nasalized in all contexts.

As we already noted at various points, the nasalization of */b/* before a nasal vowel may have already started happening within Proto-Kiowa-Tanoan. That is, there may have been variable pronunciation of this segment as */b ~ m/* before a nasal vowel within the proto-language considering the development in all branches of the family.

Before moving on to consonants at other places of articulation, we can also consider the other set of bilabials that occur intervocalically, shown in Table 19-5.

Table 19-5: Bilabial Correspondence #4

<table>
<thead>
<tr>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PL</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>m</td>
<td>?-m#</td>
<td>-v-</td>
<td>-b-</td>
<td>-p-</td>
<td>-p-</td>
<td>-b- ~ -m-</td>
</tr>
<tr>
<td>I.O</td>
<td>?-m#</td>
<td>cf. ěm</td>
<td>-vê·</td>
<td>-bê·</td>
<td>-pí / pi</td>
<td>(-)pi</td>
</tr>
<tr>
<td>3S&gt;3H / ěm</td>
<td>3A.O</td>
<td>3A.O</td>
<td>1S&gt;3I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3P&gt;3H</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-I.O</td>
<td>-vêŋ</td>
<td>-bêŋ</td>
<td>-pên</td>
<td>pą</td>
<td>-mįm</td>
<td>-pá</td>
</tr>
<tr>
<td>3D.O</td>
<td>3D.O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We saw in chapter 0 that there is probably only a single morpheme involved here, and the dual-inverse O marker undoubtedly derives from the inverse O marker by dual nasalization. The sound correspondence finds a voiceless bilabial stop in Northern Tiwa
and in Towa and a voiced bilabial stop in Tewa and Southern Tiwa (nasalized to /m/ in the latter when in a nasal context). The mysterious /m/ found in a couple of Kiowa proclitics may be cognate, but this is highly uncertain.

Considering that the above morpheme only presents the bilabial sound in question intervocalically in Towa and Tewa and intervocalically more often than not in Taos Tiwa and Southern Tiwa\(^8\), we can probably reconstruct this sound as */p/*. A sound change of */p/ to /b/ intervocalically in Tewa and Southern Tiwa is typologically more likely than a change of */b/ to /p/ in the non-coda positions in which this sound occurs. Such intervocalic voicing was already seen in chapter 10 for Tewa, but its occurrence in Southern Tiwa is new here.

**19.1.1.2 Alveolar Consonants**

The last set that we saw among the bilabial consonants provides us with an insight into the developments with the other consonants. Table 19-6 illustrates the one major correspondence we see that involves alveolar stops.

Table 19-6: Alveolar Correspondence #1

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S&gt;3S</td>
<td>d</td>
<td>g</td>
<td>d</td>
<td>d</td>
<td>t</td>
<td>t</td>
<td>t</td>
</tr>
<tr>
<td>1S&gt;3P</td>
<td>gya</td>
<td>dó</td>
<td>dó</td>
<td>(t(_I S.RFL), 1S&gt;S&gt;3S)</td>
<td>ta</td>
<td>(ta 1S&gt;RFL)</td>
<td>ta</td>
</tr>
<tr>
<td>1S&gt;3I</td>
<td>gyat</td>
<td>dé</td>
<td>déh</td>
<td>tI 1S&gt;3S</td>
<td>ta</td>
<td>tI 1S&gt;3S</td>
<td>ti</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>tI 1S&gt;3S</td>
<td></td>
<td>tI 1S&gt;3S</td>
<td>te</td>
</tr>
<tr>
<td>1S&gt;S&gt;3S</td>
<td>(dôŋ)</td>
<td>tô</td>
<td>(ta 1S&gt;RFL)</td>
<td>ta</td>
<td>tô</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

\(^8\) The Picuris pronominal proclitics in which this morpheme occurs (where the /p/ is always word-initial) appear to be innovative.
We find that the Tiwa languages show a voiceless alveolar stop while Kiowa and Tewa have a voiced alveolar stop (alternating with a velar stop in Kiowa by the productive dental-velar switch before a high front vowel in that language). At first blush one might want to reconstruct the alveolar segment as */d/, which then devoiced in word-initial position in Tiwa and Towa. However, we find this same correspondence set in word-internal position (chapter 10), where it appeared to be a case of intervocalic voicing of */t/ becoming /d/ in Tewa and Kiowa. This is where the notion of grammatical word and phonological word comes in. If the pronominal proclitics tend to be phonologically attached to a word on their left, then that would put the proclitic-initial consonant in word-internal position, usually following a voiced sound due to the phonotactic patterns of the languages. While such constructions do need much more investigation, I will make the claim that this is indeed the development and will therefore reconstruct this initial alveolar as */t/.

Table 19-7 shows a single correspondence set which illustrates a development following from the above.

Table 19-7: Alveolar Correspondence #2

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>t</td>
</tr>
<tr>
<td>1S&gt;3D</td>
<td>nêñ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>tji-l (&amp; 1S&gt;S&gt;3D)</td>
</tr>
</tbody>
</table>

Here we have Kiowa /n/ corresponding to Towa /t/. Other developments within the Tewa and Tiwa branches have obfuscated or deleted the most direct cognates to these proclitics. However, given the nasalization on the vowels that we see in both forms (which is...
associated with the dual number meaning), we have a simple case of */t/ voicing to */d/ in Kiowa, which would then have nasalized to */n/ within the nasal context\(^9\).

Finally we have another case of a nasal consonant shown in the correspondence set of Table 19-8. Even though the "spatial" marker of Tiwa and Towa is not a pronominal indexation proclitic in the same semantic sense as the rest of the proclitics—it its exact function needs some further analysis—it should be considered here insofar as it has resulted in the third person singular intransitive indexation proclitic in the Tewa languages.

Table 19-8: Alveolar Correspondence #3

<table>
<thead>
<tr>
<th></th>
<th>Kí</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPACE</strong></td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td>3S. ITR</td>
<td>n̄q</td>
<td>n̄q</td>
<td>n̄q</td>
<td>n̄q</td>
<td>n̄q</td>
<td>n̄̄q</td>
<td></td>
</tr>
</tbody>
</table>

In this correspondence set we see an alveolar nasal stop in all languages except Kiowa, in which I have yet to find a cognate (but see the discussion in 19.2 below). We might therefore expect to reconstruct */n/. However, we already saw in chapter 9.3.2 that reconstructing a morpheme-initial */n/ in Kiowa-Tanoan is problematic and there are very few (grammatical) morphemes that can be reconstructed with this phoneme. Given the grammaticalization of this spatial morpheme, it is not unfeasible that it too could be reconstructed with an initial */n/, but in anticipation of the discussion below, I will opt instead to reconstruct it as */d/, but standing before a nasal vowel. As with the bilabial stop above, it is perfectly possible that there was already variation between */d ~ n/ in the

\(^9\) Other instances of initial */n/ derive by the same nasalization process. However, all of these are derived from a */d/ which is in turn derived from a */g/ before a mid front vowel or are derived from the number increment coda */d=*, which has occurred in onset position only by metathesis. In either case it does not correspond to the appropriate alveolar stops in the other languages to be included in this correspondence set.
proto-language when the stop stood before a nasal vowel. We will see some potential support for this conclusion in section 19.2.

19.1.1.3 Velar Consonants

The last set of onset consonants that we find in the pronominal proclitics are those that are normally realized as velar stops in most of the languages. Table 19-9 presents the simpler of the two correspondence sets.

Table 19-9: Velar Correspondence #1

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>g</td>
<td>g</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
</tr>
<tr>
<td>$s\gg2s$, $i\gg2s$</td>
<td>gyá / (ɡɔ́ $x\gg2s$)</td>
<td>$gɛɲ$ $2s,drfl$</td>
<td>ḳ</td>
<td>ḳ</td>
<td>k</td>
<td>k</td>
<td>k</td>
</tr>
<tr>
<td>$2s\gg3p$</td>
<td>gyá / ɡɔ́ $h\gg3p$</td>
<td>ku</td>
<td>ko</td>
<td>ku</td>
<td>kí-l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$2\gg1ns$</td>
<td>ku</td>
<td>ku</td>
<td>ku</td>
<td>ku</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here we find a velar stop in all languages. As with the alveolar stops, we see a voiced reflex in Kiowa and a voiceless reflex in Towa. By the same reasoning of phonological boundedness as was given above, we can reconstruct the Proto-Kiowa-Tanoan sound as */q/* stating that it became voiced in Kiowa and Tewa due to a tendency to stand in intervocalic (or inter-voiced) position.

A further caveat to the above account may be needed, however. We find another correspondence set that involves velars in all languages except Towa, as seen in Table 19-10.
We find the same pattern of voicing as appeared above, but Towa now has an alveolar fricative /s/ where the other languages have a velar stop\(^\text{10}\). This is a correspondence we already saw in chapter 10 among non-initial consonants. As there we can reconstruct this consonant as */q/* and provide a response to the caveat of these two velar sets. The Proto-Kiowa-Tanoan back velar stop */q/* was fronted and spirantized to /s/ in Towa when preceding a front vowel\(^\text{11}\). It remained a voiceless velar stop /k/ in Towa when it preceded a back vowel. The discord of this scenario compared with the above tables (where we do see /s/ preceding some back vowels in modern Towa) will become apparent in 19.2 when we address the vowels.

\(^{10}\) All of these proclitics involve a first person non-singular argument. Kiowa lacks a reflex because it has fully replaced almost all first person non-singular forms with third person inverse forms (a process that had apparently already begun within Proto-Kiowa-Tanoan). As another note on reflexes, the Towa /s/ in these proclitics—and in some other grammatical morphemes—is often pronounced as [h]. This appears to be an innovation that has gained ground throughout the 20\(^\text{th}\) century. All correspondences suggest that the /s/ pronunciation is the older, however.

\(^{11}\) Perhaps a mid-front vowel specifically, depending on the sequence of vowel changes.
19.1.1.4 Coda Consonants

The last of the consonants to contend with are the coda consonants, which are effectively isomorphic with the number-marking increments discussed in chapter 14.5. As suggested by that discussion, reconstruction of these elements is tricky. Neutralization of codas in the Tewa and Towa branches and reanalysis within all branches makes it difficult to be certain what forms may have been present at the Proto-Kiowa-Tanoan stage. It was already debated in chapter 14.5 whether the Tiwa plural increment -w= is an innovation within that branch or might be the reflex of some proto-segment which may or may not have cognates in the other languages. Its reconstruction is therefore highly tentative. The development of Tiwa -m= is similarly in doubt. The potential cognates in Tewa, Towa, and Kiowa are feasible, based on what we have seen in chapter 10, but again the loss or neutralization of codas towards alveolar articulation (and subsequently to velar in Tewa), leaves any claims suspect for now.

Table 19-11 summarizes the distribution of the potentially cognate inanimate plural number markers in all of the languages.

Table 19-11: Coda Plural Marker Correspondence

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>d# (~t ~n ~g)</td>
<td>η#</td>
<td>η#</td>
<td>?w#</td>
<td>?w#</td>
<td>?w#</td>
<td>l#</td>
<td></td>
</tr>
<tr>
<td>p.S/O</td>
<td>/d/ (~t ~n ~g)</td>
<td>-η= (cf. dative series)</td>
<td>-η= (cf. dative series)</td>
<td>? -w= (cf. XP&gt;3P, dative series, 3P.ITR)</td>
<td>? -w= (Vw &gt; u) (cf. XP&gt;3P, dative series, 3P.ITR)</td>
<td>? -w= (cf. XP&gt;3P, dative series, 3P.ITR)</td>
<td>-l- (cf. 3P.ITR, X&gt;3P)</td>
</tr>
</tbody>
</table>

The cognate status between the Kiowa and Towa alveolar consonants and probably also the Tewa velar nasal /ŋ/ (< Pre-Proto-Tewa /n/) would probably be relatively non-
contentious. We find the final alveolar regularly in both the intransitive inanimate plural and the transitive $X>3P$ paradigm. The developments in Tewa make it difficult to tell if there are any instances of /ŋ/ that develop directly from the inanimate plural usage. Finally, we have the Tiwa -w= increment, which may bear some relationship to the intransitive inanimate plural, is found in the plural A argument persons in the transitive $X>3P$ paradigm, and regularly indexes inanimate plural in the dative proclitics.

Articulatorily the most natural development to relate these forms is to posit Proto-Kiowa-Tanoan */d/ or */l/ which lenited to or remained an approximant in Towa and changed to a nasal stop in Tewa, both of which are natural enough changes in coda position. In Tiwa the evolution might have been for */d/ to lenite to alveolar approximant **/l/ (or we may have started with */l/) which subsequently lenited further to labiovelar glide /w/. Positing an original */w/ which developed into an alveolar in Kiowa, Tewa, and Towa is not outside the realm of possibility (only if those three branches form a subgroup, at least), but is not as immediately motivated on articulatory grounds. It may also be that the plural alveolar of Kiowa, Tewa, and Towa developed out of usage of the dual and/or inverse morpheme below and that the Tiwa labiovelar is unrelated (but see the vowel correspondences below in 19.1.2 concerning the intransitive third person inanimate plural). Because of the present uncertainty involved, I will opt to reconstruct the inanimate plural marker as an abstract segment */D/ for now. This representation suggests an alveolar origin, but admits to the need for further study.

Table 19-12 presents the distribution of the inverse number marking, realized as a bilabial nasal stop in the Tiwa languages, an alveolar segment in Towa and Tewa (again evolved into a velar nasal in the latter), and questionably developed in Kiowa.
The possible phonological developments here are partly attested in the lexicon: Tiwa coda /m/ corresponding to Tewa /ŋ/, although correspondence with Towa coda /l/ is not as certain. This does not entail that the above given forms are actually cognate, but it allows for the possibility. The multiple functions of -l- in Towa raises the question of whether we have neutralization of originally distinct inverse, plural, and dual morphemes or if there was simply coda loss with the reflex of only one of the number increments spreading to fill other functions.

The situation in Kiowa is even less clear. We find a reflex of Kiowa non-singular -d= in inverse number forms, suggesting it may have developed along a similar route as Towa (and Tewa). On the other hand, we do actually find regular instances of Tiwa /m/ corresponding to Kiowa /m/ in the lexicon, suggesting that at least some original bilabials are preserved in Kiowa (despite other developments in codas, cf. chapter 10). In fact we do find a couple of forms indexing human plural that have an otherwise inexplicable coda /m/. It is possible that this is a frozen reflex of an inverse morpheme *-m= while the instances of -d= marking inverse are an extension of the plural and dual forms\(^{12}\). I leave

\(^{12}\) See also the discussion of vowel correspondences in 19.1.2.6 below for more on Kiowa number marking.
this latter point an open question, but feel we can reconstruct a morphemic coda \*-m=\ for Proto-Kiowa-Tanoan with some small confidence.

Finally we do find number marking for dual number as well. This is regularly identical to the plural and inverse marking in Kiowa and Towa, notwithstanding frequent nasalization of the coda consonant in the former. It is also regularly identical to the generic coda /ŋ/ of Tewa where it occurs. In the Tiwa languages, we do not find a dual number marker regularly where we find the other number markers above (namely, to index the number of the S or O argument in dative constructions). However, we do often find a coda consonant in dual forms in Tiwa. Table 19-13 summarizes the situation.

Table 19-13: Coda Dual Marker Correspondence

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>d# (~t ~n ~g)</td>
<td>-ŋ=</td>
<td>-ŋ=</td>
<td>-ŋ=</td>
<td>-ŋ=</td>
<td>-ŋ=</td>
<td>-ŋ=</td>
<td>-ŋ=</td>
</tr>
<tr>
<td>(cf.XD.RFL, X&gt;&gt;XD, XD&gt;3, X&gt;2/3D)</td>
<td>(cf. XD.RFL, X&gt;&gt;XD, XD&gt;3, X&gt;3D)</td>
<td>(cf. all dual forms)</td>
<td>(cf. XD.ITR, XD.RFL, 1&gt;2D, XD&gt;3S, XD&gt;3P)</td>
<td>(cf. XD.ITR, XD.RFL, 1&gt;2D, XD&gt;3S, XD&gt;3P)</td>
<td>(cf. 2D.ITR, 3D.ITR, 1&gt;2D, 1S&gt;3D, 2S&gt;3D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>note also:</td>
<td>? -n=</td>
<td>? -n=</td>
<td>? -n=</td>
<td></td>
<td>? -n=</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(cf. s&gt;&gt;1s)</td>
<td>(cf. s&gt;&gt;1s, s&gt;&gt;2p, s&gt;&gt;3p)</td>
<td>(cf. s&gt;&gt;1s, 2s/d&gt;s&gt;1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Towa dative constructions, the dual has fully merged with the inverse marking for indexing the S or O argument. However, sporadic other intransitive and transitive dual proclitics also bear a number-marking coda. Similarly in Kiowa a reflex of the non-singular number marker is found in all dative proclitics indexing a dual S or O argument—usually, but not always, nasalized—and in transitive proclitics indexing a
third person dual O argument. In Tewa a variety of dual forms bear a coda /ŋ/, but the
dative usage is less clear since -ŋ= seems to have been reanalyzed effectively as a marker
of dative functions as well.

In the Tiwa languages we find an interesting situation. Dual has been lost as a
significant number category for all S or O arguments in dative and transitive
constructions. However, all proclitics in Taos Tiwa that index a dual A, D, or intransitive
S argument show a non-initial consonant /n/. Similarly in Picuris and Southern Tiwa a
large number of the same types of arguments bear a coda /n/ corresponding with dual.
Since the other Kiowa-Tanoan languages do not show a coda nasal regularly in these
same environments to suggest reconstructing it to the proto-language, it is not
unreasonable to suspect that the dual number marker has been reanalyzed to mark dual in
the indicated constructions\(^\text{13}\). Formally, there is no problem with the sound
correspondences given. Dual is often marked by nasalization, particularly in those
constructions where the Tiwa languages show the dual morphemic consonant, so the
reflex /n/ is not unexpected. Since nasalization is also a feature of parts of the dative
paradigms, the dual consonant is often nasalized in Kiowa anyway. We can probably
reconstruct the dual number increment as *-d=, but note that it is often realized as /n/.
This would make it possibly identical in original form with the plural morpheme above,
but the frequent nasalization may have led it to be retained as an alveolar consonant in
Tiwa rather than leniting to a glide. Or, it may be better to reconstruction the dual

\(^{13}\) Alternatively it could be proposed that Proto-Kiowa-Tanoan did not actually distinguish dual number in
its dative S and O arguments. Kiowa, being the only language with an explicitly distinct dual, may have
thence innovated the dual on the basis of the dual marking for such arguments as found in the Tiwa
languages. Compare too the reconstructions of the plural and dual markers.
morpheme as *-n= and account for its non-nasalized reflexes in Kiowa by analogical leveling with the plural and inverse morphemes. I leave this matter open for now.

It should also be noted that there are a handful of other instances of coda /n/ in the Tiwa languages that require explanation, given in the bottom row of Table 19-13 above. Most striking is its occurrence in the intransitive-dative $S>>1S$ proclitic, where it is replaced by the appropriate number marker in Picuris and Southern Tiwa in the $P>>1S$ and $I>>1S$ construction. In Taos Tiwa the number markers are added following the /n/. It is not impossible that this is (directly or indirectly) a reflex of the dual morpheme. However, the consonant may just as well have been motivated by a desire to distinguish $S>>1S$ from the otherwise potentially homophonous, or nearly homophonous, $S>>3S$.

Similarly the other /n/-final proclitics listed for Picuris and Southern Tiwa may have been derived by analogical processes to fill in a coda consonant to contrast with inverse -$m=$ and plural -$w=$.

19.1.1.5 Summary of Consonant Correspondences

Table 19-14 below summarizes the correspondences among the consonants and the reconstructed form in Proto-Kiowa-Tanoan (in the right-hand column).
In the reconstructed consonant inventory within the pronominal proclitics, we thus find only three stops in pronominal-onset position, */b, t, q/*, plus morpheme-initial */p, d, b/* as onsets in other related morphemes. In coda position the situation in the pronominal proclitics is much less clear, but tentatively we can reconstruct */m/*, */d/* or */n/*, and */D/* a sound I leave unspecified in articulation, but suggest to be */d/* or */l/*.

It is disappointing to leave the coda consonants that index number in such a poor state of analysis, but I hope that the above account at least elicits the appropriate questions to further clarify the situation. Future study should probably look to cross-analyzing the occurrence of these coda increments with other number marking constructions (e.g. modifiers, nominal suffixes) and noun class patterns across the languages. From there the phonology of these morphemes might come better to light.

Finally, the reader may wonder about the status of glottal stop given the large number of vowel-initial proclitics. Glottal stop is certainly a member of the consonant inventory of these languages, so it is reasonable to consider. However, I think it might be

<table>
<thead>
<tr>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>b</td>
<td>b</td>
<td>m</td>
<td>m</td>
<td>m</td>
<td>b</td>
<td>*b (/V)</td>
</tr>
<tr>
<td>m</td>
<td>b-</td>
<td>b-</td>
<td>(-)m</td>
<td>(-)m</td>
<td>(-)l</td>
<td>m</td>
<td>*b (/V)</td>
</tr>
<tr>
<td>m#</td>
<td>b-</td>
<td>b-</td>
<td>(-)m</td>
<td>(-)m</td>
<td>(-)l</td>
<td>m</td>
<td>*b (/V)</td>
</tr>
<tr>
<td>d</td>
<td>d</td>
<td>d-</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>t</td>
<td>*t (/V)</td>
</tr>
<tr>
<td>n</td>
<td>n</td>
<td>n-</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>*d (/V)</td>
</tr>
<tr>
<td>g</td>
<td>g</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>*q (/V[back])</td>
</tr>
<tr>
<td>g</td>
<td>g</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td>s</td>
<td>*q (/V[front])</td>
</tr>
</tbody>
</table>

| d# (-t ~n ~g) | η# | η# | ?w# | ?w# | ?w# | l# | *D# |
| ?m# / ?d#    | η# | η# | ?m# | ?m# | ?m# | l# | *m# |
| d# (~t ~n)    | η# | η# | ?n# | ?n# | ?n# | l# | *d/*n |
found that the proclitics should be reconstructed without any onset glottal stops. We find in Towa, and maybe also in Kiowa, various vocalic contraction phenomena and consonant resyllabification involving the proclitics as to suggest that vowel-initial forms do indeed lack an onset for the purposes of phonology. Such supporting data are not also to be found in Tewa or Tiwa that I have seen, although the negation contractions seen in San Juan Tewa (cf. chapter 11.3) may also suggest an onsetless analysis of vowel-initial proclitics. However, there is not much in the phonology of these languages that hinges upon the issue. On the basis of the Towa (and Kiowa) data, I opt to leave glottal stop out of the proclitics.

19.1.2 Vowel Correspondences

Parsing through the large array of pronominal proclitics and reconstructing the ancestral forms is much more contingent upon the correspondences found among the vowels than those found among the consonants. Table 19-15 summarizes all of the correspondences identified. Other occurring vowels will be taken up in discussion below.
Again, I preview my analysis by separating out the related series using bold lines. Gaps show where no definitive cognate has been identified. Sounds in parentheses are questionable correspondences or correspondences that are only indirectly related to the given set.

**19.1.2.1 Oral Higher Front Vowels**

There are a number of correspondences sets—and numerous actual pronominal forms—that involve a high front or mid-front oral vowel in at least one of the languages. Table 19-16 shows the most basic of these sets. In order to help illustrate the correspondences, I have separated out the morphological increments within the proclitics. Where a form consists of more than one syllable (i.e. contains more than one vowel), I have underlined the vowel of interest. Forms in parentheses are questionable as direct cognates.
Table 19-16: Oral High Front Vowel Correspondence #1

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2S&gt;3I</td>
<td></td>
<td></td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
</tr>
<tr>
<td>2S&gt;3H</td>
<td></td>
<td>be</td>
<td>bi</td>
<td>bi</td>
<td>ku</td>
<td>ki-w</td>
<td></td>
</tr>
<tr>
<td>s&gt;&gt;1P</td>
<td></td>
<td></td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>se</td>
</tr>
<tr>
<td>1P&gt;3S</td>
<td></td>
<td></td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>s-e</td>
<td></td>
</tr>
<tr>
<td>1P&gt;S&gt;3S</td>
<td></td>
<td></td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>s-e</td>
<td></td>
</tr>
<tr>
<td>3P&gt;3S</td>
<td></td>
<td></td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td></td>
</tr>
<tr>
<td>3P&gt;S&gt;3S</td>
<td></td>
<td></td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td></td>
</tr>
<tr>
<td>3I.ITR</td>
<td></td>
<td></td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td></td>
</tr>
<tr>
<td>1P.ITR</td>
<td></td>
<td></td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td></td>
</tr>
<tr>
<td>3P&gt;3P</td>
<td></td>
<td></td>
<td>u</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td></td>
</tr>
<tr>
<td>2S&gt;3I, 3S&gt;3I</td>
<td></td>
<td></td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td></td>
</tr>
<tr>
<td>1S&gt;3H</td>
<td></td>
<td></td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td></td>
</tr>
<tr>
<td>1P.RFL</td>
<td></td>
<td></td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td></td>
</tr>
<tr>
<td>3P.RFL</td>
<td></td>
<td></td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
<td></td>
</tr>
</tbody>
</table>

The reader will note that many of the Tewa proclitics are in parentheses. Due to all of the internal developments in that branch of the family which have reduced the size of the pronominal inventory, inserted onset consonants, and caused analogical reanalysis, it can be difficult to determine in some cases how directly a given Tewa proclitic can be compared to a form in one of the other languages. This issue notwithstanding, we find a number of forms showing this correspondence: a high front vowel /i/ in Tewa and Tiwa and a mid front vowel /e/ in Kiowa and Towa. While reconstructing the proto-form as either */e/ or */i/ would probably be reasonable enough just from this set, evidence from
vowel correspondences in lexical items in chapter 0 and some of the other related correspondence sets below support a reconstruction as a high front vowel */i/ for this series. Kiowa and Towa thence lowered this vowel (or reconciled the high and low portion of the original diphthong *[ia] pronunciation of this vowel as a mid vowel) in environments not otherwise conditioned by the adjacent consonants. This resolution as a mid vowel could just as easily be an independent development as a shared innovation between these two branches.

We find a closely related correspondence set where all languages have the same reflex as above except for Rio Grande Tewa, which shows a lowered vowel /e/. This set is seen in Table 19-17.

Table 19-17: Oral High Front Vowel Correspondence #2

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S&gt;3I</td>
<td>e</td>
<td>e</td>
<td>e</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
</tr>
<tr>
<td></td>
<td>dé / de</td>
<td>dé( )</td>
<td>déh</td>
<td>ti</td>
<td>ti</td>
<td>ti</td>
<td>te</td>
</tr>
<tr>
<td></td>
<td>1S&gt;3H</td>
<td>1S&gt;RFL</td>
<td>1S&gt;RFL</td>
<td>1S&gt;3S</td>
<td>1S&gt;3S</td>
<td>1S&gt;3S</td>
<td>1P&gt;3I</td>
</tr>
<tr>
<td></td>
<td>é-t / e-t</td>
<td>é-t</td>
<td>i·</td>
<td>i-pí</td>
<td>i-bì</td>
<td>s-e-pa</td>
<td>1P&gt;3D</td>
</tr>
<tr>
<td>1P&gt;3I</td>
<td>1P&gt;3</td>
<td>1P&gt;3</td>
<td>1P&gt;3</td>
<td>1P&gt;3</td>
<td>1P&gt;3</td>
<td>1P&gt;3</td>
<td>1P&gt;3</td>
</tr>
<tr>
<td>3P&gt;3I</td>
<td>e-t / 3H&gt;3I</td>
<td>e-t</td>
<td>(d-ê·)</td>
<td>i-pí</td>
<td>i-bì</td>
<td>e-pa</td>
<td>3P&gt;3</td>
</tr>
<tr>
<td></td>
<td>3H&gt;3H</td>
<td>3P&gt;3</td>
<td>3P&gt;3</td>
<td>3P&gt;3</td>
<td>3P&gt;3</td>
<td>3P&gt;3</td>
<td></td>
</tr>
</tbody>
</table>

We find in all of the Rio Grande Tewa forms that the vowel is long\(^{14}\). We also see that the Arizona Tewa cognate contains a long vowel of the same vowel quality as the previous correspondence set, */i/. The first person singular reflexive morpheme in that

\(^{14}\) At least one dialect has a short vowel for the first person singular reflexive proclitic dé=. This appears to be an innovation if the generalization made here is accurate.
language does show a variant with a mid vowel, but the context for this is unknown. It looks like we can reconstruct the vowel in the above forms as */i/ and specify that Rio Grande Tewa lowered the vowel to /e/ when the vowel is long as a relatively late development. Support for this generalization is found in the fact that no conservative form proclitics in Rio Grande Tewa show a long /iˑ/ vowel\(^{15}\). The motivation for the vowel length in these specific pronominal forms, however, is not entirely certain, as will be taken up below.

We find a similar lowering effect in the small correspondence set shown in Table 19-18.

Table 19-18: Oral High Front Vowel Correspondence #3

<table>
<thead>
<tr>
<th></th>
<th>Kt</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>e / æ</td>
<td>e / e</td>
<td>i / e</td>
<td>i / ą</td>
<td>i / į</td>
<td>a</td>
<td></td>
</tr>
<tr>
<td>I.O</td>
<td>-vê·</td>
<td>-bê·</td>
<td>-pê / pi (\text{1S&gt;3I})</td>
<td>(-)pi</td>
<td>(-)bi</td>
<td>-pa</td>
<td></td>
</tr>
<tr>
<td>3A.O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.I.O</td>
<td>-vê-η</td>
<td>-bê-η</td>
<td>-pê-n</td>
<td>pa (\text{XD&gt;3I})</td>
<td>-mį-m</td>
<td>-pa</td>
<td></td>
</tr>
</tbody>
</table>

Only one morpheme is actually found in this correspondence set, the inverse increment. The reflexes of the basic form of this increment are shown in the first row while the forms when combined with dual nasalization are given in the bottom row. Due to that nasalization and the changes it causes in the vowels, we actually have two correspondence sets here. In the first set we find a high front vowel in the Tiwa languages, a mid front vowel in the Tewa languages, and a low back vowel in Towa. I will suggest that the vowel be reconstructed as */i/ again. In Tewa the lowering could

\(^{15}\) But there are forms in the dialect that have such a vowel: the plural reflexive pronounals i = \(1P.RFL\), bi = \(2P.RFL\), di = \(3P.RFL\) and certain negative pronounals. These forms appear to be dialect-internal innovations, as noted in chapter 11.3.
again be due to the vowel length, this time applying in both languages. This could suggest that such lowering originally applied in both languages and that the Arizona Tewa forms in the previous set raised back to a high vowel at a later date.

However the Towa vowel /a/, in concert with the Tewa mid vowel /e/, suggests that we may have some labialization effect, as proposed in chapter 8.7. Significantly, the vowel here does follow a bilabial stop. While a series of labialized bilabial stops was proposed in chapter 0 to account for labialization effects, such consonants were proposed only with trepidation. It could indeed be something about plain bilabial consonants themselves that motivate the reflexes on the vowel, as suggested in that earlier chapter. This issue remains for further study, so for now I tentatively reconstruct the preceding consonant as a plain bilabial, i.e. */p/*, and the vowel as high front */i/*.

When the dual nasalization is added, we see another type of lowering effect on the vowel. Towa does not have a distinct allomorph to index a dual O argument, although the vowel of the -pa increment is nasalized when following a nasalized pronominal form (which indexes a dual A argument). In Southern Tiwa the vowel is simply nasalized with no other change in quality. In the Tewa and Northern Tiwa languages, however, the vowel of the increment is affected by nasalization, becoming the lower front nasal vowel in each of the languages. Such lowering is a common result of vowel nasalization both cross-linguistically and in Kiowa-Tanoan, of which we will see more below. It is not clear whether we can reconstruct the nasalization on the inverse increment to Proto-Kiowa-Tanoan or if such nasalization only happened later within the Tewa and Tiwa branches, as discussed in section chapter 0. However, correspondences below suggest
that such nasalization applied late within the Tewa and Tiwa branches and cannot be
reconstructed to the proto-language.

There is perhaps similar lowering occurring in the small set given in Table 19-19.

Table 19-19: Oral High Front Vowel Correspondence #4

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFL</td>
<td>i</td>
<td>i</td>
<td>q</td>
<td>Q</td>
<td>a</td>
<td>e</td>
<td></td>
</tr>
<tr>
<td>2P.RFL</td>
<td>-vi</td>
<td>-bi</td>
<td>mɔ</td>
<td>mʄ</td>
<td>ma</td>
<td>be</td>
<td></td>
</tr>
</tbody>
</table>

Here we find a high vowel in the Tewa languages, but a lowered vowel in the Tiwa
languages. We here have morphemes that historically began with a voiced bilabial stop,
which has become a nasal stop regularly in the Northern Tiwa languages. The
nasalization of the consonant has subsequently affected the vowel. By regular
correspondence with the non-nasalized Southern Tiwa morphemes, we would expect the
Taos Tiwa vowel to be low front /a/ and the Picuris Tiwa vowel to be /ia/ or /a/, which
have the regular nasal correlates of /ɔ̨/ in Taos Tiwa and /ą/ in Picuris Tiwa. This makes
the vowel correspondence in the Tiwa reflexive morpheme regular. In explanation of the
correspondence between Tewa and Tiwa, it appears that we have another case of
lowering following a bilabial stop, although here there is no trace of labialization.
Specifically, such lowering in Tiwa must have occurred after a voiced bilabial stop to
account for the difference from the inverse increment above where the */i/* did not lower
following voiceless /p/ in Tiwa. The vowel did not lower in the Tewa languages, although
it is unclear why this is.

The same process happened in the second person plural portion of the 2P.RFL
morpheme given in the second row above. Here there are some caveats, however.
Southern Tiwa second person proclitics have tended to nasalize, even when not historically preceding a nasal vowel. It appears in the reflexive form that the homophonous reflexive morpheme may have reinforced the oral quality of the initial bilabial stop (so we have be-be rather than the otherwise anticipated *mą-be-). In Picuris Tiwa we have a high vowel in the reflexive second person plural proclitic. This may be either a highly conservative form retaining the original high vowel of the second person plural morpheme (see below), or it may be an innovation. Such an innovation may have been stimulated by aversion to such a reduplicated-sounding form as the expected *mą-mą.

The final set involving a high vowel is shown in Table 19-20. Here, however, we only find a high vowel in the Tiwa languages. In all of the other languages, we find a low front or back vowel.
The reader can see that all of these forms begin with a bilabial stop, oral in all but the
Tiwa languages, and that they all index a second person plural argument. Southern Tiwa
would be expected to show an oral stop /b/ in such proclitics since no nasal vowel is
involved, but either by analogical spread (from dual proclitics and proclitics bearing the
nasal inverse increment -m=) or by the same nasalization of voiced stops as we find in
Northern Tiwa\textsuperscript{16}, most second person plural proclitics have a nasal stop. Given that we
find low vowels in three out of four branches of the family, we may expect to try to
reconstruct a low vowel to Proto-Kiowa-Tanoan, and indeed we just might do this…sort
of. However, I am actually going to reconstruct it as a high vowel!

\textsuperscript{16} It is possible that this nasalization process had started shortly before the break-up of Proto-Tiwa but then
subsequently arrested in Southern Tiwa having only affected a relatively small number of morphemes.
Within the paradigms in which the above second person plural proclitics are found, a reflex of */i/ is to be seen systematically in the first and third person plural counterparts. I suggest that the same */i/ was originally found in the labial-initial second person forms as well. This vowel, often realized as a diphthong *[ia], was then realized as low following a (voiced) bilabial stop\textsuperscript{17}, at least in all but the Tewa branch, which is the same development we saw in the inverse increment -\textit{pa} (\textless *\textit{pi}) in Towa above. We will see further suggestion of this kind of lowering in the next section. Significantly, however, it can be noted that we really do not find much in the way of /bi/ sound sequences in any of the modern languages except Tewa\textsuperscript{18}.

Given that we find this lowering in three out of four of the branches (and not three that we might suspect form a subgroup), it is worth asking whether this lowering might be reconstructed to Proto-Kiowa-Tanoan. That is, even if the vowel in the above pronominals could ultimately be traced to */i/, perhaps it had already begun to be realized as low following bilabial stops in Proto-Kiowa-Tanoan. This could very well be the case, but we would perhaps have to posit that the allophonic relationship between */i/ and the lowered vowel remained active enough that the vowel "sprang back" to high when the lowering alternation ceased to apply in the Tewa branch. Whether or not the lowering was in effect at the time of the proto-language, we see an original */i/ becoming /a/ in Kiowa\textsuperscript{19}, /a/ in Towa, and /a/ in Tiwa (which has the nasalized reflexes /ɔ̨/ in Taos Tiwa, /q/ in Picuris Tiwa, and /q/ in Southern Tiwa). Those Picuris and Southern Tiwa forms

\footnote{\textsuperscript{17} We would perhaps have to specify it as a voiced bilabial stop since we do not see comparable lowering in the /p/-initial inverse increment in Tiwa.}

\footnote{\textsuperscript{18} There are limited exceptions. I can find only a single Kiowa word that has this sequence outside of a nasal context, \textit{pa bi} brother of a male; and only a single non-borrowed monomorphemic example in Southern Tiwa, \textit{biéu} but.}

\footnote{\textsuperscript{19} The /e/ and /ɔ/ vowels we find in some of the given Kiowa forms will be discussed below.}
with /i/ appear to be analogical innovations within the respective paradigms and not fully cognate within the above correspondence set.

In summary we find an original high front vowel */i/ within a number of proclitics. This high vowel tended to be lowered following bilabial consonants in all but Tewa: only following voiced bilabial consonants in Kiowa and Tiwa and following all both voiced and voiceless bilabial consonants in Towa. It has also lowered to a mid front vowel in Tewa under conditions of vowel length. Labialization may have been involved in some of this lowering, but this requires a further understanding of labialization and bilabial consonants in the family across the board.

19.1.2.2 Nasal Higher Front Vowels

The next set of sound correspondences I also classify as high front vowels even though the most common reflex of the proposed proto-language vowel is not in fact high. To go ahead and spoil the ending, the following series represent the nasal high front vowel */i/.

Table 19-21 represents the most basic correspondence set of this series.
Table 19-21: Nasal High Front Vowel Correspondence #1

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S&gt;3D</td>
<td>nę-n</td>
<td>g-ɑ</td>
<td>ɑ~ə</td>
<td>ɑ~ə</td>
<td>ą</td>
<td>i</td>
<td>ti-l</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(1S&gt;S&gt;3D)</td>
</tr>
<tr>
<td>1D.ITR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>j</td>
</tr>
<tr>
<td>3D.ITR</td>
<td>e</td>
<td>d-ɑ</td>
<td>d-ɑ</td>
<td>ą-n</td>
<td>ą-n</td>
<td>j-n</td>
<td>j-l</td>
</tr>
<tr>
<td>3D&gt;3P</td>
<td>ź-n</td>
<td>ąn</td>
<td>am</td>
<td>in</td>
<td>j-l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3D&gt;S&gt;3S</td>
<td>e</td>
<td>(d-ę-ŋ)</td>
<td>d-ę-ŋ</td>
<td>ą-ŋ</td>
<td>ą-ŋ</td>
<td>j-mj-m</td>
<td>j</td>
</tr>
<tr>
<td>S&gt;&gt;3D</td>
<td>(d-ę-ŋ)</td>
<td>(d-ę-ŋ)</td>
<td>ą-ŋ</td>
<td>ą-ŋ</td>
<td>j-m</td>
<td>j</td>
<td></td>
</tr>
<tr>
<td>1D.RFL</td>
<td>(ę-ŋ)</td>
<td>(ę-ŋ)</td>
<td>k-ō-ń</td>
<td>k-ą-m</td>
<td>k-j-n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3D.RFL</td>
<td>(d-ę-ŋ)</td>
<td>(d-ę-ŋ)</td>
<td>ą-n</td>
<td>j-n</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note that all of these proclitics index dual number on either an A or D argument. That indicates that the nasalization involved is morphological and that these proclitics can potentially be related to other (non-nasalized) proclitic forms from which they are derived. So many of the Tewa pronominals are marked by parentheses because of the ambiguity of their relationship to the corresponding proclitics in the other languages. The apparently analogical spread of the /d/ increment in third person non-singular forms and the multiple sources of coda /ŋ/ make direct comparison difficult.

What we do find in this correspondence set is a high front nasal vowel in Southern Tiwa and Towa, a low back nasal vowel in Northern Tiwa, and a low front nasalized vowel in Kiowa and Tewa. Such a mixed series of nasal vowels was seen in chapter 8.6.2 as a reflex of high front */i/’. In Tewa we also find a low back vowel when the vowel is denasalized--/a/ is one of the oral correspondents to nasal /æ/ within Tewa—and when there is no onset consonant in Arizona Tewa (in the 1D.RFL proclitic ąŋ). In the reconstructed schematic patterns of the preceding chapters we already saw suggestions
that the dual may have been derived by nasalizing the plural/inverse pronominals, i.e. those containing */i/. Therefore we might reconstruct the vowel in the above set as */i/.

Under this reconstruction, we may at first think that Southern Tiwa and Towa are both being conservative. However, there may be reason to believe that the high front vowel of these two languages is actually a late development (which just happens to be identical to the original proto-form). Towa appears not to have permitted an alveolar consonant before a high front vowel until relatively recently. Such /Tį/ sequences that we do find indicate that the high vowel derives by the regular modern pattern of raising a lower nasalized vowel (cf. chapter 0). That would suggest that the transitive 1S>3D proclitic tįl= actually derives from something more like *[tɛl] at an earlier stage of Towa. The evidence internal to Southern Tiwa is not quite as transparent, but the correspondences we see with Northern Tiwa (where the corresponding vowel is low) also suggest that the Southern Tiwa /i/ could actually be a relatively recent raising of a lower (probably front) vowel, although there is still the possibility it is truly a conservative form.

If this is the case, then we find that none of the four branches internally had a high front nasal vowel in these proclitics. This would suggest that the Proto-Kiowa-Tanoan */i/ had already lowered before the break-up of the family. Therefore to be phonetically accurate, we would probably want to reconstruct some sound like [ɛ] or [æ] to the last stage of Proto-Kiowa-Tanoan. Indeed, like the high front oral vowel, this nasal counterpart may have been a diphthong *[iɛ] in Proto-Kiowa-Tanoan. However, I will still opt to call this nasal high vowel */i/ in order to identify its historical phonological behavior. This kind of phonetic lowering of nasalized vowels compared to their oral
counterparts is quite common cross-linguistically, so we should not be surprised at such a
development in Kiowa-Tanoan.

Having established such a lowered nasalized high vowel in the system, we can
move on to the subsequent developments. Table 19-22 shows the next correspondence set
related to the one above.

Table 19-22: Nasal High Front Vowel Correspondence #2

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2D&gt;S&gt;3S</td>
<td>ḡ</td>
<td>ḡ</td>
<td>ḡ</td>
<td>ḡ</td>
<td>ḡ</td>
<td>ḡ</td>
<td>q / q</td>
</tr>
<tr>
<td>S&gt;&gt;2D</td>
<td>mą</td>
<td>mą-péñm</td>
<td>mį-m</td>
<td>mą</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S&gt;&gt;2D</td>
<td>mą̹</td>
<td>mą-n-an</td>
<td>mį-m</td>
<td>mą</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D&gt;3I</td>
<td>mę-n / mę</td>
<td>mą-bę</td>
<td>mą-mų-m</td>
<td>mą-pa</td>
<td>mą-pa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D&gt;3D</td>
<td>mę-n / mę</td>
<td>mą-bęŋ</td>
<td>mą-pa</td>
<td>mą-pa</td>
<td>mą-pa</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In all of these proclitic forms we find a bilabial nasal stop preceding the vowel. These are
some of the dual counterparts to the bilabial-initial second person plural proclitics we
encountered above. As the reader may anticipate, we have the potential for two types of
lowering effects: one caused by nasalization, and one caused by a preceding bilabial. In
the Tiwa languages we see the same vowel reflexes as in the preceding correspondence
set, suggesting that the bilabial does not have any particular added effect to the nasal
vowel: it stays a low nasal vowel in Northern Tiwa, but raises to high in Southern Tiwa.
In the nearest Tewa cognates (formally if not functionally), we find a low back vowel in
Arizona Tewa. In Kiowa there does seem to be a cumulative effect: instead of the /q/ we
found above, here the basic reflex of */i/* following a bilabial stop is /q/ (this receives

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more support in the next related correspondence set). The other vowels /ɔ/ and /ɛ/ are morphologically derived within Kiowa and will be discussed farther below. In Towa things get interesting.

Towa also seems to show a cumulative effect, the bilabial stop causing the lowered nasal vowel to stay low and indeed to back. There are two reflexes in Towa of Proto-Kiowa-Tanoan */i/: /ɔ/ and /ɛ/. Language internally, both of these vowels end up being anomalous. For starters, the low back nasal vowel /ɛ/ does not regularly occur phonemically outside of the pronominal proclitics (one exception was mentioned in chapter 8.4.2), but we do find such phonemic instances here. Secondly, the sequence /mɔ/ does not occur in Towa outside of the pronominal proclitics. Both of these factors make it difficult to determine a full phonological motivation for the distribution of these two different reflexes. We will return to this issue after the next two (related) sets. For the above table, it can be noted that the reflex is /ɛ/ when preceding the inverse increment -pα-, which also contains a low back vowel. The two proclitics with the /ɛ/ reflex are both from dative series.

The correspondence set in Table 19-23 is identical to the one above except for the vowel in Southern Tiwa.

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20 Recall that the bilabial stop is here historically nasalized by a following nasal vowel. That is, it's the vowel transferring nasalization to the consonant, not vice versa.
**Table 19-23: Nasal High Front Vowel Correspondence #3**

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>q</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>q</td>
<td>e</td>
<td>q / q</td>
</tr>
<tr>
<td>2D. ITR</td>
<td>mą</td>
<td>bą</td>
<td>bą</td>
<td>mą-n</td>
<td>mą-n</td>
<td>mę-n</td>
<td>mąl</td>
</tr>
<tr>
<td>2D &gt; 3P</td>
<td>má-n`</td>
<td>mą-n</td>
<td>mąm</td>
<td>mę-n</td>
<td>mą-l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D. RFL</td>
<td>mą-n</td>
<td>mą-n</td>
<td>mą-n ( &amp; 3D. RFL)</td>
<td>mę-n</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 &gt; 2D, 1 &gt; S &gt; 2D</td>
<td>mą</td>
<td>mą-n</td>
<td>mą-n</td>
<td>mę-n</td>
<td>mąl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D &gt; 3S</td>
<td>mą`</td>
<td>mą-n</td>
<td>mą-n</td>
<td>mę-n</td>
<td>mą</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Kiowa we find further support for the /q/ reflex of */i/ following a bilabial stop (as well as a morphological /ɔ/ again). In Tewa we find a low back vowel that has undergone denasalization. In Towa we find the same two reflexes following a bilabial, /q/ and /q/. We can note here that the forms with /q/ all bear a reflex of the dual coda increment -l. Finally in Northern Tiwa we see the same low vowel reflexes as in the previous series, but in Southern Tiwa we see something new. Instead of a high front nasal vowel /ί/, as in the previous two correspondence sets, or a low vowel /q/, as in the nasalized form of the reflex of oral */i/ following a bilabial stop, here we find a mid front vowel /ę/. The only phonological context that sets these proclitics apart is the coda /n/. Since we do not find any forms /mίn/ among the Southern Tiwa pronominal proclitics, it suggests that the coda here keeps the vowel from raising to /ί/. That is, Proto-Kiowa-Tanoan */i/ is realized as /ę/ in Southern Tiwa when following a /m/ and preceding a coda /n/.

Table 19-24 presents the last correspondence set that reflect Proto-Kiowa-Tanoan */i/, the lowered realization of the nasalized high vowel */i/.

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Table 19-24: Nasal High Front Vowel Correspondence #4

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ě</td>
<td>(a~ć)</td>
<td>(a~ć)</td>
<td>ě / ě</td>
<td>a</td>
<td>į</td>
<td>a / a</td>
</tr>
<tr>
<td>3D&gt;3S</td>
<td>ě́</td>
<td>(dą̨-ŋ)</td>
<td>(dę̨)</td>
<td>ė-n</td>
<td>a-n</td>
<td>į-n</td>
<td>ģ-pa</td>
</tr>
<tr>
<td></td>
<td>1&gt;2S</td>
<td>ě-m</td>
<td>ė-n</td>
<td>ě-m</td>
<td>ė-n</td>
<td>ģ-pa</td>
<td>ģ-pa</td>
</tr>
<tr>
<td></td>
<td>ě-n</td>
<td>(a-ŋ)</td>
<td>ě-n</td>
<td>ě-n</td>
<td>ģ-pa</td>
<td>ģ-pa</td>
<td>ģ-pa</td>
</tr>
<tr>
<td></td>
<td>ě-n</td>
<td>(a-ŋ)</td>
<td>ě-n</td>
<td>ě-n</td>
<td>ģ-pa</td>
<td>ģ-pa</td>
<td>ģ-pa</td>
</tr>
<tr>
<td>3D&gt;3I</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
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<td>ė-n</td>
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<tr>
<td>1D&gt;3S</td>
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<td>ė-n</td>
<td>ė-n</td>
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<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
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<tr>
<td>1D&gt;3I</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
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<td>ė-n</td>
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<tr>
<td>3D&gt;3I</td>
<td>ė-n</td>
<td>ė-n</td>
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<td>ė-n</td>
<td>ė-n</td>
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<td>ė-n</td>
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<td>ė-n</td>
<td>ė-n</td>
</tr>
<tr>
<td>1D&gt;3P</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
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<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
</tr>
<tr>
<td>1D&gt;S&gt;3S</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
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<tr>
<td></td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
<td>ė-n</td>
</tr>
</tbody>
</table>

The Kiowa and Tewa reflexes (insofar as the latter are directly cognate) as well as the Picuris Tiwa and Southern Tiwa reflexes are exactly as we find above when the vowels are not lowered by a preceding bilabial consonant (except that the transitive 1>2S proclitic of Southern Tiwa, i=, is denasalized, as commonly happens to nasal vowels in this language). In Taos as well we find the same reflex, although in those proclitics with the dual-inverse increment -pé-n=, we find the correct lowered vowel quality, but denasalized. In Towa, however, we find the same two reflexes as those that followed a bilabial stop, /q/ and /q/, and not the reflex /q/ seen in the first set. Before discussing these, note in the first person dual proclitics that we find /s/ as a reflex of */q/. It was suggested in section 19.1.1.3 that we find this alveolar fricative reflex only preceding front vowels (specifically, mid front vowel reflexes in Towa). However, here we find /s/
preceding back vowels. This suggests that the backing of the vowel which is a reflex of */t/ occurred after the fronting of this consonant.

How do we account for the two back reflexes of the */t/ that we find here in Towa? The fact that we only find /sq/ and /s0/ and never */si/ suggests that the preceding /s/ might prevent the vowel from raising. That is, we would say that */t/ becomes back /q ~ 0/ following /s/ in Towa, although this does not seem well motivated phonetically. We again find /q/ preceding the inverse increment -pa=, suggesting that the vowel of the increment and/or the bilabial may motivate the low back vowel. This is true even when there is no preceding consonant to induce lowering (or prevent raising), as in q-pa=.

Such reasoning does not apply to the transitive 3D>3S clitic q=, however, which would be expected to raise to /t/ lacking adjacent phonological context to maintain the low vowel. This form may be motivated by analogical leveling within the paradigm: both 1D>3S sq= and 2D>3S mq= contain the vowel /q/, as do all of the transitive XD>3D and XD>3I proclitics which have the inverse increment -pa=)\(^{21}\). In the 1>2S proclitic, we find two variants in different sources: /q/ and /a/. However, this may actually reflect another source of the second person singular morpheme and may not actually be cognate with the Tiwa and Kiowa proclitics given (see next section).

The contrast between /q/ and /q/ is slippery, but may be influence by the respective paradigms in which they occur (or rather phonological elements common to the paradigms in which they occur). We already noted that only /q/ occurs before the

\(^{21}\) For a purely phonological explanation, it is possible that tone is a factor. Even though the modern Towa proclitics can be analyzed as bearing low tone (or rather, are unspecified for tone), this seems to be a Towa-internal development and could very well have happened recently. We might then suspect that vowels with high tone (i.e. some prominence) maintained a low vowel realization while those with low tone (i.e. less prominence) were raised to /t/.
inverse increment -\texttt{pa}=, which is found in both the transitive and transitive-dative paradigm. This fact notwithstanding, we only find /q/ in the transitive paradigm in proclitics indexing a third person singular O argument. The /q/\textsuperscript{22} we find only following a consonant /s/ or /m/ in the two dative paradigms, in the transitive with a plural inanimate O argument (and thus in the reflexive too), and in the intransitive second person dual. The one thing that all of these /q/ environments have in common is that they all are followed, or can be followed, by the number increment -\texttt{l}-. The instances of /q/ that we find are never directly followed by any usage of -\texttt{l}-. This suggests that either the modern -\texttt{l}- itself (or the L-effect, rather), or one of its historical antecedents before they were neutralized to the lateral articulation\textsuperscript{23}, may have stimulated the low vowel to become raised and rounded. This matter of course requires further investigation.

In summary I reconstruct a nasal correspondent to the high front vowel proposed in 19.1.2.1. That is, in complement to */i/* we also have original */i/. This high front nasal vowel appears to have lowered phonetically to *[ɛ], perhaps by the time of the break-up of Proto-Kiowa-Tanoan, leading to lower vowel reflexes across all branches. This lowered front nasal vowel subsequently tended to lower even further following bilabial and other consonants variably in the four branches of the family.

\textit{19.1.2.3 Low Vowels}

The above two sections account for the numerical majority of the pronominal proclitics, including virtually all that index non-singular arguments (in comparative

\textsuperscript{22} There are some other instances of /q/ in the Towa proclitics that do not originate from */i/.

\textsuperscript{23} The fact that the reconstructed inverse morpheme is bilabial *-\texttt{m}= is an enticing match to the rounded vowel /q/, although the necessary consonant correspondence is still highly questionable. Also, even though I reconstructed the plural morpheme as *-\texttt{D}=, that its Tiwa reflex is labiovelar -\texttt{w}= is also interesting in this light.
perspective, notwithstanding language-internal innovations, i.e. Kiowa vowels). This section accounts for the sound correspondences in many of the remaining pronominals indexing singular arguments. Table 19-25 presents the most basic of these sets.

Table 19-25: Oral Low Back Vowel Correspondence #1

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S&gt;3S</td>
<td>gya</td>
<td>dó</td>
<td>dó</td>
<td>(tɑ 1S.RFL, 1S&gt;S&gt;3S)</td>
<td>(tɑ 1S.RFL)</td>
<td>(tɑ 1S&gt;S&gt;3S)</td>
<td>tɑ</td>
</tr>
<tr>
<td>2S&gt;3S</td>
<td>a / á 3H&gt;3S</td>
<td>ó 3&gt;3S</td>
<td>ó 3&gt;3S</td>
<td>ç</td>
<td>a</td>
<td>a</td>
<td>q ~ u</td>
</tr>
<tr>
<td>2S.ITR</td>
<td>á 3H.ITR</td>
<td>ó 2S.IMP</td>
<td>ó 2S.IMP</td>
<td>ç</td>
<td>a</td>
<td>a</td>
<td>q ~ u</td>
</tr>
</tbody>
</table>

In all of the language we find a low vowel, except in Tewa where we find a back rounded mid vowel (the modern Tewa reflex of an earlier low vowel, cf. chapter 8.4.1). In Kiowa we find the low front vowel, which is not the typical correspondent in this vowel set in primary lexical forms (which is /ɔ/), but may be the form found in phonologically non-prominent positions, at least as suggested by the pronominal proclitics. The Tiwa transitive 1S>3S proclitics given in parentheses are thought to be only indirectly related (see chapters 0 and 0) and are not exact correspondences, although they do suggest the original forms that filled that position. We can also note that sometimes the functional correspondent in a given language has a nasal vowel where other languages have an oral vowel, i.e. the Taos Tiwa intransitive second person singular ç= and the variants of the Towa second person proclitics. The intransitive nasal-oral dilemma was discussed in chapter 0. While it is possible that there was a nasal vowel here, as reflected in Taos Tiwa and somewhat in Towa, the Taos form may just be an import of the transitive 1>2S
proclitic in order to disambiguate first and second person singular in the intransitive paradigm (where they would both be ɔ= by regular correspondences otherwise).

The variation in the Towa forms stems from different sources: Yumitani (1998) and Myers (1970) both give the nasal variants while Hale (1956-1957), Heins (1994), and Sprott (1992) all record the oral variants. The same is true of the transitive 1>2s from the previous correspondence set (where the correspondence is uncertain). The correspondences here would suggest that the oral form is the older, but the source of the nasal variant is not apparent. Like in Taos Tiwa, it could be an import from the 1>2s form, but then we need to account for why that form is /ɑ̨/ and not the formally expected /ŋ/.

Setting aside the issue of nasality, there is no reason not to reconstruct a low vowel for this correspondence set. Thus I reconstruct the vowel as low back */ɑ/. Such a reconstruction is also supported by the next set.

Table 19-26 presents proclitics that illustrate the nasal correlate to the low vowel above.

Table 19-26: Nasal Low Back Vowel Correspondence #1

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>æ  (~ o)</td>
<td>ʔ</td>
<td>ʔ</td>
<td>a</td>
<td>a</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td>gyá</td>
<td>gæ-ŋ</td>
<td>kɔ́</td>
<td>kɔ́</td>
<td>ka</td>
<td>kɔ́</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2s,DRFL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1s&gt;3s&gt;3s</td>
<td>(dó-ŋ)</td>
<td>tɔ́</td>
<td>(ta</td>
<td>ta</td>
<td>tɔ́</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1s,RFL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2s&gt;3s&gt;3s</td>
<td>ą</td>
<td>(ò-ŋ)</td>
<td>(ŋ)</td>
<td>ʔ</td>
<td>a</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(òŋ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All of these are dative proclitics which were suggested in chapters 0 and 0 to be derived by nasalization from intransitive and transitive counterparts. It is questionable whether
the Tewa proclitics in parentheses are direct cognates. They appear to be transparently derivable from transitive forms by appending the dative marker -ŋ= and thus may have undergone phonological reanalysis accordingly. Nasal /q/ has no strong phonemic status in Tewa, thus the expected Tewa correspondent would be /q/, which often appears to be fronted to /æ/ in Rio Grande Tewa before a coda /ŋ/. This suggests the transitive-dative-reflexive proclitic gæŋ= may actually be cognate with the first set in the table above.

The rest of the proclitics above appear to be regularly produced if we assume they are reflexes of a nasal counterpart to */a/, that is */q/. We find a low vowel in the Tiwa languages which is denasalized in Southern Tiwa by common development. In Kiowa we also find non-nasal vowels when the non-dative argument is singular: gyá= s>>2s and á= s>>3s. However, it was noted in chapter 0 that the plural counterparts to these do show nasalization which is otherwise unexplained: yán= p>>2s and án p>>3s. In Towa we find mid back rounded /q/ given that the nasal counterpart to modern Towa /a/ is not regularly phonemic in the language (contra the development of PKT */i/ in the previous section). Note that looking to the Towa proclitics as a whole, occurrences of /q/ have two different sources: */q/ and */i/. This also explains why */q/ is not fronted to /s/ in the Towa dative s>>2s form above: the /q/ here was never a front vowel to motivate the sound change in the consonant and the velar articulation is preserved.

Finally we can note one other morpheme that appears to show a reflex of */q/, realized in an only slightly different vowel correspondence set given in Table 19-27.

Table 19-27: Nasal Low Back Vowel Correspondence #2

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PT</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
</table>

24 The Arizona Tewa s>>3s and one variant of the Rio Grande Tewa cognate have raised the vowel to /q/, which does make the association with the transitive form more difficult to identify.
Here in the spatial marker, we find the same vowels in Tiwa and Towa as were presented above, but the low back vowel /q/ in Tewa. This illustrates the regular Tewa reflex of */q/ when not fronted by a coda /ŋ/.

We have now added another oral and nasal vowel to our inventory of reconstructed sounds in the Proto-Kiowa-Tanoan proclitics: low back */a/ and */q/.

Although they are realized in fewer forms than the */i/ and */į/ we saw in previous sections, support for these low vowels seems fairly strong.

**19.1.2.4 Questionable Vowels**

The last few correspondent sets are trickier than the above, both in the fact that they are realized in so few cognate sets in the proclitics and in the evaluation of the validity of those sets as fully cognate. I will propose an analysis, but I would not be surprised if some other explanation could be found to account for the given cognate sets.

Table 19-28 lays out the first of the questionable sets.

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pl</th>
<th>ST</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S&gt;3P</td>
<td>a</td>
<td>o</td>
<td>o</td>
<td>c</td>
<td>a</td>
<td>e</td>
<td>i</td>
</tr>
<tr>
<td>1S.ITR</td>
<td>gyat</td>
<td>ta</td>
<td>te</td>
<td>ti-l</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The correspondence in this set almost looks identical to that found as a reflex of */a/ above. The primary problems—in addition to the limited number of cognate sets and the gaps we see in those sets—are the divergent Southern Tiwa and Towa forms. By regular
lexical sound correspondences, we would expect to find /a/ in Taos Tiwa to correspond to the /e/ of Southern Tiwa. However, what we find instead in correspondence is /ɔ/ (albeit in a different cognate set, so not the strongest evidence). Conversely by regular lexical sound correspondences, we would expect higher rounded vowels in Kiowa and Tiwa and either /u/ or /e/ in Tewa to correspond with Towa /ɨ/. Another expectation we might have of Towa is suggested by the transitive 1S>3P proclitic. All things being equal, the plural O argument proclitics are similar to the singular O argument proclitics, but with an added -l- to mark the plural\(^{25}\). This would suggest a 1S>3P form *ta-l-, which does not exist.

Then there is the first person singular intransitive proclitic of Towa, which is just a vowel correlating to vocalic forms in the other languages, but not with a vowel correspondence we have encountered before.

I tentatively suggest a reconstruction of a high vowel */i/ here. In Southern Tiwa this vowel is retained in its lower fronted reflex /e/ in the 1S>3P form. In Towa the vowel is backed to high back /ɨ/ although the basis for this is not at all transparent. In Kiowa the vowel is lowered to low front /a/, a relatively common reflex of */i/. Tewa and Northern Tiwa, however, are anomalous in presenting vowels that are typically reflexes of low */a/. Given the low component of the diphthongal nature of PKT */i/, a low vowel reflex is not surprising, although the particular low back reflexes in these languages are not expected. These sets simply require further consideration, particularly following any study of non-stressed stem-final vowels.

The above proposal is either supported or weakened by the intransitive-dative proclitic correspondence shown in Table 19-29.

\(^{25}\) There are some other differences as well actually, both language-internally and by comparative-historical reconstruction.
As was mentioned with the derivation of */q/ above, many dative proclitics appear to be derived from non-dative counterparts by nasalization. The cognate set above seems to so derive from the first person singular intransitive proclitic of the previous table. That is, it would have derived from */i/. What this correspondence set suggests is that an original nasal high front vowel */i/ underwent its regular development in Kiowa and the Tiwa languages. It is questionable whether the Tewa form given is related at all, but notably we do find a high vowel reflex. Towa, however, is once again anomalous and simply has a nasalized version of its irregular oral reflex of */i/, nasal */i/ to correspond with oral */i/. As above, the basis for this high back vowel reflex is not at all apparent. However, the similarity to what we saw in the previous set does at least suggest that these cases should be treated together in future research.

We also find another correspondence set wherein Towa shows a reflex */i/, shown in Table 19-30.

<table>
<thead>
<tr>
<th>Table 19-30: Oral Low Front Vowel Correspondence #2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>2S&gt;3P</td>
</tr>
<tr>
<td>3P.ITR</td>
</tr>
</tbody>
</table>
Problematic issues related to this set were already mentioned in chapter 0 with respect to the intransitive third person inanimate plural proclitic. What we find here are suggestions of the above correspondence set I claimed comes from */i/: the Towa reflex /ɨ/ corresponding to the Kiowa reflex /a/, plus perhaps a Tewa reflex /o/. The Tiwa languages are then strange in showing a high back rounded vowel. Interestingly, this is the regular Tiwa correspondence to Towa /ɨ/ in lexical stems although the Kiowa forms then do not fit. It was suggested in chapter 0 that the Kiowa forms do fit, however, so how do we reconcile these forms? If it were only the 3P.I TR and 3S>3P proclitics, we would probably decide that the Tiwa proclitics just are not cognate with the Kiowa and Towa forms. The 2S>3P pronominal set, however, suggests that there indeed might be a relationship and it might have to do with that coda consonant seen in Towa.

The -ɨ- of Towa in these forms functions as the inanimate plural increment, what we reconstructed in chapters 14.5 and 19.1.1.4 as *-D=. The reflex of this morpheme in Kiowa is the /ɡ/, fronted to onset position by the sporadically occurring metathesis. While shaky on phonetic grounds, the suggested reflex of the plural marker in Tiwa is the actually occurring modern plural marker -w=, which does well with that back rounded vowel we see in the above proclitics. We have already seen as a Tiwa-internal development how /iw/ and /aw/ have monophthongized to /u/ in Picuris Tiwa. I suggest the same has happened in the above proclitics. The vowel should be reconstructed as */i/ (or whatever the appropriate vowel is attributable to the sets above), as indicated by the Kiowa and Towa (and maybe Tewa) forms. The reflexes of this */i/ in the Tiwa languages in combination with the Tiwa reflex of *-D= would have given rise to the
following syllable rimes: Taos Tiwa /ɔw/ (or perhaps /aw/), Picuris Tiwa /aw/, and Southern Tiwa /ew/. None of these rimes are actually found in the modern proclitics, which does suggest they may have developed into /u/ (and subsequently /o/ in Picuris Tiwa). Thus this correspondence set gives us a few more cognates that reflect the irregular developments of Proto-Kiowa-Tanoan */i/ described above, if this account is to be believed.

Finally, we have one more correspondence set (or two related sets, rather). This is shown in Table 19-31.

Table 19-31: Complex Syllable Correspondence

<table>
<thead>
<tr>
<th></th>
<th>K₁</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&gt;S&gt;₁</td>
<td>ay</td>
<td>ay</td>
<td>ey</td>
<td>æ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2&gt;S&gt;₁</td>
<td>mây</td>
<td>may</td>
<td>bey</td>
<td>bæ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mɔm</td>
<td>bɛn</td>
<td>bæ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the first set, we find the only instance of a coda /y/ among the pronominal proclitics of Tiwa. The vowel correspondence among the Tiwa languages is a regular one among the lexical stems as a reflex of */i/*. We also find correspondences in the lexicon between Tiwa /Vy/ and Towa /æ/, as seen in chapter 10.2. There is no reason not to reconstruct the sequence in the same way, so I will suggest a reconstruction of */igʲ/.

I am not entirely certain that the second set can be reconstructed as a distinctive pronominal to Proto-Kiowa-Tanoan. In the forms given, and in being the dative counterpart to the proclitic in the first set, it seems to be derived by nasalization, although no such nasalization is found in Towa. We see full nasalization in the Taos Tiwa form, but only a nasal stop added in the Southern Tiwa form with no concomitant nasalization.

26 Southern Tiwa /u/ is often realized as [o]. There is no contrast in the high and mid back rounded vowels though.
of the initial bilabial stop. Note however that the Southern Tiwa $2>p>l$ form is baw= with a low vowel, the expected reflex when nasalization is applied, but with subsequent denasalization. This being the case, we can probably reconstruct the vowel (or rime) as */iɡ/. It is not certain whether or not the coda should actually be reconstructed to this form, as noted in chapter 18.2.

This section has suggested that we should reconstruct a high front vowel */i/, and its nasal counterpart */i/ for these anomalous cases. While I do think there is a case for these vowels, as presented, I am not yet fully certain of their reconstruction.

19.1.2.5 Summary of Vowel Correspondences

Table 19-32 provides a summary of the above vowel correspondences, the conditioning environments, and the reconstructed vowels of Proto-Kiowa-Tanoan that occur in the proclitics.

Table 19-32: Proclitic Vowel Correspondences and Reconstructions

<table>
<thead>
<tr>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>e</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
</tr>
<tr>
<td>e</td>
<td>e (/~)</td>
<td>e ~ i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>e</td>
</tr>
<tr>
<td>e</td>
<td>e (/~)</td>
<td>e (/~)</td>
<td>i / ɨ</td>
<td>i / ɨ</td>
<td>i / i</td>
<td>ɨ</td>
<td>α</td>
</tr>
<tr>
<td>a</td>
<td>i</td>
<td>i</td>
<td>ɨ</td>
<td>ɨ</td>
<td>ɨ</td>
<td>ɨ</td>
<td>*i (/B_)</td>
</tr>
<tr>
<td>e</td>
<td>a ~ ɨ</td>
<td>a ~ ɨ</td>
<td>ɨ</td>
<td>ɨ</td>
<td>ɨ</td>
<td>ɨ</td>
<td>ɨ</td>
</tr>
<tr>
<td>e</td>
<td>(e)</td>
<td>(q ~ e)</td>
<td>ɨ</td>
<td>ɨ</td>
<td>ɨ</td>
<td>ɨ</td>
<td>q (/k, p)</td>
</tr>
</tbody>
</table>
In the notations for environments, “B” indicates any voiced bilabial stop, “N” indicates a nasal stop, “.” indicates a syllable break, and lower case letters indicate individual sounds found in the individual languages. By standard linguistic conventions, the “_” indicates the position of the affected sound with respect to the conditioning environment.

The above analysis reconstructs four vowels to the pronominal proclitics of the proto-language, two oral */i, a/* and two nasal */i, q/*, plus a complex syllable with a coda velar in oral */ig/* and perhaps also nasal */ig/*. There do remain some problematic issues among these reconstructions. There is the question of the conditioning environments that dictate the three reflexes of */i/* in Towa: */i/*, */q/*, and */q/*. There is also some doubt surrounding the reconstructed high front vowels */i, i/* for the proposed correspondence sets of section 19.1.2.4. However, I think this does give us a good working theory of the vowels from which to research the pronominals further.
19.1.2.6 Addendum: Kiowa Vowels

We encountered a small number of proclitics, and a number of individual sounds in proclitics, in chapters 0 through 0 that I did not reconstruct to the proto-language and for which I was not always able to posit an origin. While my analysis would indicate that these are mostly branch-internal or language-internal innovations, we do want to ultimately account for their sources. The most systematic of these omissions was the regular number-marking vowel patterns that are found in Kiowa. Whereas the Tiwa and Towa branches mark the number of an S or O argument in a dative construction only through the appended coda consonant morphemes, Kiowa tends to add a consonant and change the vowel. Patterns in vowels can also be found indicating the number of the O argument in a transitive construction, although these largely follow from the reconstructions we shall see in section 19.2 and are different from what we find in the dative constructions. We must consider these patterns to be either a conservative feature we can reconstruct to Proto-Kiowa-Tanoan or we can consider them to be innovations specific to Kiowa. Considering the reconstruction as we have been building it so far, I suggest they are innovations.

As a reminder we find the singular to be unmarked (i.e. no particular vowel pattern), the dual form has /e/, the plural form regularly has /(i)a/, and the inverse is regularly marked by /ɔ/. These number-marking vowels are only absent from the $X\rightarrow 3D$ and $X\rightarrow 3P$ proclitics, which consistently have the vowel /e/ and are otherwise anomalous$^{28}$. The non-singular number forms (i.e. correlating with these vowel patterns)

$^{28}$ These are the proclitics mentioned in chapter 0 which have an initial bilabial not usually found in third person forms: $\text{mē}= S\rightarrow 3D$, $\text{mēn}= NS\rightarrow 3D$, $\text{bē}= S\rightarrow 3P$, $\text{bēt}= NS\rightarrow 3P$. 1075
are always accompanied by a reflex of the non-singular number increment -d= with two exceptions: \( I >> 2S \) g\( \bar{s} \)= and \( I >> 3S \) g\( \bar{s} \)=. This number-marking coda may be the key to understanding the vowel alternations. Recall from section 19.1.1.4 that the three number-marking codas that were reconstructed for Proto-Kiowa-Tanoan, \(*-D= plural, *-d= or *-n= dual, and *-m= inverse, may have all neutralized to -d= in Kiowa. In other words, the modern -d= increment of Kiowa found adjacent to the alternating number-marking vowel descends from up to three potentially distinct consonants. I therefore suggest that the vowel alternations of Kiowa reflect some coarticulatory effects caused by these formerly distinct coda consonants.

To sort through these developments, let us look again at some of the intransitive-dative proclitics. Table 19-33 presents all Kiowa intransitive-dative forms except the irregular third person non-singular D arguments in the four different numbers of the nondative S argument. I also give the functionally correspondent reconstructed PKT form of the proclitics beneath the bolded Kiowa forms (cf. section 19.2 below).

Table 19-33: Kiowa Intransitive-Dative Proclitics

<table>
<thead>
<tr>
<th></th>
<th>1s</th>
<th>2s</th>
<th>3s</th>
<th>2d</th>
<th>2p</th>
<th>1p</th>
</tr>
</thead>
<tbody>
<tr>
<td>s</td>
<td>é</td>
<td>gyá</td>
<td>á</td>
<td>mý</td>
<td>bó</td>
<td>dô</td>
</tr>
<tr>
<td></td>
<td>*j</td>
<td>*qq</td>
<td>*q</td>
<td>*bj</td>
<td>*bi</td>
<td>*qi</td>
</tr>
<tr>
<td>D</td>
<td>né</td>
<td>nén</td>
<td>én</td>
<td>mén</td>
<td>bét</td>
<td>dét</td>
</tr>
<tr>
<td></td>
<td>*j-d</td>
<td>*qq-d</td>
<td>*q-d</td>
<td>*bj-d</td>
<td>*bi-d</td>
<td>*qi-d</td>
</tr>
<tr>
<td>P</td>
<td>yá</td>
<td>yán</td>
<td>án</td>
<td>mán</td>
<td>bát</td>
<td>gyát</td>
</tr>
</tbody>
</table>

29 I say “potentially” distinct because it is not clear whether the dual increment consisted of a different sound than the plural increment. Both seem to have been an alveolar consonant insofar as I have determined to date.
The singular D argument proclitics (on the left half of the table) seem to represent more direct reflexes of the reconstructed forms than do the non-singular proclitics to the right. The latter seem to show some other developments we will get to below. Recall from section chapter 0 that the first person singular D proclitics indexing non-singular S arguments appear to show metathesis of the coda number increment to onset position. Within the reconstructed forms we see that the first person singular has a high front nasal vowel */i/ while in the second and third person singular we have the low back nasal vowel */q/. We do know from the correspondence sets that the oral correlates of these historical low vowels, */i/ and */a/, have merged to /a/ in the proclitics in Kiowa, while nasal */i/ is usually reflected as /e/ in modern Kiowa. The fate of */q/ when not in a conditioning environment is not certain at present since its reflexes in the above proclitics (in $S>>2S$ and $S>>3S$) have become denasalized. Given the fate of */q/ in lexical stems (cf. chapter 8.4.2), we can surmise that it probably remained some kind of low vowel, although it could very well have merged with the reflexes of */i/ when it remained a nasal vowel in such unstressed environments as in the pronominal proclitics.

From these observations of the reconstructed vowels and consideration of the reconstructed forms of the coda number morphemes, we can suggest the following account. If /e/ is the regular Kiowa reflex of */i/, as seen in $S>>IS$ é=, then we can see that the form with the dual increment shows no difference in the vowel, as in $D>>IS$ né=. We have observed that oral */i/ and */a/ historically merged in many cases and are both reflected by modern Kiowa /a/, so we could speculate that their nasal correlates */i/ and
 */q/ have also sometimes merged. Thus we could expect the most direct reflex of PKT */q/ also to be /e/ in modern Kiowa in at least certain contexts. Under this reasoning, it appears that the $D>>XS$ proclitics above may contain the reflexes of the vowels least affected by phonological environment$^{30}$. If the dual consonant increment is reconstructed as *-d= then this may track since oral alveolar stops do not seem to have as strong of a coarticulatory effect in Kiowa-Tanoan as do other consonants. The plural increment as *-l= then would seem to have a lowering effect on the vowel (or would preserve the original low vowel quality), which would be phonetically feasible for a coda lateral approximant. Alternatively if we were to reconstruct the dual as a nasal stop *-n= and perhaps the plural as *-d=, then we might think the plural is preserving the original low nasal vowel (and prevent it from raising) while the nasal dual consonant would stimulate the low vowel to raise before a nasal consonant.

Whichever of the above we might decide for the dual and plural, the inverse form may receive a simple explanation under the reconstructions given. If the inverse increment was indeed a bilabial coda *-m=, then it could be reasonable to expect a lowering and backing effect (as we have already encountered with bilabials) and also rounding$^{31}$. In other words, it could very well produce a vowel such as Kiowa /ɔ/. This account is somewhat undermined by the fact that we do not find any non-singular marker -d= in either the $I>>2S$ form ɣ= or $I>>3S$ form ɣ=. However, these forms are irregular in this respect under any analysis. It may help to support this assimilation effect to note that

$^{30}$ The $S>>2S$ and $S>>3S$ proclitics must have been denasalized before the raising of the low nasal vowel since they do contain a low vowel.

$^{31}$ We did not find vowel rounding with bilabials in Kiowa earlier. However, this could be the difference between an onset bilabial (causing no rounding) and a coda bilabial (causing rounding), at least in an unstressed environment like pronominal proclitics.
seemingly very few instances of /ąm/ sequences are found in the Kiowa lexicon whereas examples of /ąm/ are much easier to come by.

The above analysis works for the singular D argument forms, but is less regular for the dual and plural forms. Given the lowering that occurs after bilabial stops wherein */i/ would be realized as /a/ and */i/ as /a/ following the modern reflexes of /b/, this would suggest that the plural dative proclitics most accurately preserve the vowel. That is, $P >> 3D$ is mą́n= and $P >> 3P$ is bát= with the regularly expected vowels. The singular D proclitics that correspond to these, however, show unexpected vowels: m̨̬̂ = $S >> 2D$ and b̨̧ = $S >> 2P$ instead of the expected *mą́= and *bá= respectively. Indeed, we find the vowel /ɔ/ in the $S >> INS$ as well, d̨̧ =. The only other proclitic in which we find the vowel /ɔ/ outside of its inverse marking is in the transitive-dative $X > S > 2S$ form g̨̧= and the related transitive $X > 2S$ proclitic g̨̧=, which are used whenever the A argument is anything but first person singular. In other words it is third person singular or any non-singular A argument. These facts suggest two possibilities. First, it appears that the vowel /ɔ/ may have been reanalyzed as a non-singular marker outside the non-dative arguments, generalized to mark (animate) non-singular A and D arguments at least some of the times. Second, if this kind of reanalysis has taken place, then it is possible that the vowel patterns associated with the number of the non-dative argument have also been generalized by reanalysis. That is, even if the number-marking vowels have origins

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32 The initial /d/ in this proclitic is also unexplained. It may derive from the historical first person non-singular */q/ by dental-velar switch (and the voicing that the proclitic stops have undergone in Kiowa). However, because we do not encounter a velar /g/ when before the vowel /ɔ/ (which does not affect velar or alveolar articulations), this would suggest that */q/ became /d/ before a mid front vowel by assimilation, but ended up being reanalyzed as an alveolar stop even when it stood before a low vowel. This would support the contention that the dual form (with the reflex /e/) shows the most basic reflex of the vowel, since we would expect the alveolar articulation in that environment. However, it is also possible that this intransitive-dative first person plural proclitic simply originates from elsewhere.
phonologically motivated by the coda consonant, the association between vowel and grammatical number may have been recognized by speakers and spread to other forms even when not phonologically predicted. If this is the case, then it becomes difficult to determine with certainty the developmental path of individual proclitics or of the evolution of the vowel patterns: any purported original phonological motivation suggested by a small number of forms can be mitigated by the productivity of the pattern.

The number-marking vowel patterns of Kiowa do provide an interesting testing ground for the reconstruction of vowels and coda consonants presented above. If the patterns are a language-internal innovation, then they had to have come from somewhere. Even if their full modern distribution is due to analogical change, it is likely that their origins lie in the phonology, pending some claim of a grammatical origin in Proto-Kiowa-Tanoan. More Kiowa-internal research is definitely called for, but I think the above proposal is worth considering in comparative-historical perspective.

19.1.2.7 Vowel Length and Tone

The remaining formal issues that need to be addressed among the pronominal proclitics are vowel length and tone. However, as with the lexical correspondences that we saw in Part II, these topics will have to await future study before they can be reliably reconstructed for Proto-Kiowa-Tanoan. In particular we require more suprasegmental data for the Tiwa branch regarding both tone and vowel lengthening.

We can make some observations of these features in the pronominal proclitics, however. Vowel length has a limited presence in the pronominals in Kiowa and Tewa, of course no presence in Tiwa (where vowel length is not thought to be phonemic), and only
a single long vowel is claimed to be found among the Towa proclitics. More specifically in Kiowa, the only long vowels are found in those transitive-dative proclitics that index a second or third person non-singular A argument and first or third person singular D argument. This series seems to be a branch-internal innovation within Kiowa, however, derived from transitive and intransitive-dative proclitics with short vowels. In Tewa there are many more proclitics with vowel length, but the only ones we can reasonably reconstruct to Proto-Tewa are /oˑ/ /qˑ/, and /eˑ ~ iˑ/ in the 3>3s proclitic ȯˑ, the s>3p proclitic dóˑ of Arizona Tewa, the 2s>3s form nũˑ, and the plural A and plural O/D argument proclitics of the transitive and transitive-dative series. This distribution of proclitics suggests that vowel length should not be reconstructed to the Proto-Kiowa-Tanoan proclitics. Only if Tewa was the first language to separate from the family might we want to consider the vowel length in that branch as a conservative feature. However, despite this late purported late derivation of vowel length, it is not yet clear where the long vowels of Tewa came from.

Tone may be the easier feature to investigate (and indeed, may contribute to the source of vowel length in Tewa33). However, with tone we have not only the problem of lacking data on Picuris and Southern Tiwa and having only questionable data on Taos Tiwa, but we also see the absence of tone in the Towa proclitics. The Towa proclitics uniformly bear low tone (or perhaps better, are unspecified for tone), but this is probably due to the word-initial accent of phonological words in Towa and the tendency for the proclitics to be attached to the end of the phonological word to their left. This does mean, though, that we only have reliable data on tone in Kiowa and Tewa. Once the Taos Tiwa

33 Note that all of the long vowels that occur in the Tewa proclitics bear high or falling tone.
data can be double-checked, this may be enough to come up with a reasonable
reconstruction of tone even lacking tone information from the other languages. For now,
however, I leave the matter aside.

19.2 Pronominal Proclitic Reconstruction

Having run through the arguments to determine which proclitic forms across the
languages should even be considered cognates in chapters 0-0, and having analyzed the
sound correspondences to reconstruct the individual consonants and vowels involved in
section 19.1, we are now in a position to propose forms and paradigms for the Proto-
Kiowa-Tanoan pronominal indexation proclitics.

19.2.1 *PKT Intransitive Paradigm

Based on the modern pronominal proclitic forms given in Table 19-34, I propose
to reconstruct the Proto-Kiowa-Tanoan intransitive paradigm with the forms given in the
rightmost column, replacing the adjacent schematic forms developed in the preceding
chapters.

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
<th>*CV</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>a</td>
<td>o</td>
<td>o</td>
<td>ɔ</td>
<td>i</td>
<td></td>
<td>*V</td>
<td>*i</td>
<td></td>
</tr>
<tr>
<td>2S</td>
<td>a</td>
<td>ó</td>
<td>ó</td>
<td>(ʔ)</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>*V</td>
<td>*a</td>
</tr>
<tr>
<td>3S</td>
<td>Ø</td>
<td></td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td></td>
<td></td>
<td>*Ø</td>
<td>*Ø</td>
</tr>
<tr>
<td>1D</td>
<td>g-a</td>
<td>g-a</td>
<td>a-n</td>
<td>j-n</td>
<td>j</td>
<td></td>
<td>*V</td>
<td>*j</td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>m-a</td>
<td>b-a</td>
<td>m-a</td>
<td>m-e-n</td>
<td>m-o-l</td>
<td>*bV</td>
<td>*bį</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3D</td>
<td>ę</td>
<td>d-a</td>
<td>d-a</td>
<td>j-n</td>
<td>j-l</td>
<td>*V</td>
<td>*i</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1P</td>
<td>e</td>
<td>g-i</td>
<td>g-i</td>
<td>i</td>
<td></td>
<td></td>
<td>*V</td>
<td>*i</td>
<td></td>
</tr>
</tbody>
</table>
For the single S argument indexed within the intransitive paradigm, Proto-Kiowa-Tanoan distinguished three persons (first, second, third), three numbers in the first and second persons (singular, dual, plural), and four numbers in the third person (singular, dual, inverse, (inanimate) plural). This difference in number distinctions between speech act participants and third person is based on animacy and noun class contrasts found only in the latter. The plural of the first and second persons is equated with the inverse of the third person, both of these categories expressing animate plural.

Third person singular was not overtly indexed, following a major typological pattern. First and second person singular were both expressed by a vowel forms, high and low respectively. The first person singular is tentatively reconstructed as */i/, which would make it identical to the first person plural, but the distinctive reflexes indicate there may have been some formal property that formally kept it apart. The second person singular proclitic vowel may have been nasalized, although I do not presently reconstruct it as such. First person plural and third person inverse were expressed by homophonous vocalic forms. The second person plural was formed by adding the increment *b- to this vowel. The vowel may have already lowered following this voiced bilabial stop at the Proto-Kiowa-Tanoan stage, but this is currently uncertain. The dual proclitics were derived from the plural/inverse by nasalization of the latter. The nasalized high vowel had probably already lowered in the proto-language and may have already led to nasalization...
of the voiced bilabial stop of the second person. It is uncertain if the dual number-marking coda was also attached at this point or if that was a later analogical development in different branches. The third person inanimate plural does not appear to have been formally related to any of the other intransitive proclitics. The presence of the plural-marking coda *-D= suggests it may have been imported from the homophonous transitive 3S>3P proclitic, although it is possible the transfer went in the opposite direction. In either case the shared intransitive-transitive function of this proclitic was already established in Proto-Kiowa-Tanoan. The SPACE morpheme had probably already grammaticalized into some kind of pseudo-indexation function, although what its exact function might have been still requires further study (see discussion below).

The low vowel reflexes of the first and second person singular may have already begun to appear in Proto-Kiowa-Tanoan and may have been close enough in quality to cause ambiguity in at least some phonological contexts, or at least were poised to evolve into such a situation. This would explain why there is replacement of either the first person (Picuris and Southern Tiwa) or second person (Kiowa, Tewa, Taos Tiwa) in almost every branch of the family.

All of the languages have been fairly conservative in their non-singular forms. Tewa lost the distinctive inanimate plural, co-opting the singular to mark this function. It has also innovated distinct first and third person non-singular proclitic forms by introducing the first person non-singular velar into the intransitive and innovating an onset /d/ to mark third person non-singular.

Tewa has also had some major innovations in its expression of second person. The original intransitive second person proclitics are preserved only in the imperative
construction. These languages have introduced new unique forms into the singular and plural second person while it has extended its third person dual into the second person dual almost unilaterally across all paradigms.

Association between second and third person in the intransitive might also be found in Kiowa. The innovative third person human plural of that language appears to have been possibly derived by a special use of the second person singular here in the intransitive (and in other paradigms).

Finally, Tewa is also the one language to have overt indexation of third person singular, apparently by grammaticalization of the *SPACE morpheme nq=*. In chapter 0 we saw that this morpheme is used in Tiwa with some predicates that take complements, some that express ambient phenomena, as well as some that express some kind of cultural activities. It also occurs prefixed to many inanimate nouns, in independent use and/or when incorporated into a verb. In both Tiwa and Towa, it occurs with certain predications of temporal or spatial location, which may represent its original use. This assessment is based on the candidate morphemes I have so far found that may be the lexical source of this morpheme. One is one of the Kiowa-Tanoan copulas, *dq(n)*, whose reflexes are the general copula of Kiowa dɔ́ˑ(m) and a more restricted copula in the Tanoan languages (Tewa nq(ŋ), Towa nô, Tiwa nŋ (TA) / nq (Pt, ST)) used for assertions of time and events. The other is the noun *dq b earth, soil (Kiowa dɔ́m, Tewa nŋ, Tiwa nɔ́m (TA) / nɔ́m (Pt, ST), Towa nô), which appears in some old compounds without the coda /m/,

e.g. *nq-pi cultivated field (earth-make. INC) (Tewa nqva (RGT) / nqba (AT), Tiwa nŋpa (TA) / nŋpia (Pt) / nape (ST), Towa nŋ-pæ). These two lexical items—the copula and noun earth—may themselves be related to each other. The *SPACE morpheme dq=
may thus be a grammaticalized development of one (or both) of these lexical items. Most likely, it comes from a noun incorporation construction involving *dq b earth used to express general location. If this line of development has any validity—and indeed, if the Tewa third person singular proclitic is even related to the SPACE morpheme of Tiwa and Towa—it would suggest an interesting grammaticalization path from earth, soil to (eventually) 3S.ITR. Much more research is needed both on the synchronic use of this morpheme as well as its diachronic development.

Table 19-35 re-summarizes the proposed reconstructed intransitive paradigm of Proto-Kiowa-Tanoan in standard person-number format.

Table 19-35: *PKT Intransitive Paradigm

<table>
<thead>
<tr>
<th>1</th>
<th>*i</th>
<th>*i</th>
<th>*i</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>a</td>
<td>bi</td>
<td>bi</td>
</tr>
<tr>
<td>3</td>
<td>Ø</td>
<td>i</td>
<td>i</td>
</tr>
</tbody>
</table>

Aside from the particular issues mentioned in chapters 0 and 19.1, this is probably the most secure of the reconstructed paradigms.

19.2.2 *PKT Intransitive-Dative Paradigm

The intransitive-dative paradigm is reconstructed on the basis of the purportedly cognate forms that appear in Table 19-36. The reconstructed Proto-Kiowa-Tanoan proclitics are again given in the rightmost column next to the schematic forms proposed earlier.

---

34 There are no clear cases of the copula being incorporated as the leftmost member of a compound verb construction. Sprott analyzes an initial “nô =” on some verbs as being such verb incorporation, but such examples are probably more closely associated with the grammaticalized use of the SPACE morpheme rather than a direct incorporated use of the special copula.
Table 19-36: Reconstruction of the PKT Intransitive-Dative Proclitics

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*CV</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>1</td>
<td>(d-i-η)</td>
<td>(d-i-η)</td>
<td>넷</td>
<td>넷</td>
<td>넷</td>
<td>넷</td>
<td>*Y</td>
<td>*ŋ</td>
</tr>
<tr>
<td>2S</td>
<td>ㄱ</td>
<td>gyá</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>*qV</td>
<td>*qq</td>
</tr>
<tr>
<td>3S</td>
<td>ㅏ</td>
<td>(ó-’η)</td>
<td>(û-’orent)</td>
<td>ㅗ</td>
<td>ㅗ</td>
<td>ㅗ</td>
<td>ㅗ</td>
<td>*Y</td>
<td>*ŋ</td>
</tr>
<tr>
<td>1D</td>
<td>ㅏ</td>
<td>gæ-ŋ</td>
<td>gæ-h-gæ-ŋ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>*QV</td>
<td>*ŋ</td>
</tr>
<tr>
<td>2D</td>
<td>ㅏ</td>
<td>(m-ŋ</td>
<td>m-ŋ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>*bŋ</td>
<td>*ŋ</td>
</tr>
<tr>
<td>3D</td>
<td>ㅏ</td>
<td>d-æ-ŋ</td>
<td>d-æ-ŋ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>*Y</td>
<td>*ŋ</td>
</tr>
<tr>
<td>1P</td>
<td>ㅏ</td>
<td>(dó)</td>
<td>gi-h</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>*QV</td>
<td>*ŋ</td>
</tr>
<tr>
<td>2P</td>
<td>ㅏ</td>
<td>(bó</td>
<td>gi-h</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>ㄱ</td>
<td>*bŋ</td>
<td>*ŋ</td>
</tr>
<tr>
<td>3P/I</td>
<td>ㅏ</td>
<td>d-÷-ŋ</td>
<td>i</td>
<td>i-n</td>
<td>i-m</td>
<td>e</td>
<td>*Y</td>
<td>*ŋ</td>
<td></td>
</tr>
</tbody>
</table>

These pronominal forms index only the person and number of the dative argument.

Because such arguments are effectively always animate (and typically human), there is only the same three numbers distinguished in third person as we find in first and second person. But, while these forms in and of themselves only encode the dative argument, they are effectively always found with the number marking coda morphemes of Table 19-37, which index the number of the non-dative “S argument”. Person is not distinguished in these morphemes because they are overwhelmingly used to express third person possessed entities.

Table 19-37: Reconstruction of the PKT Number Indexation Codas

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*CV</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>*Ø</td>
<td>*Ø</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>d (~t ~n ~g</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>*d</td>
<td>*n</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>d (~t ~n ~g</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>Ø</td>
<td>*m</td>
<td>*m</td>
<td></td>
</tr>
</tbody>
</table>
The forms of these bound markers were effectively already reconstructed in the discussions of chapters 14.5 and 19.1.1.4 (and 19.1.2.6) simply in trying to determine what the relevant cognates might be. The problems surrounding the reconstruction of these morphemes were addressed in those earlier sections.

Looking to the dative morphemes, we can see that the reconstructed proclitics indexing non-singular persons are identical to those found in the intransitive paradigm except for the initial *q- found in the first person non-singular proclitics here. It was suggested in chapters 16.1.2 and 19.1.1.3 that this velar either overtly marked an inanimate argument historically, which would be the prototypical S argument in a dative construction, or represents a more archaic form of the first person non-singular indexation which is only preserved when the non-primary argument is prototypically inanimate, such as here in the intransitive-dative and in the transitive 1NS>3P proclitics. Whenever the non-primary argument was more likely to be animate, we find the first person non-singular merged with the third person non-singular, an inherently animate category in Kiowa-Tanoan. I find the latter scenario to be the more likely of these two possibilities, but of course there may be another explanation I am not currently considering.

The singular dative proclitics are distinct from the intransitive singular forms, but do appear to be derived from them. The first person singular dative proclitic is reconstructed to be the same as the intransitive first person singular, but is nasalized. Like the first person singular intransitive form, there are anomalies in the reconstruction as a
high front vowel, addressed in section 19.1.2.4. The dative second person singular is the nasalized equivalent of its intransitive counterpart, but also has an initial velar *q- affixed. Whether this velar is the same as that seen in the first person non-singular forms is presently unclear. The third person singular dative proclitic of course cannot be based on the null form of the intransitive. The nasalized vowel may thus be some kind of “peg” element, to borrow a term from Athabaskan studies, just to distinguish dative usage from intransitive\(^{35}\). However, I find it interesting that this nasalized vowel of the third person singular dative is identical to the second person singular, but lacks the velar. That is, the third person singular dative could be a direct derivation from the second person singular intransitive. This may thus be an early antecedent to the second singular-to-third person shift we (possibly) find in Tewa and Kiowa.

As was noted, these dative proclitics would effectively always be occurring with the number-marking coda morphemes shown above. While this means the dative forms would occur in an unmarked form whenever they occurred with a singular/basic-number S argument referent, they would otherwise often be realized with an overt coda consonant to index the number. The reconstructed forms of the dative proclitics with the number-marking codas are given in Table 19-38.

Table 19-38: *PKT Intransitive-Dative with Number Markers

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>I</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>*i</td>
<td>*id</td>
<td>*im</td>
<td>*iD</td>
</tr>
<tr>
<td>2S</td>
<td>*q</td>
<td>*qad</td>
<td>*qam</td>
<td>*qad</td>
</tr>
<tr>
<td>3S</td>
<td>*q</td>
<td>*qad</td>
<td>*qam</td>
<td>*qam</td>
</tr>
<tr>
<td>1D</td>
<td>*qi</td>
<td>*qid</td>
<td>*qim</td>
<td>*qim</td>
</tr>
<tr>
<td>2D</td>
<td>*bi</td>
<td>*bid</td>
<td>*bim</td>
<td>*bim</td>
</tr>
</tbody>
</table>

\(^{35}\) The term “peg” suggests it might be some kind of neutral epenthetic vowel that does not in its origin carry any meaning. However, I would find it more likely that whatever the original source of the third person dative proclitic, it was some kind of meaningful unit.
It is probable that the majority of the comparative irregularity between the modern languages and the complexity of their synchronic paradigms is the direct result of phonological developments following from these variable closed syllable forms. The number marking vowels of Kiowa were already analyzed in section 19.1.2.6 as having a possible origin in these distinctive codas. The loss of a distinctive dual category in Tiwa and the formal neutralization of the dual marker with other number markers in Towa also seems to have had some far reaching effects in proclitic forms in those languages, which has been touched upon in the preceding sections.

Tewa perhaps shows the greatest divergence in its intransitive-dative paradigm, the individual proclitic forms often not seeming to be at all directly cognate with the proclitics of the other languages. This too may be explicable from the number marked forms in Table 19-38 above. As the distinction between coda consonants was lost and the retained forms were neutralized to /ŋ/, the number-marking function was also lost. However, the common occurrence of /ŋ/ in dative constructions and the original derivational source of the dative in the intransitive paradigm seem to have been recognized and reanalyzed. Thus, new intransitive-dative forms appear to have been innovated by appending the dative-marking coda -ŋ= to other pronominal forms. Usually those base forms were intransitive, but in some instances (e.g. the first person singular) the source seems to have been the transitive, or perhaps more directly, the transitive-dative (itself based on the transitive). Again in the intransitive-dative paradigm, Tewa
seems to show an interesting displacement or deletion of its original second person proclitics.

19.2.3 *PKT Transitive Paradigm

The transitive paradigm is the largest of the relatively “stable” set of pronominal proclitics. For all of the complexity that we might find in the modern languages, however, (especially in comparative perspective!) it does seem like the Proto-Kiowa-Tanoan paradigm can be reconstructed as a fairly regular system.

19.2.3.1 *PKT Reconstructed X>3s Paradigm

Table 19-39 presents the reconstruction of those proclitics indexing a singular third person O argument. These can be viewed as the least marked transitive forms.
What is particularly striking in this reconstruction—but not as apparent in the modern languages—is how similar the proclitic forms are to the intransitive and intransitive-dative paradigms (especially the former). The non-singular person forms are reconstructed to be exactly the same as those of the intransitive, as are the second person singular and third person singular. That is, insofar as singular number tends to be unmarked in Kiowa-Tanoan, these transitive proclitics could be viewed compositionally as \text{ITR+Ø}, where the null marker represents the third person singular O argument (cf. intransitive 3S and transitive 3S>3S). This is not to make some theoretical claim about null morphemes, but sets up something of a contrast which we shall see in the rest of the transitive paradigm. The one exception to this pattern is the first person singular form, which might seem completely different than the intransitive first person singular form. However, it was already suggested in section 19.1.2 that there may have been phonological merger of the high front vowel */i/* and low vowel */a/* in some contexts. Thus, this transitive form may actually be somehow composed of an element */t- added to the intransitive first person singular proclitic */i= (plus the null marking for the third person singular O argument), the relationship masked by later vowel changes.

Such active compositionality as described above must be reconstructed to a Pre-Proto-Kiowa-Tanoan stage, however, and we can see that any original internal
constituency of the proclitics has not prevented the different daughter languages from undertaking their own innovative paths of development. The Tiwa languages, for instance, appear to have lost their original $1S>3S$ proclitics and seem to have replaced them with the $ti=$ form which originally marked $1S>3I$. They have also regularized the dual marker (which would have originally indexed only non-primary arguments) to mark dual A arguments. Towa seems to have been conservative, but has (re)introduced the initial consonant, the reflex of $*q-$, into its first person non-singular proclitics. Kiowa has also been highly conservative here, but again seems to have developed an innovative use of the second person singular proclitic to represent a third person human plural A argument.

Tewa again shows the greatest divergence from the others. Whenever there is a non-singular A argument, the number of a third person O argument is never indexed. Because of the functional, if not also formal, merger of the different numbered O argument pronominals, the modern Tewa forms may not actually represent originally $X>3S$ proclitics. Again Tewa shows persistent innovations with second person arguments, making those proclitics non-cognate with the equivalent forms in the other languages, while it has also innovated a new set of third person O argument proclitics from the lost second person forms. Thus, Tewa has one series of third person proclitics that index the number of, and seem to give topical status to, a third person O argument, such as the $6=\cdot$ form given above. Such forms do not specify the number of the third person A argument. Meanwhile, Tewa also maintains a set of proclitics that index the number of the third person A argument while leaving the O argument’s number unspecified. Interestingly,

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36 Or, assuming Towa represents one of the early departures from the family, it may show the conservative distribution of the $*q-$.
Rio Grande Tewa has used its inverse O argument form for its 3s>3 function. All of this amounts to only the 1s>3s form in the above paradigm actually being conservative.

19.2.3.2 *PKT Reconstructed X>3p Paradigm

The reconstruction of the inanimate plural O argument proclitics is given in Table 19-40.

Table 19-40: Reconstruction of the PKT X>3p Proclitics

<table>
<thead>
<tr>
<th></th>
<th>K1</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pi</th>
<th>ST</th>
<th>To</th>
<th>*CV</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1s</td>
<td>gya-t</td>
<td></td>
<td>ta</td>
<td>te</td>
<td>ti-l</td>
<td></td>
<td>*TV-D</td>
<td>*ti-D</td>
<td></td>
</tr>
<tr>
<td>2s</td>
<td>gyá</td>
<td>ku</td>
<td>ko</td>
<td>ku</td>
<td>ki-l</td>
<td></td>
<td>*QV-D</td>
<td>*qi-D</td>
<td></td>
</tr>
<tr>
<td>3s</td>
<td>g-(y)a</td>
<td>u</td>
<td>o</td>
<td>u</td>
<td>i-l</td>
<td></td>
<td>*V-D</td>
<td>*i-D</td>
<td></td>
</tr>
<tr>
<td>1d</td>
<td></td>
<td>k-w-n</td>
<td>k-a-m</td>
<td>k-i-n</td>
<td>s-o-l</td>
<td></td>
<td>*QV-D</td>
<td>*q-i-D</td>
<td></td>
</tr>
<tr>
<td>2d</td>
<td>má-n</td>
<td>m-a-n</td>
<td>m-a-m</td>
<td>m-i-n</td>
<td>m-o-l</td>
<td>*bV-D</td>
<td>*b-i-D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3d</td>
<td>ñn</td>
<td>ñ-n</td>
<td>a-m</td>
<td>i-n</td>
<td>i-l</td>
<td></td>
<td>*V-D</td>
<td>*i-D</td>
<td></td>
</tr>
<tr>
<td>1p</td>
<td></td>
<td>ki-w</td>
<td>ku</td>
<td>ki-w</td>
<td>s-e-l</td>
<td></td>
<td>*QV-D</td>
<td>*q-i-D</td>
<td></td>
</tr>
<tr>
<td>2p</td>
<td>bá-t</td>
<td>m-ñ-w</td>
<td>m-ñ</td>
<td>m-ñw</td>
<td>b-a-l</td>
<td>*bV-D</td>
<td>*b-i-D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3p/i</td>
<td>é-t</td>
<td>i-w</td>
<td>u</td>
<td>i-w</td>
<td>e-l</td>
<td></td>
<td>*V-D</td>
<td>*i-D</td>
<td></td>
</tr>
</tbody>
</table>

What we find here following my reconstruction analysis is that the plural marking coda increment *-D= has been regularly added to pronominal forms much like those that we found in the X>3s paradigm. Indeed the non-singular persons are exactly the same except for the presence of *q- in the first person non-singular proclitics. In the singular, if we were to remove the nasalization from the intransitive-dative proclitics and consider a possible relationship between the vowels */i/ and */a/, we could have a compositional derivation of the pronominal forms. The first person singular would be composed of the *t- found in all first person singular A argument proclitics (when the second argument is third person, at least) plus the intransitive 1s form *i= whose vowel quality (in its quirky reflexes) is preserved here, plus the plural marker *-D=. In the second person singular we
would have the same *q- seen in the intransitive-dative plus the intransitive 2s *a= which is here in a fronted variant before the coda plural marker *-D= (again assuming some relationship between */i/ and */a/). Under the present analysis of the third person singular form, it appears that we can relate the vowel to that seen in the intransitive-dative (*q=), which was suggested to possibly originate from the second person singular *a=, which was here again fronted to *i= before the plural marker *-D=.

Neutralization of the codas in particular has obscured the etymology of this paradigm in the modern languages, although actually it is one of the more regular series. Most notably in the Tiwa languages the plural marker -w= is only immediately identifiable in the plural persons. Of course, the above reconstruction is highly contingent upon the cognate status of the Tiwa and Kiowa-Towa(-Tewa) plural number-marking morphemes, the uncertainty of which has already been well discussed.

19.2.3.3 *PKT Reconstructed X>3I Paradigm

The inverse number O argument pronominal series perhaps shows the most interesting developments between the reconstructed forms and their reflexes in the modern languages. That fact undoubtedly follows from the interesting and unique semantics of this number category (which, recall, indexes animate plurals and some inanimate singulars). The rightmost column in Table 19-41 presents the present reconstruction of the X>3I pronominal proclitics of Proto-Kiowa-Tanoan.

Table 19-41: Reconstruction of the PKT Transitive X>3I Proclitics

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>TO</th>
<th>*CV</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>dé /</td>
<td>dé</td>
<td>déh</td>
<td>ti</td>
<td>ti</td>
<td>ti</td>
<td>te</td>
<td>*TV</td>
<td>*ti</td>
</tr>
</tbody>
</table>

37 Note that this analysis does suggest that the homophones intransitive 3P proclitic mentioned in 19.2.1 comes from this transitive proclitic rather than vice-versa.
In the proposed reconstruction we find clear compositionality in the plural persons: the forms seen in the intransitive are appended with a morpheme *-pi= to mark the inverse argument. By analogy with the inanimate plural paradigm above, we might expect the same inverse marker *-m= as we find in the dative series, but instead we find this syllabic form. It may or may not be a coincidence that both inverse markers have an initial bilabial. Even though they were distinct at the time that Proto-Kiowa-Tanoan began breaking up, internal to the ancestral language these morphemes could be related\(^3^8\).

A compositional analysis of the singular pronominals is only partly apparent at first glance. Sure we have a vowel-initial form in the second person singular and a *t-
initial form in the first person singular, but then the third person singular seems to be homophonous with the second person. We do not find the same correspondences that we can relate to the \(*i= 1s\) and \(*a= 2s\) of the intransitive. However, we do find that the vowel that occurs with these singular A proclitics is \(*/i/\), the same vowel as marks inverse/animate plural number in the proclitics. Consider too the common ways in which languages tend to resolve two adjacent vowels\(^{39}\) and it is not unfeasible to propose the compositions \(*t-i-i= 1s>3i\), \(*a-i 2s>3i\), and \(*\emptyset-i= 3s>3i\), those last two winding up homophonous quite by an accident of morphophonology. This may help to explain why we only find the \(*-pi=\) in the non-singular A argument proclitics: they already contain the inverse-marking vowel \(*/i/\), so a hypothetical composition such as \(*\emptyset-i=\) for \(1p>3i\) would come out to \(*\emptyset-i=\), homophonous with the \(1p>3s\) proclitic. Thus the \(*-pi=\), whatever its original meaning, may have been a solution to deriving a discrete form in some ancestor to final-stage Proto-Kiowa-Tanoan, i.e. \(*i-p(-)i= 1p>3i\).

From the proto-language to the modern languages, however, we have some innovation in the proclitics. Tewa has of course lost such an inverse series, but appears to have kept many of the forms: the first and third person singular are found in the reflexive while the (second/)third person singular is also used in Rio Grande Tewa for transitive \(3s>3\) function (used primarily with inanimate O arguments)\(^{40}\). Kiowa has been fairly conservative in this paradigm except for lacking an obvious reflex of \(*-pi=\). Also, both Kiowa and Tewa (in the reflexive paradigm) seem to have innovated a second person

\(^{39}\) Insert a consonant (at least \([ʔ]?\)) or hiatus, elide one or the other of the vowels (or, fuse the vowels into a vowel that is identical to one or the other of the input vowels), or fuse the vowels into a new vowel distinct from either of the input forms.

\(^{40}\) The \(Xns>3\) forms are ambiguous under analysis to date as to whether they reflect more \(Xns>3s\) or \(Xns>3i\) origins (or come from elsewhere or from a mix of both).
singular form \( \text{bé} = (\text{Ki}) / \text{bi} = (\text{Te}) \) (preserved in Tewa in the reflexive paradigm). Towa, Taos Tiwa, and Southern Tiwa have all been quite conservative, but Picuris Tiwa has expanded its use of the inverse increment \( *-\text{pi} = \) by getting rid of the proclitic to which it was attached.

All three Tiwa languages show an innovation where they have shifted the function of their \( 1s > 3t \) form to instead index a singular O argument while they have moved a reflex of the inverse marker \( *-\text{pi} = \) to fill the vacated \( 1s > 3t \) slot. Whether or not this has had any implications on the assignment of nouns to different classes has yet to be determined. It is the only inverse proclitic that seems to have made the shift, but given how frequently first person singular is used, it may represent a more profound difference between Tiwa and the other Kiowa-Tanoan languages.

19.2.3.4 *PKT Reconstructed \( X>3d \) Paradigm

The dual O argument proclitics of Proto-Kiowa-Tanoan could only be tentatively reconstructed due to limited data: only two branches even index dual O arguments adequately. Table 19-42 shows the reconstructed proclitics and the Kiowa and Towa forms on which they are based.

Table 19-42: Reconstruction of the PKT Transitive \( X>3d \) Proclitics

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*CV</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1s</td>
<td>ně-n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ti-l</td>
<td>*Ty-d</td>
<td>*ti-d</td>
</tr>
<tr>
<td>2s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>į-l</td>
<td>*Y-d</td>
<td>*į-d</td>
</tr>
<tr>
<td>3s</td>
<td>ę</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>į-l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1d</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>s-q-pa</td>
<td>*Y-d /</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*Y-pV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2d</td>
<td>mé-n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>mq-pa</td>
<td>*bY-d /</td>
<td>*bį-d /</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*bY-pV</td>
<td>*bį-pi</td>
<td></td>
</tr>
<tr>
<td>3d</td>
<td>ė-n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>q-pa</td>
<td>*Y-d /</td>
<td>*į-d /</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*Y-pV</td>
<td>*į-pi</td>
<td></td>
</tr>
</tbody>
</table>
With a non-singular A argument, it is not clear whether the dual marking coda increment was added or if some reflex of the inverse element *-pi= was affixed. Similarly in the singular, the proclitics either bore the dual increment or they were only distinguished from other proclitics by the vowel.

In terms of composition, we seem to have the same situation as in the inverse: some dual marker (one of the two indicated) was simply added to the non-singular intransitive proclitics, while in the singular we probably have the compositions **t-į(-d)= 1S>3D, **i-į(-d)= 2S>3D, and **O-į(-d)= 3S>3D, with the latter two resulting in homophonous forms.

The only major innovation to be noted with the dual transitive paradigm is its loss by the Tiwa and Tewa branches. Tewa still marks dual O arguments when the A argument is singular, but uses innovative forms based on a reflex of the inverse increment *-pi= attached to singular A argument clitics.

19.2.3.5 *PKT Reconstructed X>SAP Paradigm

Lastly in the transitive paradigm, we have those proclitics that index a speech act participant as the O argument, reconstructed in Table 19-43.

Table 19-43: Reconstruction of the PKT Transitive X>SAP Proclitics

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>Pt</th>
<th>ST</th>
<th>To</th>
<th>*CV</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&gt;1S</td>
<td>mây</td>
<td>may</td>
<td>bey</td>
<td>bæ</td>
<td></td>
<td></td>
<td></td>
<td><em>bV</em></td>
<td>*big</td>
</tr>
<tr>
<td>2&gt;INS</td>
<td>ku</td>
<td></td>
<td>ku</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(*qV)</td>
<td>*qu</td>
</tr>
</tbody>
</table>
As noted in chapter 18.1, there was simply no basis for reconstructing any proclitics that indexed a third person A argument affecting a first or second person O argument. In chapter 0 I argue that some passive construction was obligatorily used for such configurations, as is still the case in Tiwa and Towa and which has some reflexes in Tewa and Kiowa.

In the above reconstructed forms, the $I>$2D and $I>$2P are identical to the reconstructed 2D and 2P proclitics of the intransitive paradigm, although it is with only little formal support. The $2>$1NS proclitic is supported only by data from the Tiwa languages and is questionable in reconstruction to Proto-Kiowa-Tanoan. The $2>$1S and $I>$2S proclitics are both unique to this paradigm in reconstruction. It is not unusual for proclitics indexing such configurations to be unique within an indexation paradigm (cf. Gildea 1998, 2002), which suggests they are probably among the earliest to grammaticalized as indexation markers. This is reflected in their lack of apparent compositionality. The $2>$1S form could hypothetically be broken down as **b-i-gʲ/i=**, where the */b/* is the second person (non-singular) increment, the */i/* could be the first person singular morpheme, while the coda */gʲ/* is unaccounted for. The nasal vowel that encodes $I>$2S is not so easily analyzed. One could imagine something like **i-a-gʲ/i=**, where the high vowel feature of the reconstructed form descends from the same element.
that gives us the glide in the previous form. This does not account for the nasalization, however\textsuperscript{41}.

In this series we have Tewa and Kiowa showing the most innovations. Not only does Tewa have only a single questionable reflex of the Proto-Kiowa-Tanoan proclitics reconstructed, but both of these branches have proclitics to index a third person A argument, although the forms they have do not appear to be cognate. The Tiwa languages and Towa are conservative here, except for when the O argument is second person non-singular.

19.2.3.6 Summary of the Full *PKT Transitive Paradigm

Having run through the different subsections of the transitive paradigm, Table 19-44 lays out the transitive proclitics fully assembled.

Table 19-44: *PKT Transitive Paradigm (FULL)

<table>
<thead>
<tr>
<th>A ↓</th>
<th>3S</th>
<th>3D</th>
<th>3I</th>
<th>3P</th>
<th>1</th>
<th>1NS</th>
<th>2S</th>
<th>2D</th>
<th>2P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>*t\textacuted{a}</td>
<td>*tiD</td>
<td>*ti</td>
<td>*tiD</td>
<td>1S</td>
<td>RFL</td>
<td>*i</td>
<td>*bi</td>
<td>*bi</td>
</tr>
<tr>
<td>2S</td>
<td>*a</td>
<td>*i</td>
<td>*qiD</td>
<td>*qiD</td>
<td>1D</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3S</td>
<td>*Ø</td>
<td>*iD</td>
<td>*iD</td>
<td>1P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1D</td>
<td>*i</td>
<td>*iD</td>
<td>*qiD</td>
<td>*qiD</td>
<td>2S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>*bi</td>
<td>*bi</td>
<td>*bi</td>
<td>*biD</td>
<td>2D</td>
<td>*bi</td>
<td>(*\textacuted{ku})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3D</td>
<td>*i</td>
<td>*iD</td>
<td>*iD</td>
<td>2P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1P</td>
<td>*i</td>
<td>*iD</td>
<td>*qiD</td>
<td>*qiD</td>
<td>3S</td>
<td>RFL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2P</td>
<td>*bi</td>
<td>*bi</td>
<td>*bi</td>
<td>*biD</td>
<td>3D</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3P/t</td>
<td>*i</td>
<td>*iD</td>
<td>*iD</td>
<td>3P/t</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{41} Unless we reconstruct the second person singular vowel as nasal, in which case we would then have to account for the lack of nasalization in other composed forms.
The reflexes and larger implication of the passive construction and the proposed composition of the pronominal proclitics will be taken up in chapter 0.

**19.2.4 *PKT Reflexive Paradigm***

The reflexive paradigm is only tenuously reconstructed, as described in chapter 0. While it is clearly ultimately derived from the transitive paradigm, the different branches of the family have made different innovations that obfuscate which part of the transitive paradigm might have been used to express reflexive-reciprocal function. Because Tewa and Tiwa have unique reflexive paradigms (while Kiowa and Towa use modern recognizable sets of their transitive series for reflexive function), I have interpreted these branches to be the most conservative, at least in parts of their reflexive paradigms. Based on this I tentatively concluded that it was the $X>3s$ part of the transitive paradigm which originally was used for the reflexive, but with some persons taking an overt reflexive morpheme. The reconstructed Proto-Kiowa-Tanoan forms under this analysis are given in the right column of Table 19-45.

Table 19-45: Reconstruction of the PKT Reflexive Proclitics (*TENTATIVE*)

<table>
<thead>
<tr>
<th>Kl</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>P1</th>
<th>ST</th>
<th>To</th>
<th>*CV</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td>do-ŋ</td>
<td>tɔ</td>
<td>ta</td>
<td>te</td>
<td>*TV</td>
<td>*ta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2S</td>
<td>ɔ</td>
<td>a</td>
<td>a</td>
<td>*Ø-bV</td>
<td>*bį</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3S</td>
<td>mɔ</td>
<td>mą</td>
<td>be</td>
<td>*QV</td>
<td>*qį</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1D</td>
<td>æ-ŋ</td>
<td>q-ŋ</td>
<td>kɔ́-n</td>
<td>ką-m</td>
<td>kį-n</td>
<td>*bV</td>
<td>*bį</td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>mɔ́-ŋ</td>
<td>mą-m</td>
<td>mę-n</td>
<td>*QV-bV</td>
<td>*qį-bį</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3D</td>
<td>d-æ-ŋ</td>
<td>d-q-ŋ</td>
<td>ŋ-ŋ</td>
<td>j-n</td>
<td>*QV-bV</td>
<td>*qį-bį</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1P</td>
<td>í-ví</td>
<td>í-bí</td>
<td>ki-mą</td>
<td>ki-mą</td>
<td>ki-be</td>
<td>*QV-bV</td>
<td>*qį-bį</td>
<td></td>
</tr>
<tr>
<td>2P</td>
<td>ú-ví</td>
<td>ó-bí</td>
<td>mɔ́-mą</td>
<td>mį-mą</td>
<td>be-be</td>
<td>*bV-bV</td>
<td>*bi-bį</td>
<td></td>
</tr>
<tr>
<td>3P/I</td>
<td>d-i-ví</td>
<td>d-i-bí</td>
<td>i-mą</td>
<td>i-mą</td>
<td>i-be</td>
<td>*V-bV</td>
<td>*i-bį</td>
<td></td>
</tr>
</tbody>
</table>
The plural persons and the third person singular seem to have been the forms that bore the overt reflexive morpheme *bi=. This morpheme probably originates as an incorporated noun, which is why it was argued to induce third person singular indexation. The presence of the *q- in the first person non-singular was addressed in chapter 16.1.2 where it was suggested it might represent a conservative transitive 1NS>3S form. The dual proclitics seem to be, at least potentially, the same as the transitive, intransitive, and intransitive-dative dual forms. The first and second person singular forms may have been exactly identical to the transitive Xs>3S proclitics or they may have been identical to the transitive-dative Xs>S>3S forms via the dative-reflexive construction described in chapter 0.

It must be reemphasized that this reconstruction of the reflexive is highly suspect. While the Tewa non-singular reflexive proclitics show features in common with Tiwa, the singular proclitics are more akin—indeed are almost directly cognate with—the forms we see in Kiowa, suggesting an origin in the transitive Xs>3I paradigm. Indeed, even if the proclitics that bear the reflexive marker *bi= are themselves based on singular O argument transitive forms, there is no reason not to think that the transitive non-singular association with the reflexive that we find in Kiowa, Towa, and somewhat in Tewa might reflect the pattern of Proto-Kiowa-Tanoan. That is, it might ultimately end up being necessary to reconstruct the Proto-Kiowa-Tanoan proclitics with a mixed origin from the transitive paradigm.

Table 19-46 summarizes the current reconstruction of the reflexive paradigm in person-number format.
Table 19-46: *PKT Reflexive Paradigm

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>D</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>*ta</td>
<td>*qi</td>
<td>*qi-bi</td>
</tr>
<tr>
<td>2</td>
<td>*a</td>
<td>*bi</td>
<td>*bi-bi</td>
</tr>
<tr>
<td>3</td>
<td>*bi</td>
<td>*i</td>
<td>*i-bi</td>
</tr>
</tbody>
</table>

19.2.5 *PKT Transitive-Dative Paradigm

Finally Table 19-47 presents the reconstructed forms of the transitive-dative paradigm that index a third person singular D argument. Remember that as a dative paradigm, these proclitics are always accompanied by one of the number-marking coda consonants shown in section 19.2.2.

Table 19-47: Reconstruction of the PKT Transitive-Dative $X>X>3S$ Proclitics

<table>
<thead>
<tr>
<th></th>
<th>KI</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>ST</th>
<th>To</th>
<th>*CV</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S</td>
<td></td>
<td>(dó-ŋ)</td>
<td>tŋ</td>
<td>ta</td>
<td>tŋ</td>
<td></td>
<td>*TY</td>
<td>*tq</td>
</tr>
<tr>
<td>2S</td>
<td>á</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*Y</td>
<td>*q</td>
</tr>
<tr>
<td>3S</td>
<td></td>
<td>(ó-ŋ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*Y</td>
<td>*j</td>
</tr>
<tr>
<td>1D</td>
<td></td>
<td>(áe-ŋ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*bY</td>
<td>*bi</td>
</tr>
<tr>
<td>2D</td>
<td>må</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*Y</td>
<td>*j</td>
</tr>
<tr>
<td>3D</td>
<td>ŵ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*Y</td>
<td>*j</td>
</tr>
<tr>
<td>1P</td>
<td></td>
<td>(ê)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*Y</td>
<td>*j</td>
</tr>
</tbody>
</table>

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We find in the reconstructed paradigm that the non-singular A argument proclitics are the same as their $X_{NS} > 3S$ transitive counterparts, and thus are also the same as the intransitive forms. In the singular we find that the first and second person singular are the same as the transitive $X_S > 3S$ proclitics, but with nasalization added. The third person singular is the same as the second person singular and the same as the $X >> 3S$ form of the intransitive-dative paradigm. Thus, these proclitics seem to be derived straight from the transitive with the dative nasalization derivation applied only in the singular (as we found in the intransitive-dative). The third person singular form may ultimately derive from a second person singular proclitic or it may represent the same "peg" as was discussed in section 19.2.2.

The rest of the transitive-dative paradigm indexing a non-singular (dual or inverse) third person D argument seems to be reconstructed to be entirely identical to the transitive paradigm. The only difference is that the transitive-dative forms combine with the number-marking codas to index the number of the O argument. When the D argument is dual, there is the question of whether the dual coda consonant (if it is present in the paradigm at all) remains before the O argument number marking is added or is replaced by that number marking. The modern languages seem to have resolved this issue in different ways, depending on how they developed both the dual morpheme and the number morphemes.
The one other part of the transitive-dative paradigm that may have contained unique forms consists of those proclitics that index a speech act participant as the D argument. These reconstructed forms appear in Table 19-48.

Table 19-48: Reconstruction of the PKT Transitive-Dative $X>X>$ SAP Proclitics

<table>
<thead>
<tr>
<th></th>
<th>Ki</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>ST</th>
<th>To</th>
<th>*CV</th>
<th>*PKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2&gt;X&gt;1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>mɔ̂m</td>
<td>bɛn / baw</td>
<td>bæ</td>
</tr>
<tr>
<td>$1&gt;X&gt;2s$</td>
<td>gyá</td>
<td>gɛ-ŋ</td>
<td>kő</td>
<td>ka</td>
<td>kő</td>
<td>*kV</td>
<td>*qq</td>
<td></td>
</tr>
<tr>
<td>$1&gt;X&gt;2d$</td>
<td>mʃ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*bV</td>
</tr>
<tr>
<td>$1&gt;X&gt;2p$</td>
<td>bɔ́</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bɑ</td>
<td>*bV</td>
<td>*bį</td>
</tr>
</tbody>
</table>

As in the transitive paradigm, when the non-A argument is second person non-singular, we seem to have the same basic forms as are found in every other paradigm. In the $2>X>1$ configuration, the form seems to derive directly from the transitive $2>1s$ counterpart by dative nasalization, although it is not clear if the final consonant was present or not. However in the $1>X>2s$ configuration, instead of a new form, we find the same proclitic as is used for the intransitive-dative $X>>2s$ configuration.

In the development of the modern languages, the Kiowa paradigm ended up being fully invaded by intransitive-dative proclitics and innovative derivatives thereof while the Tewa languages base their forms off of the transitive. The Tiwa languages and Towa are seemingly both more conservative, but this may be concomitant to the fact that this paradigm was not particularly distinct from the transitive in the first place.

The full transitive-dative paradigm (minus the O argument number-marking codas) appears in Table 19-49.

Table 19-49: *PKT Transitive-Dative Paradigm (FULL)
The *-d= of the dual is in parentheses because of the uncertainty of whether or not it was present when number markers were attached. If the dual forms were derived by the use of the *-pi= increment, on the other hand, the data from Towa (and indirectly from Tiwa) suggest that the number markers were appended to the end of that. As with the transitive, there were certain configurations for which a passive construction seemed obligatory. These will be discussed in chapter 0 alongside the transitive passive.

It was already noted in chapter 0 that the potential size of this paradigm, its infrequency of use, and the functional tug-of-war between the two prominent arguments (A and D) have all contributed to the different branches of the family developing their reflexes of the paradigm in different ways. Indeed, as stated previously, it may be that there was never any stable standardized way of expressing trivalent events with the possible full triple argument indexation across the Proto-Kiowa-Tanoan speaking population. There may have been instead variable use of the intransitive-dative and transitive to express the appropriate event structure, depending on features of topic and focus, argument roles, and the specific predicate involved.
19.3 Conclusion

As with any linguistic reconstruction, the proposals of the preceding chapter are highly tentative, especially coming from a first pass. Future work may overrule some of the current results, introduce minor or major addenda and revisions, or may reconfirm the above proposals. In particular I expect that we can add a reconstruction of tone into the pronominal proclitics of Proto-Kiowa-Tanoan once more data and a greater understanding of suprasegmentals in Kiowa-Tanoan are reached. Future research will also undoubtedly have more to say on the branch- and language-internal innovations that have developed the synchronic paradigmatic systems from the proposed reconstructed series of pronominals. It is my hope that the present study will at least open the door to new questions and avenues of research in Kiowa-Tanoan even if many of the proposals are ultimately disproven.

The one major issue on which the above reconstruction is particularly contingent is the actual internal structure of the family tree, to be discussed in chapter 0. I have tried to point out in the above analysis where different family relationships would lead to different reconstructions of the Proto-Kiowa-Tanoan pronominal proclitics. Different family-internal relationships could lead to radically different results in some areas, however. For instance, the reader may have noticed a variety of similarities between the Tiwa languages and Towa in the proclitic system. The above analysis presents these similarities as conservative features these two branches have preserved from the proto-language. However, if we were to instead suggest that there is a subgrouping that consists of the Tiwa and Towa branches, then those similarities could very well be shared innovations, leading us to rethink the reconstruction of Proto-Kiowa-Tanoan. Similarly,
the Tewa branch shows numerous divergent features from the other languages in its
pronominal paradigms. It was proposed that most of these come from branch-internal
innovations under an analysis where Tewa is included in some subgroup with another
branch of the family. But, if we were to instead suggest that Tewa was the first branch of
the family to split off (and thus we would have Tewa as opposed to Kiowa-Tiwa-Towa),
then we would need to reconsider whether these divergent features of Tewa are indeed
innovations or might instead be quite conservative features. Different results would also
be produced under the traditional family tree that has Kiowa breaking off from the family
first.

Thus, the proposals of this chapter are all dependent on the larger picture of
Kiowa-Tanoan-internal family relationships that have yet to be fully resolved. Of course
since those internal relationships can only be proposed on the basis of comparative-
reconstruction studies such as the above, there is a bit of a conundrum of circularity.
Arguing through the detailed comparative-historical evidence before establishing the tree,
however, does at least have the benefit of laying out all of the facts and sorting through
the possibilities before presuming too much on the basis of a family tree. We will see in
the final chapter the results of this approach. Even without a firmly established family
structure, I hope the discussion in the above chapters will be adequate to lead future
studies in an appropriate direction.
20 Voice and Indexation

We have seen above that there are "gaps" and ambiguities in the pronominal indexation system in most or all of the modern Kiowa-Tanoan languages, especially when a speech act participant (SAP: first or second person) is involved as non-A argument. In many of the synchronic languages, these formal gaps are filled by constructions typically analyzed as morphosyntactic voice alternations that may or may not affect the valence of the predicate. It was also suggested in the previous discussion that such gaps should also be reconstructed to the proto-language. Thus, in this chapter we will consider the modern morphosyntactic constructions that fill these functional gaps in consideration of how Proto-Kiowa-Tanoan may itself have expressed argument configurations involving SAPs (20.1). Following this, we will briefly look at the discussion in the linguistics literature that addresses the status of such constructions and how best to analyze them in typological perspective (20.2). Finally, we will return to the formal reconstruction of the pronominal indexation system to consider what the constituency of these proclitics might tell us about the development of such an elaborate system in the light of alignment and argument roles (20.3).

20.1 Synchronic Voice Constructions

Among the seven modern Kiowa-Tanoan languages, there is a range of special constructions used to express events where the non-A argument is a speech act participant. Within a given language, use of these constructions depends on the respective person, animacy, and topicality of the A argument and the non-A argument, but the significant variables differ only slightly from one language to the next. These
constructions vary from an obligatory change of valence and voice—what has often been called passive or inverse voice as opposed to the unmarked active or direct voice used with third person O and D arguments—to simple formal ambiguity in the pronominal proclitics used to index a given argument configuration. The languages can thus be compared and contrasted in how marked these SAP-centered constructions are when compared to those that involve action directed towards a third person.

20.1.1 Obligatory Passive + Case Marking: Picuris, Southern Tiwa, Towa

The most marked of the constructions are the comparable passive-like constructions found in Picuris Northern Tiwa, Southern Tiwa, and Towa. In these languages whenever an O argument or a D argument is a SAP and the A argument is third person, it is necessary to use this passive construction. The verb takes an overt morpheme that seems to mark a reduction in valence, the O or D SAP argument is indexed on the verb with a non-transitive proclitic (intransitive if the predicate is divalent, intransitive-dative if the predicate is trivalent), and the third person A argument is not indexed. However, if there is an overt noun or noun phrase expressing the A argument, this is marked by an agentive case enclitic. In both these Tiwa languages and Towa, this case enclitic is the same as that which marks instruments. The sentences in (1) illustrate the passive construction encoding $3\succ SAP$ configurations in Picuris Tiwa.

(1) Picuris Tiwa (Harrington and Roberts 1928: 360, 362, 372)
   a. yont’iy  pʰopokeneqpa  taliakʷ’iaʔommia
   yont’iy  pʰopoke-n=pa  ta=liakʷ’iaʔom-mia
   this       Sphynx.Moth-S=AGT  1S.ITR=tell.a.lie-PS.PF
   This Sphynx Moth has told me a lie.
b. ąnanleto’enępa, ąnantłołenępa, wi
ąnan=leto-e-nę=pa ąnan=tłole-nę=pa wi
s>>1s=grandmother-e-s=AGT s>>1s=grandfather-s=AGT even
ąnakiatamęńępa węn’oyo ąnammćitiakę’ąn
ąnan=kia-łam-e-nę=pa węn’oyo ąnäm=mać=ćitiakę’ąn
s>>1s=mother-father-e-s=AGT one like this i>>1s=RFL=tell.about.PS-PST.HAB

my grandparents and even my parents used to tell me like this...

c. kawenępayo ką’ohändiacin
kaw-e-nę=pa=yo ką’o-händiacin
owl-e-s=AGT=TOP s>>2s=child-eat.up PS=SBJ

Your child could have been eaten by the Owl.

In (1)a we find a transitive verb, liakʷia’om tell (s.o.) a lie, with a third person A argument pʰopokenę Sphynx Moth, and a first person singular O argument. Because of this argument configuration, the verb is put into the passive form with the suffix -(m)ia, the first person O argument is indexed on the verb with ta= I.STRU, and the third person A argument is case marked with the agent enclitic =pa. A similar situation is found in (1)b, but here the verb ci tell (s.o.) about appears to be ditransitive, so the pronominal indexation encoding the first person singular D argument is from the intransitive-dative paradigm. The O argument, the story the narrator was told about, is still indexed as the intransitive-dative S argument, here an inverse number entity. In this sentence there are multiple conjoined third person A arguments, each of which takes the agent case marker =pa. Finally (1)c illustrates a transitive event with a third person A argument and a second person singular external possessor indexed as the D argument. Even though the transitive O is third person, the second person D argument requires use of the passive construction, so an intransitive-dative proclitic indexes the singular O argument as S and the possessor as D. The A argument, kawenę owl, is once again case marked.

1 This may be lexically specified by the verb. Alternatively, the O argument may be singular, but the final /n/ of the proclitic ąnan= s>>1s is phonologically assimilated to the following /m/.
Cognate facts are found in Southern Tiwa, as seen in the Isleta sentences in (2).

(2) Southern Tiwa (Gatschet 1891: 210; Frantz n.d.)

a. akoyčehi, hubaku kakeβa ašerehi.
   a=koy-če-hi hubaku ka=ke=ba a=šere=hi.
   2S.ITR=lay.S/D-PS-FUT so.that S>>2S=mother=AGT 2S.ITR=catch.PS-FUT
   you will fall to the ground and your mother will catch you."

b. siannin binamjriβan iwt’aβechi’i
   si-an-nin bi=ną=mjri-ban iw=t’abe-hi=’i
   man-P 1S>3I=NA=request-PST P>>1S=help.PS-FUT=REL
   I asked the men to help me.

In (2)a we find two passivized predicates with a second person singular S argument. The first is a lexicalized detransitive construction with no overt agent expressed, only the patient expressed as the intransitive S argument. The second verb expresses a transitive event, šer catch, which is suffixed with the passive suffix -e, indexes the second person singular O argument with the intransitive proclitic a= 2S.ITR, and case marks the third person A argument, kake your mother, with the agent enclitic =ba (cognate with Picuris Tiwa =pa above). The complex sentence in (2)b is interesting. The matrix clause takes a first person singular A argument and third person inverse O argument, and thus is formally active. However that same third person O argument is also semantically the A argument of the complement clause containing the verb t'am help. This verb lexically requires transitive-dative indexation where the patient being helped is encoded as the D argument and the O argument requires plural indexation although it has no overt referent. Because the same first person singular referent from the matrix clause is the D argument of this complement clause and there is a third person A argument, the passive is required: the verb is in the passive form t'abe, the first person D and the "empty" plural O argument is indexed with an intransitive-dative proclitic iw= while the third person
inverse A argument is not indexed at all. Notice, however, that because the third person A argument occurs within the matrix clause as the O argument, it apparently does not take the agent case marker =ba.

The facts of Towa are quite comparable, as seen in (3).

(3) Towa (Sprott 1992: 231)

\[ \text{konôpenô-nise} \ldots \text{nî} \text{dô} \cdot \text{Yôštæ} \text{isê-} \text{miye} \text{ye'e} \]
\[ \text{kô=nôpenô=nise} \ldots \text{nî} \text{dô} \cdot \text{Yôš=tæ} \text{i=sê miye} =\text{e} \]

3>1s=know.ST=IF 1s that God=AGT 1s.ITR=send.PS.PF=REL

If you knew ... that I am the one God sent.

Here we find a passive construction in the subordinate clause when a 3>1s configuration is being expressed. The verb mi̱: send is marked as passive, the first person singular O argument is indexed as an intransitive S argument with the proclitic i= 1s.ITR, and the third person A argument, Yôš God, is not indexed on the verb and is case marked with the enclitic =tæ.

The passive construction is never used when the A argument is first or second person in these languages, however.

(4) Picuris Tiwa (Harrington and Roberts 1928: 354, 380)

a. aɨllayməku aʔoməhû howə’an yohotayo ʔəhən′ęci
a=ʔil-lay-mo a=ʔomę-hu howe’an yohotayo a=haŋnę-ci
2s.ITR=on.back-sit.S/D.IMP-? 1>2s=tell-IPF or.else right.here 1>2s=eat.up-POT

Get on my back, I said to you, or I will eat you up right here.

b. ho maysiamęmę’aqan wat¹a tamę xa’a
ho may=siamę-mę’aqan wat¹a ta=mę xa’a
thus 2>1s=call.names-HAB there 1s.ITR=go.PF then

mapipōhasjwpula-liweći.
ma̱l=po-ha-sjwpula-liwe-ci.
1>2p=all-?-bite-POT

If you keep calling me names I will go over there and bite every one of you.
In the Picuris Tiwa sentence of (4)a we find two transitive events ʼqomę tell and ʼhannę eat up, both of which take a may= 1>2s transitive proclitic and are not marked as passive.

We find the same in (4)b where transitive may= 2>1s and mąpi= 1>2p proclitics are used with no trace of any passive morphosyntax.

The same patterns are found in the Southern Tiwa sentences in (5).

(5) Southern Tiwa (Frantz nd; Laylin 1988: 209, 282)

a. męni, ınthinį, męnhʷe hi

   mę=ı ınth=ı mę hernhör=hi

2D.İTR=come s>>1S=home=REL 1>2D=take-FUT

   "Come, I will take you to my home."

b. beykarulįemiañ

   bey=karulųje-mban

2>1s=car-rob-PST

   You robbed me of my car

c. ną imuñan

   ną i=mų-ban

1 1>2s=see-PST

   I/We saw you.

We find a transitive 1>2D proclitic męn= in (5)a and a 2>1s proclitic bey= in (5)b with not a hint of a passive. The simple sentence of (5)c also shows us that we find no case marking on an independent pronoun expression of a first person A argument: ną I/We and never *nąba.

Towa also precludes the use of the passive construction when the A argument is a SAP. The complex sentence in (6) shows the complementary distribution of the passive as SAPs alternately fill O argument and A argument roles.
In the first two clauses—the second being a restatement of the first—we see a third person A argument (unexpressed) and a first person O argument, thus requiring the use of the passive form of the verb \( \text{hî} \ kill \). This is followed by a clause with a second person plural A and a first person plural O argument, so we find the active form of the verb \( \text{zà} \ yô \ command \). We then find a mirror image of the first clause, where the same verb \( \text{hî} \ kill \) now appears in its active voice with a first person A and a third person O argument, which is followed by another active use of \( \text{zà} \ yô \ command \) indexing a first person A and a second person O argument. This and the other above sentences should show just how well integrated into the indexation paradigms the passive construction is in these languages.

In a simple clause the constraints within the three languages above appear to be comparable. However, there is some suggestion that the dictates of the passive construction may differ when it comes to complex clauses. Compare the Southern Tiwa complex sentence in (7) with the Picuris Tiwa complex sentence in (8).

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2 This sentence is from a Towa translation of the David and Goliath story.
(7) Southern Tiwa (Frantz nd)

siannin binąmi̱riβan iwt’aβehi’i
sian-nin bi=nąmi̱ri-baŋ iw=t’aβe-hi=ʔi
man-P 1S>3l=NA=request-PST P>>1S=help.PS-FUT=REL
I asked the men to help me.

(8) Picuris Tiwa (Nichols 1995: 86)

hexči kąnqantąlnolęnepą an’ilat’čeči’e
hexči kąnq=tan-lol-e-ńe=pa an=ʔila-t’či=ʔe
why 3S>>1D=father-old-e-S=AGT 1D>3S=willow-cut-POT=SB
wamiaįmę
Ø=wa-miaįmę 3S.ITR=NEG-want-sb.IPF

Why does our grandfather not want us to cut the willows?

In the Southern Tiwa example, the noun *siannin men* appears without case marking, as the O argument of the matrix clause even though the same referent is the agent of the passive complement clause. In the Picuris Tiwa example in (8), however, the noun *kąnqantąlnolęne* our grandfather takes the case marker =pa even though it seems to be the S argument of the formally intransitive complement-taking matrix predicate and not of the predicate involving a SAP. Notice too that neither of the predicates in the Picuris sentence is formally passive. While there are a number of differences between these two examples that could explain the different distribution of the case marking (e.g. argument role with respect to the matrix clause, the status of dative arguments), they do suggest that more research into complex clauses may reveal further interesting distinctions in the use of passive constructions and case marking in the above three otherwise comparable languages.
20.1.2 Obligatory Passive, No Case Marking: Taos Tiwa

While examples such as the Southern Tiwa, Towa, and Picuris Tiwa sentences above are amply described and discussed in the linguistics literature, Taos Northern Tiwa shows a divergent pattern. Like the above languages, Taos Tiwa lacks any proclitics that formally index a third person A argument acting on a SAP O or D argument. In these configurations, a passive form of the verb (cognate with the construction seen in the above three languages) is used and only the SAP argument is indexed with a non-transitive pronominal on the verb. However, unlike in the above languages, an overt noun or NP expressing the agent is not case marked with the instrumental enclitic (formally =bob in Taos Tiwa), as seen in (9).

(9) Taos Tiwa (Harrington 1910a: 41; Wycliffe 1976: 2)
   a. yuhi kolliw’tu had owihutahę.
      perhaps wolf-old.woman-DIM already 1 S.ITR=EV=kill.PS-IMM.FUT
      Perhaps very soon Old Woman Wolf will kill me.
   b. nö pip’ip’ọ’ma p’ọ’bọ wönọ ọwọnọ mọ’p’ọ’ọ’ma’a
      nö pi=p’ọ’p’ọ’m-ya p’ọ̄=bob wönọ ọwọnọ mọ=p’ọ’ọ’m-ya-ya
      1 1 S>3 I=baptize-POT water=INSTR but 3 2 P.ITR=baptize-PS-POT
      Wómaya Qmhọ’wanbọ.
      Wómaya Qmhọ’wan=bọ
      Holy Spirit=INSTR
      I have baptized you in water, but he will baptize you in the Holy Spirit.”

In (9)a we have a thoroughly transitive verb, hu(t) kill, which is marked as passive with the suffix -ya³, and indexes the first person singular O argument with the intransitive proclitic = 1 S.ITR. The third person A argument kolliw’tu Old Woman Wolf is not indexed on the detransitivized verb, but note that it also takes no case marking. We find another

³ This is one of the verbs with a historical coda /t/ that appears only in the passive construction, cf. chapter 10.
nice minimal pair in the conjoined clauses of (9)b. In the first clause we find a first person A argument and a third person O argument and thus an active use of the verb \textit{p'ip'ɔ́ɔm} baptize. The pronoun ɲɔ of course takes no case marker (but note we do find an instrumental use of the enclitic =bɔ, the cognate to Picuris Tiwa =pa and Southern Tiwa =ba: \textit{p'ɔ́ba} with water). In the second clause we have the same verb, but passivized because the A argument is third person and the O argument is second person plural. Note that the pronominal expression of the third person A argument, ɔ́wɔ́n he, takes no case marker either (but we do find another instrumental use of =bɔ: \textit{Ẉómaya Qmḥwanḅo} with the Holy Spirit).

As above if the A argument is first or second person, the passive construction is impossible and a simple active clause is used, as in (10).

(10) Taos Tiwa (Trager 1940: 174; Harrington 1916: 155)  
\begin{tabular}{ll}
\textbf{a.} & ɲɔ̨ntɛn mɔ̨ywɔ̨ŋmɛ̨xu  \\
& ɲɔ̨ntɛn mɔ̨yw=wɔ̨ŋmɛ̨-xu  \\
& now 2>1S=NEG=tell.PF-COND.FUT 1>2S=hit-FUT  \\
& now 2>1S=NEG=tell.PF-COND.FUT 1>2S=hit-FUT  \\
& \textit{If you don't speak to me, I'll hit you.} \\
\textbf{b.} & ñɔ  mɔ̨pimų  \\
& ñɔ  mɔ̨pi=mų  \\
& 1 1>2P=see.PF  \\
& \textit{I/We saw you (pl.)}  \\
\end{tabular}

In each of the above sentences, a simple active clause is used and the appropriate \textit{SAP}>\textit{SAP} transitive proclitic is found indexing the two arguments. Compare also the first clause of (9)b where a first person A argument was combined with a third person O argument.
20.1.3 Case Marking, No Passive: Tewa Languages

In the Tewa languages, it is effectively the opposite of the Taos Tiwa construction that is found. The verb takes no formal voice morphology and there is no alternation in the verbal indexation—Tewa possesses proclitics that index $3>\text{SAP}$ and $3>X>\text{SAP}$—but any overt expression of the A argument does take a case marker $=\text{di}$. As in Picuris and Southern Tiwa and Towa, this agent case marker is identical to the instrumental case marker$^4$. Examples from Arizona Tewa are seen in (11).

(11) Arizona Tewa (Kroskrity and Healing 1980: 121, 122; Yegerlehner 1959b: 80)

a. hedi $\text{pêhkwiyo}^\text{4}$ ba $\text{i'aqk'awm}^\text{6} \text{wef}^\text{y} \text{di} \ ha \text{daq}^\text{7} \text{ ba bayenahkwiyo} \text{d} \text{i}$
   then deer-woman EV 3S.RFL-think-keep-SB probably EV coyote-woman-AGT
   
   he $\text{ye}$ ba $\text{wedih}\text{a}'m\text{d}i$
   anytime EV NEG-X>1-eat-POT-SB
   
   So then Deer-Woman she kept thinking to herself, "That Coyote-Woman could devour me at anytime."

b. nɛ$\text{g}^\text{8}$i pâŋ dam$\text{m}^\text{1} \text{m}^\text{i} \text{ha} \text{daq}^\text{7} \text{ pinct'ô'i bayenahkwiyo} \text{d} \text{i}$
   this-REL direction 2D.ITR=be-POT probably evil-REL coyote-woman=AGT
   
   wéwóbêŋ$\text{q}^\text{9}$'k'ya$\text{m}^\text{1} \text{d}i$
   NEG=3>2D=track-POT=SB
   
   I doubt that evil Coyote-Woman will be able to track you in that direction.

c. hɛ$\text{j}^\text{10}$ndi dìmpa$
   that-i=AGT X>X>1=make.PF
   
   They built it/them for me/us.

The sentence in (11)a is taken from the Tewa version of the same story seen in the Taos Tiwa example (9)a: the Deer Woman is fretting about her imminent death at the hands (or

$^4$ It is also used for ablative and locative sources. Via this source relationship, it may also be related to the homophonous subordinate clause enclitic $=\text{di}$ which attaches to verbs, as discussed in Kroskrity (1978a).
(11) Coyote Woman. Here this concern is expressed with the verb haʔ eat, which is indexing a first person singular O argument and a third person singular A argument. No special morphology to mark voice is found on the verb, but note that the nominal expression of the third person A argument, baynałkwiyo Coyote Woman, takes the agent case enclitic =di⁵. We find the same agent, with the same agent marker, in (11)b, but here with a second person dual O argument indexed on the transitive verb ʔíʔk'ěya track. Simple sentence (11)c illustrates similar agent marking and non-A SAP indexation, but here involving a dative construction. The first person dative is expressed on the verb while the independent pronominal expression of the third person plural A argument is case-marked with =di.

The facts of Rio Grande Tewa in these configurations are entirely comparable to those seen in its Arizona Tewa sister, as found in (12).


a. puʔt'ɑʔe·ráháʔ
dihó yóʔqŋ
pu·t'a·=e·=di=ú= háʔ
di=hó·yóʔqŋ
rabbit-dry=DIM=AGT=TOP=then X>1=lie.to.PF
That doggoned little rabbit has lied to me again."

b. ʔuʔá kavî ʴündarori wiwó·ʔa'gímí
ʔu=á kavî ʴündaro=di wi=wó =a'gín=pi
2S=TOP DUB soldier=AGT NEG=3>2S=respect.PF=NEG
I guess your soldiers won't obey you.

The sentence in (12)a is exactly comparable to the Arizona Tewa sentence of (11)a: a third person A argument case marked with =di and a first person O argument indexed with the transitive proclitic di=X>1. The example in (12)b illustrates a third person A with a second person O, indexed with the proclitic wó=3>2s, found only in transitive usage with a third person A argument.

5 Recall that the tone of this enclitic in Tewa assimilates to the tone of the preceding syllable.
Unlike any of the Tiwa or Towa languages, however, first and second person pronouns also take the agent case marker when they are overtly expressed. This is found in both Tewa languages whenever the O or D argument is a SAP, as shown in (13) for Arizona Tewa.

(13) Arizona Tewa (Yegerlehner 1957: 29, 30, 38; 1959b: 80; Kroskrity 1985: 312)

a. ˀųˀ di n̄ di’tay
  ˀųˀ=di n̄ di=tay
  2S=AGT 1S X>1=know.ST
  You know me.

b. n̄ ˀį ndi ˀųˀ wítay
  n̄ ˀį=di ˀųˀ wi=tay
  1NS=AGT 2S 1>2S=know.ST
  We know you.

c. n̄ ˀˑ di w̄kʷ‘i’
  n̄ =di w̄=kʷ‘i’
  1S=AGT 1>X>2 S=give.PF
  I gave it to you.

d. ˀųˀ di dímpa’
  ˀųˀ=di dí=pa’
  2S=AGT X>X>1=make.PF
  You built it/them for me/us.

e. ˀųˀ di n̄ ˀ di’ú wâmêgi
  ˀųˀ=di n̄ =di=k’ú=wá-mêgi
  2S=AGT 1S X>1=sheep-give.PF
  You gave me sheep.

The transitive sentences in (13)a and (13)b show us that whether we have a 2>1 or a 1>2 configuration, any independent pronoun must be case marked with =di. We find the same requirement in transitive-dative events, such as those illustrated by (13)c, (13)d, and (13)e. The Rio Grande Tewa reflex of this construction is shown in (14).

(14) Rio Grande Tewa (Oke 1982: 7)

n̄ ri wi píví w̄ŋhó we’nî ˀˀ o t̄ bíñ ˀˀ dê wa’sí-hêyi’ñiweri
n̄ =di wi píví w̄ŋ=ho we ni ˀˀ o t̄ bíñ ˀˀ dê=wa si-hêyi’ñiweri
  1S=AGT INDF meat 1>X>2S=get.POT DIST across.river 3P>3=cow-kill.IPF=LOC
I’ll go get you some meat over across the river where they're slaughtering a cow.
In this transitive-dative event, we have a second person D argument, only expressed in
the indexation on the verb hó·we·níi get (POT), and a first person A argument which is
also indexed on the verb in the proclitic wíŋ = 1>X>2s, but is expressed too in the
independent pronoun nqː. This pronoun takes the case marker, just as we saw in Arizona
Tewa.

There is, however, a noticeable difference between Arizona Tewa and Rio Grande
Tewa with regard to this case marking construction. In Arizona Tewa it is only used
when the O or D argument is first or second person (and when both core arguments are
third person, see below). When the A argument is a SAP and the O or D argument is third
person of any kind, no case marker is used, as we find in (15).

(15) Arizona Tewa (Yegerlehner 1959b: 78, 79)

a. nqː heŋ dótay
   nqː heŋ dó=tay
   1s that 1s>3s=know.ST
   I know him/her.

b. ṭuŋ heŋ nú=tay
   ṭuŋ heŋ nú=tay
   2s that 2s>3s=know.ST
   You know him/her.

c. nqː dobé paː
   nqː dobé=paː
   1s 1s>X>3a=make.PF
   I made it/them for them (P).

With a third person O argument, no agent marker is found, whether the A argument is
first person (15)a or second person (15)b, or if the third person is a D argument with a
first or second person A (15)c. By contrast in Rio Grande Tewa, an A argument first or
second person pronoun will take the agent case marker whenever a third person O or D
argument is an animate third person argument, but not when it is inanimate.
In (16)a and (16)b the respectively second and first person independent pronoun requires the agent case enclitic =di when the O argument is animate, like ˀi seg the man here. If this O argument is inanimate, as in (16)c, no such case marking is found. In other words, Rio Grande Tewa uses the agent marking case enclitic whenever the O argument is animate, no matter what person it is. Arizona Tewa restricts the case marker to configurations with SAP O or D argument (but see below).

It should also be noticed that even though the Tewa languages possess proclitics that index SAP O or D arguments combined with a third person A argument, they are not as semantically well defined as other areas of the paradigms. A single proclitic is used for a first person O or D argument no matter what number it is and no matter what the person and number of the A argument is: dì= for X>1 and dìŋ= (RGT) / dìŋ= (AT) for X>X>1. Similarly when the O or D argument is second person, a third person A argument is not differentiated for number: wò= for 3>2s, wòŋ= (RGT) / wòŋ= (AT) for 3>X>2s, wòvëŋ= (RGT) / wòbëŋ= (AT) for 3>2d and 3>X>2d, and wòvë= (RGT) / wòbë= (AT) for 3>2p and 3>X>2p. While this level of distinction is comparable to what is
found in \( \text{SAP} > \text{SAP} \) pronominals in all of the Kiowa-Tanoan languages, it is much less fine-grained than what is found in \( \text{SAP} > 3 \) and \( 3 > 3 \) pronominals. It also suggests that these \( 3 > \text{SAP} \) and \( 3 > X > \text{SAP} \) proclitics may be innovative within the Tewa languages (see discussion in chapters 0 and below).

### 20.1.4 No Passive, No Case Marking: Kiowa

Finally, Kiowa differs from all of the above languages in showing no apparent reflex of any voice construction when SAPs are involved. There is no agent case marker that appears in any configuration of arguments and the verb never shows any valence change. All configurations of \( \text{SAP} > \text{SAP}, \ 3 > \text{SAP}, \ \text{and} \ \text{SAP} > 3 \) are morphosyntactically comparable and are indexed by proclitics. We see this in the sentences in (17) where we have a third person A argument and a SAP O or D argument.

(17)  
\begin{enumerate}
\item Kiowa (Watkins 1984: 175; 2009(p.c.): 3, 4)
\item \( gə ^{\text{\textscript{\textordf{\textalpha}}}}ŷhəde \ e^{\text{\textscript{\textbeta}}}áydo' \)
\( gə ^{\text{\textscript{\textalpha}}}ŷ-hə-de \ e^{\text{\textscript{\textbeta}}}áydo' \)
\( \text{and.SS} \ \text{that-DF-REL} \ X>1s=\text{stay.with.PF} \)
\( \text{and she was the one who stayed with me}. \)
\item mą'yí e^{\text{\textscript{\textalpha}}}ôdop
\( mą'yí e^{\text{\textscript{\textalpha}}}=t^{\text{\textscript{\textbeta}}}ô\ \text{dop} \)
\( \text{woman} \ X>1s=\text{leave.behind.IPF} \)
\( \text{The woman was leaving me behind...} \)
\item dött'e \ gá\text{\textalpha}tkámhèl \ dë^op \ qmcá\text{\textash}ni t'ç\ 'de'
\( dött'e \ gá\text{\textalpha}t=kám-hèl \ dë^op \ qm=câ\text{\textash}n-i-t'ç\ '}-dè'
\( \text{doctor} \ X>2s=\text{indicate.PF-HSY} \ \text{at.times} \ 2s.itr=\text{arrive-IPF.POT-FUT-HSY} \)
\( \text{You are to be coming at times the doctor indicated to you}. \)
\end{enumerate}

In both (17)a and (17)b we see a first person singular O argument indexed on an active verb, but no special marking on the overt expression of the third person A argument. In (17)c we find a transitive-dative verb, \( \text{kým} \text{\textit{indicate}}, \) that indexes a second person D
argument, but again with no trace of special treatment on the third person A argument.

The same is true when the primary arguments are both SAPs, as in (18).

(18) Kiowa (Watkins 1984: 101; Merrifield 1959a: 169)

a. nů́ čmtó· tʰáy
   nů́ čm=tó· tʰáy
   1  1s>2s=speak.with.PF
   *I'm the one who talked with you.

b. ˀá m nů́ bá̤̣ o· gyáʔ̣ ỵ
   ˀá m nɔ́ bó· gyá=ʔ̣ ỵ
   2 1 cat 1s>s>2s=give.PF
   I gave you the cat

In both a transitive (18)a and a transitive-dative(18)b construction, the overt first person pronouns marking the A argument take no case marking and the verb shows full indexation of all arguments without any voice change.

Despite the lack of any voice-like construction, Kiowa does show a similarity to Tewa in that the part of the pronominal paradigm indexing 3>SAP and 3>X>SAP is a little reduced compared to other configurations. Indeed, as was already noted in chapters 0 and 0, the proclitics that index transitive X>SAP are imported from the dative paradigms. Moreover, transitive 3>1 and transitive-dative 3>X>1 are formally identical to transitive 2>1 and 3>X>3 respectively, i.e. they are non-unique forms within the paradigm. This suggests, as we see in Tewa, that this SAP argument function of these proclitics may be an innovation and that proclitics indexing either SAP>(X>)SAP or 3>(X>)3 configurations were co-opted for use with 3>(X>)SAP configurations.

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There are other curious mergers involving these proclitics as well. The 3>2s and 3>X>2s proclitics are somewhat distinctive from the first person forms in that they are not used in the intransitive-dative paradigm. However, the A argument of these proclitics is not well specified for person and number and actually indexes any first or third person argument except for first person singular. There is a distinct set used with 1s>(X>)2s configurations.

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20.1.5 Voice and 3>3 Configurations

The reader may remember from the synchronic overview in chapter 0 that the voice-like constructions are also to be found when both primary arguments are third person, i.e. 3>3 and 3>X>3 configurations. Because all of the languages possess transitive and transitive-dative proclitics that index such configurations, this use of the passive/inverse voice is "optional" as opposed to the "obligatory" use illustrated with SAPs above. More accurately, the distribution of the marked voice construction with 3>(X>)3 configurations is based primarily on information tracking of third person arguments within the discourse: the active/direct (unmarked) voice form is used when the A argument is the more prominent within the current discourse while the passive/inverse (marked) voice form occurs when the O or D argument is the more prominent. Related to differentiation of prominence is differentiation of animacy, where animate entities are considered more prominent than inanimate (and human and highly anthropomorphized entities are more likely to be prominent than non-human animate referents). The details of the distribution of the contrasting voice-like constructions undoubtedly differ per language, but have not been thoroughly studied in any of the languages.

The form of the voice alternations in the different languages is identical to what was seen above. When the non-A argument is prominent in Picuris and Southern Tiwa and Towa, the verb takes a marker of reduced valency, the proclitic indexes the third person O or D argument with an intransitive or intransitive-dative proclitic respectively, and an overtly mentioned A argument is marked by an agent case enclitic. When the A

7 "Prominence" may mean some kind of topic or focus status within the overall discourse or recent mention and topic status within some smaller segment of the discourse.
argument is the more prominent, the unmarked voice construction is used: the verb takes no valency-reduction morpheme, the appropriate transitive or transitive-dative $3>X>3$ proclitic is used, and no case marking is found. The sentences in (19) illustrate this use of the passive in Picuris Tiwa.

(19) Picuris Tiwa (Harrington and Roberts 1928: 320, 354)

a. ḣo'ọnčë čiwëñpa ḣnay'^ommia ḣmmë
   Ḥo'ọ-e-në čiw-e-në=pa ạn=ay'=gm-mia ọn=mc
   child-DIM-e-S eagle-e-S=AGT 2D=while=tell-PS.PF 2D.ITR=go.PF
   The little children went as the Eagle had told them.

b. čoxomën Kalenëpa ḣiwëñ p'immak'îl ḣowlia.
   čoxomën kal-e-në=pa tiw-e-në p'jñ'māk'îl ọ=gmow-lia
   once wolf-e-S=AGT woman-e-S mountain-up 3S.ITR=take.up-PS.PF
   And the Wolf took the woman up to the mountains.

In (19)a it is the children who are the main characters of the narrative. Thus even though the Eagle is highly anthropomorphized here and is helping them on their mission, the children are indexed as the S argument of a passivized transitive verb Ḥom tell and the agent is case marked with =pa and not indexed. Similarly in (19)b, it is the woman who is the core character of the story, the person around whom events are transpiring, and thus she is cast as the S argument of the passivized form of the verb ḣow take up and the agent is coded as a case-marked oblique, Kalenëpa by the Wolf.

The sentences in (20), by contrast, illustrate active constructions with two third person arguments in Picuris Tiwa.

(20) Picuris Tiwa (Harrington and Roberts 1928: 384)

a. čihok'îl čomën mëncoho P'ayčelko'je'ěčo.
   čiho-k'îl ọ=čo-mën mëncoho ọ=P'ayčelko'je'ěčo
   there-when 3S.ITR=pass-PST.IPF then 3S>3S=cricket-step.on.PF
   As he passed there, he stepped on the Cricket.
That night the Cricket called his people.

These two sentences are taken from a story in which there are two main characters: Coyote and Cricket. The story opens up with an introduction of Coyote setting out to travel. The sentence in (20)a, although not the first mention of Cricket, is the first encounter between the two characters. As prominent as Cricket is in the narrative, he is here expressed as the O argument of a transitive and Coyote as the A because thus far in the story we have been tracking Coyote's activity. Had Coyote been stepped on by Cricket, we probably would have a passive construction. Once Cricket is established as an acting character, however, we find him expressed as an A argument when he acts towards more minor characters, as in (20)b. Such sentences help to illustrate the motivation between the use of the active and the use of the passive constructions when the "options" are available.

The sentences in (21) illustrate the cognate usage of voice alternations in Southern Tiwa.

(21) Southern Tiwa (Leap 1970: 212)

a. ḱi’i AllowAnonymous  P’ayčelkone  anv’aywia’e  i’x’ia’an.
   ḱi’i  n’owia’ne  p’ayčelko-ne  ḱn=t’ay-wia’e  i=x’ia’-diğ
   that night-s  Cricket-s  3S>3S=people-be=REL  3S>3I=call-PST
   That night the Cricket called his people.

b. či’i  n’owianę  P’ayčelkone  anv’aywia’e  i’x’ia’an.
   či’i  n’owia-ne  p’ayčelko-ne  ḱn=t’ay-wia’e  i=x’ia’-diğ
   that night-s  Cricket-s  3S>3S=people-be=REL  3S>3I=call-PST
   That night the Cricket called his people.

These sentences are two adjacent lines of the same story. In (21)a we encounter the passive. Even though it is the snake who has been actively attempting to attack the
rabbit—and had been construed as a transitive A argument in previous sentences—the immediately preceding line had been an intransitive predicate with the rabbit as the S argument. Because of this immediate topical context, the rabbit is still construed as the "higher" argument and is cast as the S of a passivized transitive verb. However once the snake is mentioned again as the agent, in the immediately following line in (21)b, we find the snake expressed again as a primary argument. In the first clause, the snake is indexed as the dative goal of the rabbit's movements and then in the second clause acts as the A argument of an active transitive clause.

Towa also appears to make the same use of its cognate active-passive alternation. The sentences in (22) are both taken from the same narrative, albeit some lines apart.

(22) Towa (Sprott 1992: 223, 225)

a.  nį g’a Jesus=tæ dö’ sqdá-li∫į no ʒmǔsa
   nį g’a Jesus=ŋtæ dö’ sqdá-li∫į no O=ŋbûsa
   then  HSY Jesus=AGT that soldier-governor  thus 3S=tell.PS.IPF
   Then Jesus said to the centurion...

b.  nį g’a dö-š eši’e’es  t’e’æ’eš  φâ’le  ʃl  e’ê’e
   nį g’a dö-št e=sí-e=ʔe-št  t’ê’-š  φâ’le  ʃl  e=ʔe=ʔe
   then HSY that-I 3I=with-sit.S/D.ST=REL-I  person-I  around also 3I.ITR=sit.S/D=REL
   g’a  no  eʃmʊq̄j
   g’a  no  e=ŋba̱j
   HSY  thus  3S=3I=tell.IPF

Then he told his companions, the people who were around him...

Because the centurion was most recently the topic of discussion and the actor of events in the preceding context, a passive clause is used in (22)a. Even though Jesus might be more important in the greater context (the Gospel being about him, after all), the centurion serves as the S argument of a passivized transitive verb ʒb- tell. Some lines later, in (22)b, as the centurion is once again the actor of events, we find the same verb used in the active voice, with the centurion indexed as the A argument affecting other minor
characters construed as the O argument. Thus Towa seems to have the exact same usage as we saw above in the Tiwa languages.

In Taos Tiwa similar constructions are used, but the agent lacks a case marker whether the active/direct or passive/inverse voice occurs.

(23) Taos Tiwa (Kontak and Kunkel 1987: 34; Messengers 1992: 50)

a. \( k'\text{ad yíanéy húwôy ʔúmma wiwa əwôya'i} \)

\( k'\text{ad yíanéy húwôy O=ʔúm-ya wiwa ə=wô-ya=i} \)

and there how 3S.ITR=tell-PS.PF again 1S.ITR=be.born-POT=REL

\( ṉwamɔ̞ mü \)

\( Ø=ṉw=wa-mɔ̞ mü \)

3S.ITR=NA=be-ST Q

And there that's how he was told by him. 'It is that you should be born again'

b. Jesus ʒmcuwa'ʃn слава, Jesus ʒm=cu-wa=ɪ-nɔ̞ ʔúm ʃla,

Jesus I>>3S=equal-be=REL-I 3 S.ITR=ask.about.PS.PF

And his disciples asked him about...

I do not have the discourse context of (23)a, although it is obviously taken from a Christian text (considering the source). No agent is expressed nor is the O argument, which is here indexed as the S of a passivized transitive verb ʔúm tell. In (23)b we do find both arguments of the passivized transitive expressed: Jesus is the erstwhile O argument here indexed as the S argument of the transitive verb. Given that he has just finished telling a parable (The Parable of the Sower), he is construed as the more prominent referent. The agent, ʒmcuwa'ʃn his disciples, is found without any overt indications of its non-indexed status. The sentences in (24), by contrast, illustrate active 3>3 configurations in Taos Tiwa.
We find the same active predicate, \textit{mû see}, in both sentences. In (24)a the man is cast as the O argument of the transitive action and is in fact incorporated into the verb. The A argument is not overtly expressed. In (24)b the man serves as the A argument and the O argument is being questioned with a content interrogative. These sentences are cited out of any context, so the information status of the arguments cannot be remarked upon. Nonetheless we can note the alternation between active and passive in 3>3 configurations in Taos Tiwa just as in the other Tiwa and Towa languages.

The Tewa languages have no valence change marked on the verb. However, they do have two different sets of 3>3 proclitics. Those that index the number of the A argument (\textit{i= (RGT)} / \textit{mâ}= (AT) 3s>3, \textit{dã}= (RGT) / \textit{dê}= (AT) 3d>3, \textit{dè}= (RGT) / \textit{dí}= (AT) 3p>3) are equivalent to the active/direct voice usage of the other languages above, i.e. when the A argument is more prominent. Those that index the number of the O argument (\textit{ô}= 3>3s, \textit{ovâ}= (RGT) / \textit{obê}= (AT) 3>3d, \textit{ovê}= (RGT) / \textit{obê}= (AT) 3>3p) are equivalent to the passive/inverse voice usage from above, i.e. when the O argument is more prominent. The latter set occurs with the case marker =\textit{dí} on the A argument while the former set never does.
Related to the different distribution of the case marker in these two languages, we also seem to find a difference in the use of these two sets of proclitics in 3>3 configurations. In Arizona Tewa the former set (active/direct voice) without the case marker may index an animate or inanimate O argument. Usage of these Arizona Tewa proclitics is seen in (25).

(25) Arizona Tewa (Kroskrity 1985: 189; Kroskrity and Healing 1980: 121, 121)

a. Ḗmbí yíyádí k̪húgep’e óbè=hoŋ.
   Ḳŋ-bí yíyá=dí k̪húge=pe’e óbè=hoŋ
   3I-POSS mother=AGT cliff=toward 3>3A=take.PF
   they were taken to the cliff by their mother.

b. Ḳi-we Ḗmbí pep’eː mámp’ec’a’:ləŋ kida máŋkot’i diŋ
   Ḳi-we Ḳŋ-bí pep’eː máŋ=pe’e’c’a’ ləŋ kida máŋ=kot’i diŋ
   there-LOC 2P-POSS great.uncle 3S>3=stick-cut-IPF and.TOP 3S>3=block-IPF
   There where the river flows you will find your Great Uncle chopping wood
   AND building a dam.

c. Ḳibí’i dapowadí dəntu’qmmi nq mbí yi’ya
   Ḳi-bí=dí da=powa=dí dəŋ=tu’qmm-mí nqŋ-bí yíyá
   DF-POSS=there 3D.ITR=arrive.PF=SB 2D>3=tell-POT 1P-POSS mother
   bayεnahkwiyódí ke ó hədąŋ wəŋpwpowadí
   bayεnah-kwi’yó=dí ke ó=ha’=di-ąŋ we=q=powa=dí
   coyote-woman=AGT surely 3>3S=eat=SB-FOC NEG=3S.ITR=arrive.PF=SB

   When you reach him you should tell him, "Our mother never returned because she was eaten by Coyote-Woman."

The sentence in (25)a gives us the passive/inverse-like construction, where the A argument yíyá mother is case marked and the o-initial proclitic is used, indexing the number of the O argument. In (25)b we find two conjoined clauses making use of the direct/active-like indexation, with an animate A argument taking no case marking affecting inanimate third person O arguments. Finally (25)c gives us a direct-like construction with an animate O argument: dəntu’qmmi you (d) should tell him. In the immediate discourse—the preceding clause, actually—the dual second person has been
construed as the prominent argument, so this is maintained even when acting upon an animate entity. Within the complement of this speech act matrix predicate, we find an inverse-like construction with the proclitic $6 = 3 \succ 3S$ and a case marked A argument bayənahkwiyó Coyote Woman.

In Rio Grande Tewa there appears to be an overwhelming tendency for the active/direct proclitics to be used when the O argument is inanimate, but not when animate (or only rarely). Since the agent case marker is used in Rio Grande Tewa whenever the O argument is animate (but not so in Arizona Tewa), we find a correlation with the usage of the two sets of proclitics in the languages. We find this use of the active with inanimate O arguments in (26).

(26) Rio Grande Tewa (Oke 1982: 19, 29-30)

a. wí thá ᵀ hə, iví saʔyáː iʔaqæhpaʔihe ri…
   wí thá hə iví saʔyáː i=ʔaqæŋ-pa=ʔihe di
   INDF day then 3S.POSS grandmother 3S=3=atole-make.PF=when
   One day, when his (Fireside Boy’s) grandmother made atole…

b. ŋíŋ kʰú yóá divíkʰóramí šəʔ, ŋíŋ pʰôme dê mûʔihe ri
   ŋíŋ kʰú yó=á diví=kʰóramí-šəʔ, ŋíŋ pʰôme bê dê =mû=ʔihe ri
   DF.I wolf=TOP 3P.RFL=elbow-dig.IPF DF.I skull 3P=3=see.PF=when
   The wolves started nudging each other with their elbows when they saw the skull.

Within both of these sentences, we simply have an animate entity acting upon an inanimate entity, and so the information structure expressed in the choice of proclitic follows from typical discourse tendencies that rank animate referents over inanimates. In (27), however, we have O arguments that are animate and thus take the passive/inverse-like construction.
In the context preceding (27)a, the rabbit had been the only actor. Old Man Coyote is introduced in the immediately preceding sentence, which could be thought to motivate the use of the \( \dot{\mathbf{o}} = \) construction. However, it does appear that it is just as much a matter of both arguments being animate that leads to the use of this construction as any particular discourse information. In (27)b we find the primary character, the lamb, as the O argument of a transitive predicate, thus the passive/inverse-like construction is licensed both by discourse structure and animacy. The sentence in (27)c presents a transitive-dative construction. Note however that the transitive-dative does not appear to show an alternation in either Tewa language: \( \dot{\mathbf{o}} \dot{\mathbf{g}} = \) (RGT) / \( \dot{\mathbf{g}} \dot{\mathbf{g}} = \) (AT) \( 3 \times 3 \), \( \dot{\mathbf{o}} \dot{\mathbf{v}} \dot{\mathbf{c}} \dot{\mathbf{g}} = \) (RGT) / \( \dot{\mathbf{c}} \dot{\mathbf{g}} = \) (AT) \( 3 \times 3 \), \( \dot{\mathbf{o}} \dot{\mathbf{c}} \dot{\mathbf{g}} = \) (AT) \( 3 \times 3 \), \( \dot{\mathbf{v}} \dot{\mathbf{c}} \dot{\mathbf{g}} = \) (RGT) / \( \dot{\mathbf{c}} \dot{\mathbf{g}} = \) (AT) \( 3 \times 5 \) are used in all transitive-dative events involving two primary third person arguments. Considering that D arguments are prototypically animate and that these dative forms appear to be based on (or identical to) the O-prominent transitive proclitics, we also find the agent case marker used in both Tewa languages in these constructions.
In Kiowa which lacks any valency alternations or case markers of comparable function, argument prominence must be indicated by other means, e.g. word order, topic and focus-marking particles.

(28) Kiowa (Adger et al 2009: 34, 36, 143)

a. \( kʰǫˑ te \) Háyciki \( t'ó kút \) k̞̄ k'ōˑ tɔ \( éd̄̄'γ hel... \)
   grandfather Haitsiki Wichita.1 pumpkin.1 3i>1>3s=give.PF.HSY
   The Wichitas gave a pumpkin to Grandfather Haitsiki, ...

b. \( hég̙ k̙̄ t̙ ap \) t̙̄ yba Ḥ̙ an \( et̙̄ m̙ c̙ ė \) céguy̙ do
   then meat-dry bare HAB 3i>P>3H=give.IPF.HSY dog.1
   The dogs would clean out their dried meat.

c. \( Johndeki ḥ̙̄ p̙ i̙ d̙ ál \) é̙̄ p̙̄ t̙ t̙ o
   John=deki ḥ̙̄ p̙ i̙ -d̙ ál=al é̙̄ p̙̄ t̙ t̙ o
   John=only fish-I=also 3s>3i=eat.IPF
   Only John also eats fish.

In (28)a we find a D argument initially, the A argument second, and an inanimate O argument third in the clause, but all preverbal. In (28)b it is the O argument that is clause-initial while the A argument falls post-verbally. Such variable word-order is used in lieu of any voice-like construction to indicate the discourse status of the different arguments. The sentence in (28)c shows us another method Kiowa uses, which is by attaching focus enclitics such as the =deki only and =al also seen here.

20.1.6 Reanalysis of Passive Morphology: Kiowa and Tewa

Even though the Tewa languages and Kiowa do not show the same voice alternations in terms of verb morphology, these languages do possess valence-reduction constructions cognate to the passive/inverse of Tiwa and Towa, expressed via a verbal suffix. The Kiowa construction was already mentioned in chapter 11.2, where the verb suffix is accompanied by an intransitive-dative proclitic in place of transitive indexation.
The agent is indexed as the D argument to indicate that the referent lacks control over the event or is highly affected by it, as shown in (29).

(29) Kiowa (Watkins 1984: 142-144)

a. k'ɔ́áttɔ̀ ɔ́øt̚kyá
   k'ɔ́áttɔ̀ ɔ̀ót-kyá
   dish.1 3l>>3s=drop-DTR.PF
   S/he dropped the dish (accidentally).

b. hó hegó gótʰétkyá
   hó hegó gó=tʰét-kyá
   Q now 3l>>2s=cut.open-DTR.PF
   Did you manage to get it cut open?

c. hágyá yáhe dáyt'ɔ̄
   hágyá yá=hé dáy-t'ɔ̄
   sometime P>>1s=remove.DTR.PF-FUT then.DS 2p.itr=go.imp
   If I can get things cleared away, let's go!

Because the agent is not dropping the dish intentionally in (29)a, it is the dish that is being construed as the S argument of a detransitivized predicate while the one doing the dropping is cast as an adversely affected D argument. Somewhat differently in (29)b, we find an agent who is actually attempting to do the action, but because of the difficulty involved, the second person argument is indexed as a D argument while the object being cut open is the S of detransitivized transitive predicate. Comparable semantics are seen in (29)c where the first person singular argument is indexed as D to indicate the effort it takes to get the things cleared away. As in Tiwa and Towa, the verb in this construction is marked for its reduction in valence and the proclitics are no longer transitively polyvalent.

The same valence-reduction suffix is used derivationally as well in Kiowa, to create a monovalent predicate semantically derived from a divalent predicate. In such detransitivized verbs, the derived predicate takes intransitive indexation. The single
argument of the detransitivized predicate is semantically comparable to the O argument of the divalent predicate from which the verb is derived.

(30) Kiowa (Watkins 1984: 159, 186)

a. \( k^\text{o} \text{bélte h̃n cólh} \text{ gyat}'\text{m} \text{ ̃} \cdot \)
\( k^\text{o} \text{bélte h̃n cólh} \text{ gyat}=\text{ }^\text{2} \text{m} \text{ ̃} \cdot \)

unfortunately NEG thus 1S>3P=do-NEG

*Unfortunately I didn’t do it that way.*

b. \( \text{pí }^\text{3} \text{ôy gya}^\text{2} \text{mgyá} \text{ ̃} \cdot \text{ an } \text{épí }^\text{3} \text{ô} \text{bep} \)
\( \text{pí}=\text{ôy gya}=\text{ }^\text{2} \text{m-gyá}=\text{ }^\text{2} \text{c} \cdot \text{ an } \text{é}=\text{pí }^\text{3} \text{ô} \text{bep} \)

food=at 3P.ITR=do-DTR.PF=when.DS HAB S>>1S=food-desire.IPF

*Whenever it gets to be mealtime, I get hungry.*


a. \( \text{dá gyadâmtc} \text{ }\)
\( \text{dá gya}=\text{dâm-tc} \cdot \)

OPT 1S>3S=tire.PF-FUT

*I WILL tire him.*

b. \( \text{h̃n } \text{bes} \text{ ̃} \text{gû-tc} \cdot \text{ gô } \text{ćmdâmdetc} \cdot \)
\( \text{h̃n } \text{be}=\text{s} \text{ ̃} \text{gû-tc} \cdot \text{ gô } \text{ć}=\text{dâmde-tc} \cdot \)

NEG 2S.RFL=set.S/D.NEG-FUT and.SS 2S.ITR=tire.DTR-FUT

*If you don’t sit down, you’ll be tired.*

The sentence in (30)a gives us a regular transitive use of the verb \( ^\text{2} \text{m do} \), here indexed with a first person singular A argument and a third person plural O argument. When the detransitive suffix is added to this verb, however, we get the meaning *become*, an intransitive predicate seen in (30)b. More transparent in translation, we have a transitive verb \( \text{dâm tire} \) in (31)a while its detransitivized counterpart in (31)b has the meaning *be(come) tired*.

Watkins (1984, 1996) discusses the probable cognate status of the Kiowa detransitivizing suffix and the passive suffixes of Tiwa and Towa. Thus even though the distribution and function may not be comparable between the Kiowa and the Tanoan constructions, we still find the formal modification in valence with the erstwhile O
argument indexed as (intransitive or intransitive-dative) S and the would be A argument either removed from the predication (in the derivational detransitive verbs in (30) and (31)) or expressed as a non-agentive argument (in the control/affectedness construction of (29)).

The probable Tewa cognate has not so far been pointed out as such, although the rough functional correspondence has been noted for the Arizona Tewa suffix at least. Both Tewa languages have a small set of derived stative constructions the use and formal distribution of which have not been well studied: a suffix -ŋ attached to the nominal-incorporated stem of the verb⁹, a compound construction with the copula muy· be, and finally, the one relevant here, a suffix -tí· (AT) and -di· (RGT). Kroskrity provides the following minimal triplet for these three stative constructions in Arizona Tewa, shown in (32), but does not identify the full functional contrasts amongst them.

(32) Arizona Tewa Stative Constructions (Kroskrity 1985: 310)

a. hę‘í tú nqec‘á·lamų́
   hę‘-í tű nq=c‘á·la-mų́
   that-BS meat 3S.ITR=cut-be.ST
   The meat is cut.

b. hę‘í tú nqec‘á·laŋ
   hę‘-í tű nq=c‘á·la-ŋ
   that-BS meat 3S.ITR=cut-ST
   The meat was/has been cut.

c. (nq·bí ciyódı) hę‘í tű nqec‘á·latí
   nq·bí ciyó=dí hę‘-í tű nq=c‘á·la-tí
   1S-POSS knife=INSTR that-BS meat 3S.ITR=cut-RES.ST
   The meat was/has been cut (with my knife).

The compound construction with the copula in (32)a does seem to express a static state of affairs, the current formal properties of the meat. The identical translation for (32)b and (32)c suggest the use of these constructions to express the outcome of an action, although

⁹ In Rio Grande Tewa, at least, most stems undergo other modifications in this construction as well.
more context would be needed to determine the full range of functions. Note that while no agent can be expressed with such stative constructions, the =di may appear marking an instrument, as ciyó knife in (32)c.

The less discussed Rio Grande Tewa suffix -di- is glossed by Speirs (1966) as "result", or in modern terminology, a resultative stative. This resultative stative function can be seen in the following examples in (33).


a. nqkhu’ri
   nq=khu=di
   3S.ITR=open.INC=RES.ST
   It opened.

b. po’ye biyû’qû cê’iweri heri yô’nû nqte’ri?
   po ye biy=yû’qû cê=¿wedi hedi yô’nû nq=te=di?
   three 2NS>3=remove.IMP seven=LOC and four 3S.ITR=need.INC=RES.ST.HAB
   seven minus three equals four.

c. i p’óséxʷà  ¿owé’ p’o’-ye-ge wé’, wâŋ yándiwé’ri
   i p’óséxʷà  ¿owé’ p’o’yege wé’ wâŋ yâŋ=¿iwé’ri
   DF Old.Man.Coyote when water-meet-LOC where INDF.I willow=where
   ikhe’cänguriho ip’oxʷahkê’, hewáŋbo
   i=khe’cängnu=di=ho i=p’oxʷa-kê³ hewáŋbo
   3S.RFL=angry-jump.PF=SB=already 3S.RFL=bank-get.S/D.PF but
   ³ump’o khâ’di ri  ¿owé’
   ³uŋ=p’o’-khâ’=di=di ¿owé’
   X>>3S=water-swallow.INC=RES.ST=SB when
   ithqnsuwák’u’¿iwé’ribo nqyókhá.
   i=thqṣ-súwá=k’u’¿iwé’ri=bo nq=yókhá
   3S.RFL=sun-warm-lay.S/D.PF=where=MIR 3S.ITR=go.to.sleep.PF

Along where the rivers join, Old Man Coyote grabbed hold of some willows and pulled himself out. But he had swallowed so much water that he lay down in the sun to get warm, and he went to sleep.

— A derived resultative stative may then inflect for semantically compatible aspects and moods: -di³ habitual resultative, -di i potential resultative.
The verb form in (33)a is derived from the transitive verb *huˑ open*, but this derived intransitive is used to express that a door (or other openable thing) stands open after having been opened by some unspecified force. It is the end result of an action\(^{11}\). In (33)b we find the habitual end result of the arithmetic operation also expressed with this detransitivized construction. In the narrative selection of (33)c, we have a clear chain of events: Coyote pulls himself out of the water after a tumultuous time in the river and he lies down to warm in the sun. However he is in the resulting state of having swallowed a bunch of water, expressed via this *-diˑ* construction.

That the Arizona Tewa *-tíˑ* suffix may convey a similar resultative meaning is suggested by the following textual examples in (34).

(34) Arizona Tewa (Kroskrity 1985: 190; 1993: 196)

a. *di kʰé hëyë nɛˑi nqmoˑwatĩ mí.\(^\text{Q probably ever this-BS 3S.ITR=finish-RES.ST-POT*}
I wonder if this will ever be finished.*

b. "*háˑdaq wëuhk*=nútĩ míå.\(^\text{why NEG=2S.ITR=stand.up.INC-RES.ST-POT=SB HSY 3>3S=tell.PF*}"
   *giba, óˑtúˑqŋ.\(^\text{giba  óˑtúˑqŋ*}
   *háˑdaq wë=qˑnútĩ =dí\(^\text{3S.ITR=stand.up.INC-RES.ST-POT=SB HSY 3>3S=tell.PF*}"
   *You can't help but land standing up," that's what he was told.*

The speaker of (34)a ponders if a school that is being built will ever end up in its final finished state, i.e. whether the unspecified builders will ever complete the building. In the story example of (34)b, some little birds are trying to convince Coyote that he can fly, that if he jumps, he will end up having set himself in a standing position. Thus in these examples, it is not just that the transitive event is expressed as a state, but rather it is a state that is reached through the course of an active event.

\(^{11}\) A door that is simply standing open with no opening event construed would be expressed as *nq=khuˑ-cå 3S.ITR=open.INC-stand.anchored.ST, It is open.*
Like in the Kiowa detransitivized constructions above, it seems to be always the patient-like argument that is expressed as the S of these Tewa derived statives, suggesting a relationship to the passive/inverse construction of Tiwa and Towa. In these resultative stative constructions, however, Tewa never seems to have case marking. Also, the Rio Grande Tewa suffix is added to the nominal-incorporated verb stem, as with other derived stative constructions, unlike the Tiwa and Towa passive/inverse. Nonetheless it does appear that the Tewa languages possess a morphosyntactic construction cognate to the marked voice construction of other Kiowa-Tanoan languages even if the function is quite distinct.

20.1.7 Reconstructing the Voice and Valence System

It is difficult to be certain what exactly to reconstruct to Proto-Kiowa-Tanoan, but we can develop a compelling picture of at least some of the system. The discussion and posited reconstruction of proclitics in chapters 0, 0, 0, and 19.2 suggest that the ancestral language did have a gap in its transitive and transitive-dative paradigms in those configurations expressing $3 > SAP$ and $3 > X > SAP$ respectively. The only two branches of the family to have proclitics expressing these functions, Tewa and Kiowa, do not seem to have cognate forms and the forms they do have appear to be innovations. We also see from the above discussion of this section that all of the Kiowa-Tanoan languages seem to possess cognate valence-reduction constructions. These constructions are used in two of the branches, Tiwa and Towa, to fill the gap in the pronominal indexation paradigms, but are used to unrelated purpose in the other two branches. Finally in three of the branches, Tewa, Tiwa, and Towa, we find an agent-marking case enclitic that attaches to a third
person A argument when a (would be) O or D argument is a speech act participant or when an O argument is more prominent than the A argument. However, the specific enclitic used in Tiwa (\(=\text{pa} \ (\text{Pl}) / =\text{ba} \ (\text{ST})\)) is not apparently cognate to the functionally comparable enclitic of Towa or of Tewa\(^{12}\), although the enclitics of the latter two branches may be cognate (\(=\text{ta} \_\text{e}\) and \(=\text{di}\) respectively). In Kiowa and Taos Tiwa, on the other hand, no such case marker is seen.

In discussion of exactly the issues of voice and valency, Watkins (1982, 1996) proposes that Proto-Kiowa-Tanoan possessed a general detransitivizing construction—which we see has, or may have, a reflex in every branch of the family—but that it was only co-opted for passive/inverse function in the Tiwa and Towa languages. That is, the voice alternation is suggested to be an innovation as a means of expressing prominent O and D arguments in those branches of the family, perhaps under influence from the English passive construction. This may have been motivated, under Watkins' proposed account, by a reanalysis of the dative proclitics (cf. the developments of Kiowa dative proclitics).

There are problematic issues with this proposal, however. For one, the proposal of contact-induced influence from English leading to the synchronic voice alternation patterns seems to me unlikely. English has only become dominant in the Pueblo area during the latter half of the 20\(^{th}\) century and does not show a comparable distribution of its passive as is found in Tiwa and Towa. While we might find some modern calquing

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\(^{12}\) The Tiwa agent/instrumental enclitic may be cognate with the possessive clitic of Tewa, \(=\text{bi}\). The sound correspondences work, although the functions are disparate. Considering that we find no other plausible cognate to the Tiwa instrumental enclitic or the Tewa possessive form, it is an avenue worth exploring.
between English and Tanoan voice constructions, there is no evidence of enough influence to produce the radical system we find in Tiwa and Towa.

Another issue is the proposal of a general detransitivizer being specialized to passive/inverse function in Tiwa and Towa\(^\text{13}\). While these two branches do show quite a number of similarities between their respective pronominal indexation systems, there does not appear to be much other evidence of potential shared innovations to suggest a subgrouping. That is, such an innovative use of a general detransitivizing construction would have to be an independent innovation in these two branches. Considering how comparable the voice constructions are in Tiwa and Towa, this seems highly improbable.

Moreover, while it is not unlikely that the detransitivizing morphological construction was polysemous in Proto-Kiowa-Tanoan—there is no reason to think it was used only to fill in the proposed gaps in the pronominal paradigms or to mark active discourse prominence—the question should be asked: why detransitivize? How is a detransitivizing construction actually used in a language? Considering that the reflex of the detransitivizing construction in all of the languages shows a derivational relationship between the O argument of the transitive and the S argument of the intransitive function (and not between the A and the S or a D and the S), it suggests that the Proto-Kiowa-Tanoan detransitivizing construction was fairly restrictive in what it could do.

I propose for my reconstruction that such a passive/inverse valence-reducing construction was used in Proto-Kiowa-Tanoan for \(3 \succ SAP\) and \(3 \succ X \succ SAP\) configurations as well as for O-prominent (and maybe D-prominent) \(3 \succ (X) \succ 3\) configurations. The verb

\(^{13}\) Bill Croft (p.c.) points to Haspelmath’s (1990) finding that resultatives tend to evolve into passive constructions. It may be worth investigating this as an origin for the passive/inverse construction in Kiowa-Tanoan
was marked and the prominent argument was indexed by an intransitive or intransitive-dative proclitic (depending on the construction). The A argument was not indexed. It probably took a case marker as well, considering the distribution of such markers across the languages\(^{14}\). This case enclitic was probably the same as that used to mark instruments, although whether this form was the ancestor of the Tiwa =\(b\omega\) (Ta) / =\(p\alpha\) (Pi) / =\(b\alpha\) (ST) or of the Towa =\(t\alpha\) and Tewa =\(d\i\) is presently uncertain. Thus, Picuris Tiwa, Southern Tiwa, and Towa conserve the original construction most closely. Taos Tiwa has lost the case marker while Tewa and Kiowa have innovated new pronominal proclitics to fill in the gaps where the voice construction was used, although Tewa still makes use of a case marker. The respective reflexes of the voice suffix on the verb in these two languages have been relegated to other detransitivizing functions.

**20.2 Passive or Inverse? …The Wrong Question**

The voice constructions described in the previous section—at least the obligatory passive seen in the Tanoan languages—have held the attention of linguists ever since they were first brought to light in the early 1980s with Allen (1978), Allen and Frantz (1983b), Allen and Gardiner (1981), *inter alia*, discussing Southern Tiwa. Kroskrity (1978a, 1985a) soon followed up on this study, presenting the Arizona Tewa facts (and the Rio Grande Tewa facts in comparison) in a well-circulated venue. Similar facts for Towa and Picuris Tiwa were explicitly pointed out in Hale (1972), Sprott (1992), and

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\(^{14}\) It is more likely that Taos Northern Tiwa simply lost its case marker as the passive/inverse construction has grammaticalized in its paradigmatic usage than that both Picuris Northern Tiwa and Southern Tiwa adopted the exact same morpheme to use as the agent marker. Bill Croft (p.c.) suggests the possibility that the use of the case marker may have been optional in the proto-language (or at least in Proto-Tiwa), becoming obligatory in Picuris and Southern Tiwa but dropping out of agent-marking function entirely in Taos Tiwa.

While such descriptions have added to the empirical evidence on the person-animacy hierarchy and external possession, both of which have been well studied since (cf. Aissen 1997, Silverstein 1976, Dixon 1979, 1994, J. Nichols 1992, Payne and Barshi 1999), they did also lead to a brief debate in the linguistics theoretical literature: should these Kiowa-Tanoan voice constructions be considered passive or inverse? Allen and Gardiner (1981, *inter alia*) and Kroskrity (1985a) call it a “passive” construction while Klaiman (1989, 1991, 1992, 1993) first raises the question of whether it should instead be analyzed as an instance of inverse voice, an analysis followed by Kroskrity (1990, 2010a) for Arizona Tewa. Zúñiga (2006) and Croft (2001) take a more typologically informed perspective and attempt to parse apart the functional and formal aspects of the kinds of alternations involved without attempting to pigeonhole real-world language-specific constructions into one category or the other.

Kroskrity (1985a) is the first to seriously debate a passive versus inverse analysis of the Kiowa-Tanoan voice construction, addressing the functions of Arizona Tewa patterns. In this early paper he calls the transitive $3\rightarrow SAP$ and $3\rightarrow 3$ constructions involving the case marker $=\text{di}$ a "semantic passive", which contrasts with the "agentless passive", his name for the stative constructions presented above. He explicitly argues against an inverse analysis since the Arizona Tewa facts are divergent from what is seen in Algonquian languages: there is no overt inverse morpheme, different pronominal indexation is used in different argument configurations, and Arizona Tewa permits two
arguments of equal animacy in transitive constructions. However, following the analysis of Klaiman (see below), Kroskrity appears to change his tune, or at least his nomenclature. Kroskrity (1990, 2010a) labels the transitive case-marked voice constructions "inverse" while the stative constructions are deemed "passive". However, he still recognizes that Arizona Tewa does not show a prototypical type even under an inverse voice analysis.

In a short series of articles and a book on grammatical voice, Klaiman (1989, 1991, 1992, 1993) argues for a clear differentiation between active-passive voice contrasts and direct-inverse voice contrasts. The primary distinction appears to be that the marked voice of the former, the passive, is characterized by detransitivization and functions to express discourse salience. In the latter the marked voice, the inverse, is still transitive and is based on what Klaiman calls "ontological salience", i.e. inherent features of the referent such as person and animacy. Under this rubric she analyzes the Tanoan languages as showing a direct-inverse voice system instead of an active-passive contrast, based on data from Arizona Tewa, Picuris Northern Tiwa, Southern Tiwa, and some little data from Towa. That they are not prototypical inverse languages, e.g. in showing oblique marked agents and not having clear direct-inverse marking morphology, is explained by their lack of conformity to the head-marking type and the complexity of their agreement morphology. That is, the more prototypically inverse Algonquian languages are fully head-marking languages while Kiowa-Tanoan languages are head-marking but show some dependent-marking features as well.

Her argument for Arizona Tewa might be compelling insofar as the language shows no clear formal indicators of detransitivization in the relevant construction.
Klaiman tries to support this by pointing out that Tewa has a different means of
detransitivizing verbs, cf. the resultative stative construction in the previous section. For
the Tiwa languages, she seems to be reaching a little too far in order to avoid a passive
analysis. Tiwa does have overt verbal morphology marking the putative inverse
construction and its indexation is akin to that found in intransitive predicates in the
construction. However, Klaiman argues that because the intransitive proclitics are almost
all identical to the transitive $X>3s$ proclitics, (except for the first person singular form),
the two sets of proclitics are not actually distinct and thus the inverse/passive
construction is not detransitivized. She argues the same for Towa, although she seems to
have misread Myers' (1970) pronominal paradigms because the transitive forms she gives
are incorrect. She also finds no alternative destransitivizing construction for Tiwa as she
does for Tewa, although that area of her argument is not as compelling anyway: there is
no reason a language could not have more than one valence-reducing construction.

Aside from the problems inherent in her argument whether Tanoan languages
show "passive" or "inverse" voice constructions, there is also simply the problem of how
she defines passive and inverse as categories themselves. That is, she does not clearly
address whether the onotological salience of the latter and the discourse salience of the
former could bear any relationship to each other. She also does not seem to have a clear
definition of contrasting transitivity (or of what transitivity might be under her analysis)
in order to state the transitivity status of the marked construction in Kiowa-Tanoan
languages. The next author explicitly takes Klaiman to task in his own analysis by
approaching the problem in a completely different way.
Zúñiga (2006) distinguishes passive and inverse by treating them as entirely different types of categories. Under his proposal, "passive" refers to a type of formal morphosyntactic voice construction involving a realignment of semantic roles and grammatical roles, while "inverse" is based in the deictic directionality of argument relations which appeals to some feature of the arguments themselves, e.g. person, animacy, focalization. A direct-inverse system may be formally realized in different ways, including through a passive construction, but is present as long as there is different treatment of prototypical argument configurations, e.g. $SAP \succ 3$, which are less marked (direct), and of non-prototypical argument configurations, e.g. $3 \succ SAP$, which are more marked (inverse). Under this framework, Zúñiga concludes that the Tiwa languages (at least Picuris Tiwa and Southern Tiwa) and Towa do have a passive-form inverse construction, pace Klaiman, while the Tewa languages make use more of what he calls a role-remapping inverse, somewhat similar to what is found in Algonquian languages. Tewa and Tiwa differ in their treatment of "local scenarios", i.e. $SAP \succ SAP$, with the former treating them as inverse and the latter as direct.

Zúñiga also takes a look at Kiowa, but finds it to be radically different than the Tanoan languages. Rather than any kind of direct-inverse system, Kiowa seems to show more sensitivity to the basic hierarchies ranking SAPs above third person and an intricate ranking of singular and non-singular A and D arguments than to grammatical roles.

There are questions left open in Zúñiga's account given the particulars of Kiowa-Tanoan morphosyntax and the limitation of data available to him. In particular the transitivity of the inverse construction of Tewa especially is not entirely apparent. Also, while he uses the languages to illustrate the range of formal realizations of direct-inverse
direction contrasts that may be present even within a single family, he does not seek to relate the systems to one another in any clear historical or typological fashion, other than through conforming to certain features of direct-inverse systems. His analysis does at least seem to be an improvement on Klaiman's insofar as he better distinguishes the formal and functional properties of direction and alignment systems that realize arguments.

There may be something to Zúñiga’s treatment, or at least in his use of terminology that differentiates the type of linguistic unit "inverse" refers to as opposed to "passive". A similar approach to voice constructions is also suggested by Croft (2001), whom Zúñiga does cite in the development of his ideas. As one of the case studies in support of his Radical Construction Grammar framework for morphosyntax, Croft dedicates a whole chapter to the problem of voice. Under this framework a direct-inverse voice system, represented prototypically by the contrast seen in Algonquian languages, and an active-passive voice system, represented prototypically by Indo-European languages such as English, are but two points in a continuum. Languages can (and do!) show all kinds of variation in between in their manifestation of argument configurations.

It should be noted that Croft is using the term "inverse" to refer to a formal construction, what Zúñiga terms "role remapping", and is not redefining the concept of voice and direction as is Zúñiga's thesis. Instead, Croft is concerned with showing that different argument configurations end up being expressed through a wide variety of formal constructions while also pointing out that there are implicational universals that can be posited over the form-function mapping. Under his framework, the voice-like constructions of Kiowa-Tanoan languages are fairly typical. Crosslinguistically it is the
case that $SAP>3$ configurations tend to be the less marked, $3>SAP$ configurations are the most marked, and $3>3$ and $SAP>SAP$ configurations fall somewhere in between and show variable behavior (Croft 2001: 318-319). This is exactly what is found in the modern Kiowa-Tanoan languages.

His model also takes into consideration paths of language change as a result of these markedness tendencies. Prototypical inverse voice constructions often evolve ultimately from prototypical passive constructions and those inverse constructions eventually may change into unmarked active/direct transitive clauses. Similarly passive constructions may evolve into direct ergative-absolutive case marking constructions. Again, we find exactly these developments in Kiowa-Tanoan under the reconstruction taken above. What was originally a prototypical passive construction (with detransitivization and an oblique-marked agent) has become grammaticalized as part of the paradigmatic expression of certain argument configurations. From there it has evolved into something between a prototypical inverse construction and a direct ergative case-marking system in the Tewa languages and something between an inverse and a direct/active construction in Taos Northern Tiwa. The developments of Kiowa neither fit nor go against the account that Croft gives. The language has developed direct/active constructions to fill in the $3>SAP$ gap from a different direction while the historical passive has taken up semantics not typically associated with basic argument patterns. This is not problematic from a Radical Construction Grammar point of view, but simply involves consideration of factors beyond transitivity and the person-animacy hierarchy.

Finally, Croft's approach means that we are not forced to pigeonhole the different Kiowa-Tanoan voice or voice-like constructions into one or another predetermined
category. They can, and do, show properties of both traditionally defined passive and inverse constructions, but ultimately just are what they are. What is more interesting than the label one gives them is the range of their uses and their path of development. As noted in chapter 5.3.11, I prefer to call the Tiwa and Towa constructions, at least, "passive" simply because the term "inverse" has a completely different use under present Kiowa-Tanoanist conventions. As long as such labels are recognized as being only labels, then we can call the constructions by whatever name is most convenient and get on with exploring their actual linguistic properties.

**20.3 Pronominal Indexation Patterns and the Hierarchy**

From the above reconstruction and discussion, we have a proposal that the person-animacy-topicality hierarchy was highly grammaticalized in Proto-Kiowa-Tanoan, realized in particular by what I am calling the Kiowa-Tanoan Passive construction. This construction was obligatorily used whenever an O or D argument was a SAP and the A argument was third person. It was used for reference tracking and organizing discourse prominence when both an A and O argument were third person, but it was never used when the A argument was a SAP and the O or D argument was third person or when both primary arguments were SAPs. Thus we probably find the following hierarchies in operation in Proto-Kiowa-Tanoan, just as they appear to be in operation in the daughter languages.
(35) Kiowa-Tanoan Hierarchies
   a. 1st, 2nd person > 3rd person
   b. Animate > Inanimate
   c. A, S(ITR) argument > D, O(TR) argument\(^{15}\)
   d. Discourse prominent > Discourse non-prominent

Within each of these hierarchies, the category on the left of the ">" is considered the more dominant over the category on the right. Categories separated by a comma "," are not ranked based on the above voice alternations.

If we find such semantic hierarchies having structural repercussions within the pronominal indexation system, it is worth considering whether we might find other traces of such categorical ranking in the well-grammaticalized proclitics reconstructed in chapters 0-0. That is, are there any formal patterns in the \(SAP > 3\), \(3 > 3\), and \(SAP > SAP\) proclitics that suggest particular relationships between different semantic categories?

It was already pointed out in the course of the reconstruction in chapter 0 and 0 that the *q*- we find in certain dative and transitive first person non-singular and second person singular proclitics may only occur when the non-SAP argument is prototypically inanimate. This *q*- is not found when the third person argument is explicitly (or often indexes) an animate referent. This could at first blush be interpreted as indicating that inanimate is more marked than animate, which is not what we would expect to find in the \(SAP > 3\) and \(X >> SAP\) configurations where this *q*- appears. However, whenever the *q*- does not occur with these first person and second person categories, we find some kind of

\(^{15}\) It is necessary to specify that the S argument is only high ranked when it refers to the intransitive (ITR) S argument, not necessarily the intransitive-dative S argument. Similarly, the ranking of O is based on the transitive (TR) O argument, not on the transitive-dative O argument.
reflex of the inverse number category, i.e. that category which expresses animate plural\textsuperscript{16}. Thus, as was already proposed, it may be that the *q- initial proclitics represents an older stratum of indexation, but that the *q- has been lost in forms that often express animate categories because of merger with the animate inverse category. That is, it may actually reflect the \textit{Animate > Inanimate} ranking where the explicitly animate categorical form has usurped the form that was ambiguous between animate and inanimate.

Another pattern formally similar to the above, if distributionally quite different, is the initial consonant *t- we find in first person singular forms. Specifically, we find it in transitive 1S>3 and transitive-dative 1S>X>3, but never in 1S>(X>)2, 1S.I TR, or X>(X)>1S dative proclitics. In other words, we only find this *t- with a first person singular A argument acting on a third person O or D argument, but never with a first person singular S, O, or D argument. Such a distribution suggests a possible ergative-like alignment for 1S>3 configurations during the period when the pronominal proclitics first became grammaticalized. Such an ergative or ergative-like alignment is exactly what we see developing anew in the family as a result of the obligatory passive voice usage, albeit in very different argument configurations. Curiously a similar pattern is not clearly observable in 2>3 or 3>3 configurations, which could suggest some other motivation for the distribution of this *t- we find. Considering that the typologically more common situation in split ergative systems is for SAP>3 configurations to show a nominative-accusative pattern while ergative-absolutive patterns tend to be relegated to 3>3 and maybe 3>SAP configurations (cf. Croft 2001, ch. 4, 9), as we see developing with the

\textsuperscript{16} The exceptions to this are in the intransitive 2s *a= and the identical transitive 2s>3s *a=. The non-markedness of singular number may have some influence here. Admittedly, second person singular may not be following the same motivation as first person non-singular and indeed the second person singular *q- we find may not even be the same as that which we find with first person dual and plural.
case marking involved in the Kiowa-Tanoan Passive construction, it does suggest the *t-
may have some other historical significance. It is still worth pointing out this pattern for
now, however, insofar as it may lead to future discoveries.

We do also find a clear ranking in the dative paradigms, where the D argument
appears to be more dominant than the S or O argument. This dominance is suggested by
the person and number distinctions made in the dative that are not so made in the S or O
argument. Remember that the number distinctions in the latter are marked by coda affixes
separable from the main pronominal proclitic. Also, the voice alternations in transitive-
dative constructions only seem to take into consideration the person and animacy of the A
and D arguments, ignoring the O completely. This suggests that the non-dative (and non-
A) argument is always considered lower than the other arguments. Indeed, it may be
worth categorizing intransitive-dative S and transitive-dative O as "secondary" arguments
as opposed to transitive O and dative D, which are "primary" arguments following
Dryer's (1986) classification of primary and secondary objects17. Such a ranking is
probably motivated by the tendency for such secondary arguments to express third person
inanimate referents while A and D arguments overwhelmingly express animate referents.
This ranking also suggests a reconsideration in the intransitive-dative of how to treat the
dative argument: rather than being an added argument, it may be better considered the
primary role. This would suggest it is the dative and not the intransitive-dative S
argument that is used as the discourse pivot, which may affect the realization of complex
sentence constructions involving reference tracking, e.g. switch-reference.

17 Dryer does not consider constructions equivalent to the intransitive-dative found in Kiowa-Tanoan. He
only considers arguments traditionally termed "objects" (of transitive and transitive-dative-like
constructions).
Finally, there is some indication that second person should be ranked above first person when it comes to $SAP>SAP$ configurations. In $1>2$ and $1>X>2$ configurations, for instance, the second person argument makes the full three-way number distinction (with no number contrasts in the first person argument). However, in $2>I$ and $2>X>I$ configurations, neither argument makes any number distinctions, except maybe a two-way contrast between transitive $2>1S$ and $2>1NS$. But moreover, the forms of the proclitics expressing these configurations suggest greater prominence of the second person argument. In the $I>(X>)2$ forms, the non-singular second person proclitics are identical to those found in the second person intransitive and $2>3$ transitive, i.e. $*\text{bi}=I>(X>)2D$ and $*\text{bi}=I>(X>)2P$, and thus appears to have no overt indexation of the first person argument at all. The transitive $I>2S$ proclitic does not clearly give any clear indication of one person prominent over the other, but the transitive-dative $I>X>2S$ form is reconstructed as $*\text{qq}=I>(X>)2P$, identical to the intransitive-dative $X>>2S$ proclitic. That is, it seems to index the second person argument, but not the first person. The composition of $2>(X>)I$ proclitics are also not clear, but it may very well be significant that they begin with an initial *b-, the same segment found on proclitics indexing non-singular second person, suggesting again that second person outranks first person.

Thinking back on the synchronic situation of the modern Kiowa-Tanoan languages, the reader may find other possible rankings that are not found in the present reconstruction of the proto-language. For example, Zúñiga (2006: 201-202) points out that the D argument is sometimes ranked above the A argument in the transitive-dative paradigm in Kiowa. Whenever the D argument is non-singular, the A argument is unspecified for person and number, even when the D is third person and the A is a speech
act participant. However, the developments in Kiowa that were argued in chapter 0 to be innovations have brought intransitive-dative and transitive proclitics into transitive-dative usage and have perhaps brought second person forms into third person usage, both of which could easily lead to new patterns of argument ranking. Such innovations would be interesting to explore in the light of the present reconstruction, but I will leave that to future study.
Part IV: Conclusion
21 Conclusion

The preceding chapters represent one stage of an intended long-term research program into the synchronic and diachronic grammatical systems of the Kiowa-Tanoan languages. Only so much could be accomplished for the purposes of a doctoral dissertation. Although topics may have been covered intensively, not all were addressed comprehensively. The studies laid out above thus set the stage for future work on this remarkable language family.

A gross overview summary of the dissertation is provided below in section 21.1 for each of the three parts of the study. Following this summary, section 21.2 discusses the implications for this historical analysis in evaluating the internal structure of the language family. Although I find it premature to definitively propose a comprehensive family tree for Kiowa-Tanoan, this discussion should illuminate the data so far apparent which may point to innovations shared between branches of the family. Finally, section 21.3 concludes this chapter and dissertation with proposals for future directions of research into Kiowa-Tanoan.

21.1 Summary of Preceding Chapters

21.1.1 Part I: Background information

Part I provided the background for linguistic research of Kiowa-Tanoan. In particular, this section presented an updated and thorough review of the literature that significantly describes, analyzes, or represents one or more language of the family (chapter 3). The goal of that section was to be comprehensive up to the time of writing, although of course there may be some number of extant archival or published items here
and there that were not uncovered. A review of the historical, archaeological, ethnological, and wider anthropological literature was not attempted, although the historical background of the communities in chapter 2 highlighted some of the major pieces. Such literature is extremely important, though, in piecing together the prehistory of the Kiowa-Tanoan peoples to be correlated with that prehistory suggested by the linguistic data.

Also within Part I, chapter 5 provided a general overview of phonological and grammatical features that are to be found across the Kiowa-Tanoan language family. While not introducing anything new to anyone already familiar with the family, it may serve as a helpful review to the Kiowa-Tanoan initiate, hitting on some of the most salient structural features. Such an overview is otherwise only to be found in Mithun (1999: 441-447), which covers (and exemplifies) fewer features and only discusses Kiowa in any detail. Comparable surveys providing further detail on the two major topics of analysis of this dissertation—phonology and the pronominal indexation—were given at the heads of Part II (chapter 6) and Part III (chapter 11) respectively. On top of these synchronic descriptions, chapters 7 and 12 review those previous analyses of phonology and pronominal proclitics in comparative and/or historical perspective.

21.1.2 Part II: Proto-Kiowa-Tanoan Phonology

Chapters 8-10 presented proposals working towards a reconstruction of Proto-Kiowa-Tanoan phonology. Three major categories of sounds were covered: vowels (chapter 8), stem-initial consonants (chapter 9), and stem-final consonants (chapter 10). The analysis of this dissertation posits a three-vowel system with an oral-nasal contrast
sharply distinctive from the 5-6 vowel systems of the modern languages. Simplifying the vowel inventory like this required a concomitant elaboration in the consonant inventory, most notably adding a distinction between front and back velars and labialized velars. Curiously the stem-initial consonant inventory ends up being characterized by very few continuant sounds: virtually no fricatives and only a small handful of sonorants. Perhaps less controversially, the inventory of stem-final consonants is also elaborated, evidence pointing to a continuous reduction in the stem-final inventory as the syllable structure of the family has simplified.

The investigation into the diachronic phonology of Kiowa-Tanoan in Part II was highly exploratory. Contentious as the proposed reconstruction might be, this in itself might be considered far less interesting than the search for new sets of cognates, new sound correspondences, and the proposals of the kinds of sound changes that must have transpired within the family. In organizing the linguistic data and positing such correspondences and changes, the door is opened to challenges and inquiry that will hopefully drive forward discussion of Kiowa-Tanoan historical phonology in contrast to the long stagnancy that the field has suffered even after Hale’s (1967) groundbreaking work.

21.1.3 Part III: Proto-Kiowa-Tanoan Pronominal Indexation

Part III argued for a reconstruction of the pronominal indexation proclitic system of Proto-Kiowa-Tanoan. As in the modern languages, the proto-language was analyzed as having five functionally defined paradigms: intransitive, transitive, reflexive, intransitive-dative, and transitive-dative. The form of the reflexive remains highly suspect since the
languages have divergent representations, but for the other paradigms, it was possible to suggest reasonable reconstructions of the systems. The paradigmatic system reconstructed was quite regular in comparison to those found in the modern languages.

The biggest challenge within the pronominal indexation system is determining which forms should even be considered cognate, so great are the differences between the languages’ systems (chapters 13-18). It was only following extended discussion and argumentation of possible cognate status that regular sound correspondences could be considered and formal reconstructions proposed (chapter 19). Perhaps of greatest interest within the changes apparent in the pronominal systems are the functional shifts of forms between different grammatical persons and numbers, particularly between second and third person. Also of interest are the analogical developments influencing the shapes of the paradigms. This is a domain where further study will undoubtedly uncover a still richer picture of changes.

In addition to the pronominal proclitics in and of themselves, Part III also considered the historical voice system grammaticalized to reflect different configurations involving a person-animacy-topicality hierarchy (chapter 20). It was argued that the same kind of voice system found in the Tiwa languages and Towa was at play in Proto-Kiowa-Tanoan with Kiowa and Tewa undergoing later innovations that reanalyzed the use of voice alternations.

The pronominal indexation system of Kiowa-Tanoan is one of the most daunting aspects of the language family in both synchronic and diachronic perspective. The paradigms within the modern languages, let alone comparatively, are so extensive as to dissuade researchers from analyzing the system holistically as a casual exercise. My hope
in having undertaken this endeavor here is to provide some kind of organization to the vast array of forms so that future research may more succinctly identify the problematic components and approach the areas of greater interest with a clearer understanding of the overall system.

21.2 Internal Structure of the Kiowa-Tanoan Language Family

In the course of analyzing the comparative Kiowa-Tanoan data, the seven modern languages were treated on par with one another, different degrees of relationship not being distinguished. While it is relatively uncontroversial that the two Tewa languages and the three Tiwa languages each form a subgroup, the degree of differentiation among the four primary branches—Kiowa, Tewa, Tiwa, and Towa—cannot be assumed. Lexicostatistical studies have posited that Tewa and Tiwa may form a subgroup as opposed to the others (Davis 1959, Hale and Harris 1979) and these same studies have also suggested that the Tanoan languages form a subgroup in contrast with Kiowa (see also Watkins 1977). However, groupings on the basis of shared innovation in accordance with the traditions of the linguistic comparative method have yet to be seriously posited in support of this tree structure.

In this section I wish to give some discussion to the matter of internal subgrouping and possible shared innovations on the basis of the reconstructions proposed in this dissertation and on the previous reconstruction of Hale (1967). I do not assert any particular classification to the family—a definitive answer remains elusive at present—but I will point out a few shared features of the different languages that could be taken to be shared innovations as our understanding of the historical change within the family.
becomes more secure. To this end I will give brief consideration to almost all possible
groupings among the four branches with comment upon the strength of the groupings.

Before delving into the classification among the four primary branches in section
21.2.2, I will first elaborate on the basis for considering Arizona Tewa to be separate
from the dialect cluster of Rio Grande Tewa and give discussion to the relationships
among the three Tiwa languages in section 21.2.1. Because of the complex prehistory of
the Southwest—and the further obfuscation of linguistic associations caused by the
period of the Pueblo Revolt—these relationships are not necessarily transparent from the
archaeological and historical records. While I have opted not to get into the internal
reconstruction of the individual branches of Kiowa-Tanoan (as described in chapter
8.1.3), I will here provide some justification at least for the linguistic differentiation
among the Tewa and Tiwa languages.

21.2.1 Internal Structure of the Tewa and Tiwa branches

The focus of this dissertation has been on the older relationships amongst the four
primary branches of Kiowa-Tanoan. Thus, there has not been as much explicit
representation of the internal relationships among the languages and dialects of any given
branch. Such consideration is moot for Kiowa and Towa since each of these branches
consists of only a single language with no significant dialect differences defined within
the documented language period. The Tewa and Tiwa branches, on the other hand,
consist of two and three distinct languages respectively, some of which also include
notable dialect differentiation (i.e. Rio Grande Tewa and Southern Tiwa), so it is
ultimately necessary to determine the internal relationships among these varieties. This
task is fortunately more straightforward in many ways than the relationships among the
four primary branches of Kiowa-Tanoan.

21.2.1.1 Tewa Languages

There are only two Tewa languages, as defined in this dissertation, so there is no
question of relative internal relatedness between Rio Grande Tewa and Arizona Tewa.
Complications arise, however, when the dialect diversity of Rio Grande Tewa is
considered. At this juncture, not enough information is available from the five surviving
dialects of Tewa in New Mexico to ascertain any shared innovations among them. Other
factors, both prehistoric and modern, such as intermarriage, the merger of formerly
distinct Tewa communities as villages were abandoned in the post-contact period, as well
as regular contact between geographically proximal villages may render the recovery of
any treelike family structure internal to Rio Grande Tewa impossible. On the other hand,
it could be inquired whether Arizona Tewa should be considered within the Rio Grande
Tewa dialect complex or external to it.

The fact that I treat Arizona Tewa as a distinct language, unlike any of the
varieties of Rio Grande Tewa, already indicates my analysis. Arizona Tewa shows a
number of features distinct from any of the Rio Grande Tewa dialects, features which I
interpret as conservative. There is no indication in the historical records of significant
enough inter-Pueblo interaction and dialect leveling to explain the loss of these features
across the board in the New Mexico Tewa varieties as a post-contact feature. That is, the
best explanation for why Arizona Tewa shows these features while no Rio Grande Tewa
variety does is that Arizona Tewa descends from a variety of Tewa that had become
distinct before the differentiation among the dialects of Rio Grande Tewa.

One of the major differences between Arizona Tewa and all of the varieties of
Rio Grande Tewa is that only the former retains the stem-final consonant realized as /l/.
Comparative evidence from outside of the Tewa branch (chapter 10.2.4) suggests this
Arizona Tewa /l/ descends from a PKT segment\(^1\), but no Rio Grande Tewa dialect shows
any reflex. Since this kind of consonant loss is not likely to have happened in every RGT
dialect without more significant inter-Pueblo linguistic contact than we have evidence
for, this feature in particular suggests that Arizona Tewa and Rio Grande Tewa became
distinct early on.

Another distinguishing feature between the two Tewa languages is the articulation
of the stem-initial consonants realized as palatalized velar stops in Arizona Tewa and
postalveolar affricates and a fricative in all Rio Grande Tewa dialects. In terms of
probable direction of change, the Arizona Tewa form appears to be the more
conservative. While the spirantization of such stops could have occurred independently in
the different Rio Grande Tewa dialects—spirantization being a common development
among palatalized stops—it is not as clear in such a scenario that every dialect would
have arrived at the same postalveolar articulations /č, č’, š/. Thus, again the simpler
scenario is that Arizona Tewa had already begun its independent development before the
differentiation of the modern Rio Grande Tewa dialects.

Two other major distinctions between Rio Grande Tewa and Arizona Tewa are
not as readily conclusive of the chronology of their differentiation. One is the realization

\(^1\) Kroskrity (1980/1982) tentatively posits that this Arizona Tewa /l/ is a feature borrowed from Hopi.
Internal comparative Kiowa-Tanoan evidence suggests otherwise.
of the aspirated stop series as stops in Arizona Tewa, but a mix of stop and fricative realizations in different Rio Grande Tewa dialects. Given that the major realization of this series is as fricatives in Santa Clara Tewa and as stops in San Juan Tewa, Ortman (2012) concludes that Arizona Tewa may actually be more closely related to San Juan, Santa Clara having split off first². This ignores the fact that some San Juan speakers do sometimes pronounce this series as fricatives, as do speakers of Nambé Tewa. Tesuque and San Ildefonso Tewa speakers, however, regularly articulate these consonants as aspirated stops. This analysis also does not consider that a similar spirantization process has been active in the Tiwa languages, already ran to completion in Towa, and is highly common typologically. This means that the aspirated stop versus fricative pronunciation does not provide a reliable diagnostic for the relative relationships among the Tewa varieties. However, the fact that Arizona Tewa shows the stop articulation does fit with its tendency towards conservativeness.

The other major regular phonological distinction is the nasalization of voiced stops in Arizona Tewa. While Rio Grande Tewa shows the complementary distribution of voiced and nasal stops before oral and nasal vowels respectively, Arizona Tewa has almost no word-initial voiced oral stops (except in a small number of grammaticalized morphemes and in some borrowings). In other words, Arizona Tewa has nasal stops regularly corresponding to oral stops in all Rio Grande Tewa dialects. Given comparative evidence from other non-Tewa cognates, Arizona Tewa appears to be the innovator here. Since this difference may have developed at any time following the separation of Arizona

² Ortman did not apparently have data available for San Ildefonso, Nambé, or Tesuque Tewa. It is unfortunate that he does not even give consideration to this lack in his study.
Tewa and Rio Grande varieties, it does not provide any affirmative evidence of how Arizona Tewa might fit into the larger Tewa picture.

In short Arizona Tewa definitely appears to be external to the Rio Grande Tewa dialect cluster. It is generally believed that the Tewa on the Hopi reservation descend primarily from the Southern Tewa (Tano) who had lived in the Pueblos of the Galisteo Basin up until the time of the Pueblo Revolts. The linguistic facts are in accordance with this belief, although since we have no documentation of the Tano language, it is not entailed that Arizona Tewa descends from Tano. Further comparison of the suffixal morphology of the Rio Grande Tewa and Arizona Tewa would reveal even more differences. Close as the languages may be, it is still best to consider them as different languages while the varieties of Tewa in New Mexico can fairly well be classified as dialects of a single language for most intents and purposes.

21.2.1.2 Tiwa Languages

The Tiwa languages appear to be only slightly more diverse than the Tewa languages in terms of number of differences. However, Tiwa presents something more of a challenge insofar as there are three varieties that could be considered separate languages instead of just two. That is, despite the geographical proximity of Taos and Picuris and the tradition of referring to them both as “Northern Tiwa”—as well as strong a strong suggestion in archaeological analysis that the populations of Taos and Picuris Pueblos (but not of the Southern Tiwa Pueblos) descend from the Pot Creek population—it has not been demonstrated on linguistic grounds that Taos and Picuris are

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3 I have not thoroughly investigated the archaeological literature regarding the Pot Creek Pueblo ruins. The usual interpretation does seem to be that this Pueblo was one of, if not the only, points of divergence for the
more closely related to each other than either is to the Southern Tiwa dialects. We must therefore consider whether there is phonological or morphological evidence supporting a primary Northern Tiwa-Southern Tiwa divide. There are a number of points on which two out of three Tiwa languages appear to show cognate structures, although many of these do not actually prove an internal structure for the languages.

The phonemic diphthongs distinguish the Tiwa languages from the other three branches of Kiowa-Tanoan. However, this statement glosses over the fact that said diphthongs are only found in Taos Tiwa and Southern Tiwa. These diphthongs are cognate to monophthongs in Picuris Tiwa: Southern Tiwa /ia, ia, oa, iɛ, iə/ respectively correspond to Taos Tiwa /ia, iɔ, uɔ, iɛ, ɨ/ and Picuris Tiwa /i, i, u, ɨ, ə/. Conversely, the one diphthong /ia/ of Picuris Tiwa is cognate to a monophthong in the other two languages: low front vowel /a/ in Taos Tiwa and mid front vowel /e/ in Southern Tiwa. This distribution indicates either that diphthongs are an original feature of the Tiwa branch, Picuris having innovated the monophthongal articulations, or that Taos and Southern Tiwa form a grouping as opposed to Picuris Tiwa. I have yet to identify any strong motivation for the latter analysis, therefore I assume the former in chapter 8, reconstructing the diphthongs to Proto-Tiwa. These vowels then underwent monophthongization within Picuris Tiwa. The Picuris diphthong /ia/ may be a conservative segment, the cognate Taos and Southern Tiwa being innovations, perhaps independent given the different qualities in these languages. In any case under this
analysis the lack of corresponding diphthongs in Picuris provide no affirmative evidence for subgrouping among the three languages.

There is one correspondence among the diphthongs that suggest a Taos-Picuris pairing as opposed to Southern Tiwa. Southern Tiwa possesses a nasal central diphthong /ɨ̨ą/ that occurs in a small number of lexical stems. This corresponds to a low monophthong /ɔ̨/ in Taos Tiwa and /ą/ in Picuris Tiwa. Correspondences in the other branches of the family suggest that the Southern Tiwa diphthong is the more conservative vowel in Tiwa, the higher central portion of the diphthong reflecting original labialization of the preceding consonant under my analysis in chapter 8.7. Given the almost identical low vowel reflexes in Taos and Picuris with no retention of labialization, it is possible that the monophthongization is in fact a shared innovation.

The realization of historically voiced stops also provides (weak) evidence for a Taos-Picuris pairing. In both of these northern languages, word-initial voiced stops in indigenous lexical items have become nasal stops. The exceptions are a small number of lexemes with historical initial */d/ realized as /l/ in both languages. Taos retains initial voiced stops only in a small number of highly grammaticalized morphemes which probably tend to cliticize to adjacent elements. The cognates to these in Picuris Tiwa, meanwhile, are realized with voiceless unaspirated stops. Southern Tiwa, on the other hand, largely retains voiced stops in all contexts except preceding nasal vowels. It is possible that areal influence or direct contact led to comparable developments of voiced stops in Taos and Picuris Tiwa, cf. the nasalization of all voiced stops in Arizona Tewa, but not Rio Grande Tewa. However, the nasalization of the stops in concert with the /l/
realization of */d/ in a few lexical items does suggest that we might have a shared innovation supporting the Northern Tiwa subgroup.

Related to the issue of stops, within the pronominal proclitics of Part III, Taos and Picuris Tiwa show a voiceless bilabial */p/ in certain forms corresponding to */b/ in Southern Tiwa. The consonant is reconstructed as a voiceless stop */p/ in chapter 19, indicating that Southern Tiwa is the innovator. As such, this correspondence does not provide any evidence for a particular subgrouping.

A grouping of Picuris and Southern Tiwa as opposed to Taos Tiwa is suggested by one phonological feature and a couple of morphosyntactic features. The palatal glide */y/ of Taos Tiwa corresponds to a voiceless affricate in both Picuris and Southern Tiwa. This affricate is overwhelmingly post-alveolar */č/ in Southern Tiwa, but varies between alveolar */c/ and post-alveolar */č/ in Picuris Tiwa. Although this segment is ultimately reconstructed as a stop */gʲ/ in Proto-Kiowa-Tanoan, it had probably become a glide */y/ by the Proto-Tiwa stage, given typological tendencies in glide-obstruent changes. Thus, Taos is the conservative party here and Picuris and Southern Tiwa appear to have innovated the affricate articulation. The question is whether this is a shared innovation or independent developments.

The almost identical realization as a voiceless affricate would suggest the innovation is shared. However, as noted in footnote 4, this development led to a merger

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4 See comments to immediately follow. The affrication of the Proto-Tiwa palatal glide */y/ in Picuris leads to a merger with the affricate descended from Proto-Tiwa */č/. Both seem to be pronounced as [c ~ č] in Picuris Tiwa. Harben-Trager (1968, 1971a) and Zaharlick (1977) both suggest that the alternation in the pronunciation of the affricate is partly phonologically conditioned by the adjacent environment and partly a free variation. It may be worth revisiting the distribution of these allophones of the affricate to see if there is any correlation with historical descent from */y/ or */č/.

5 A palatal glide may evolve from certain obstruents, e.g. from a velar stop, but glides appear never to derive from an affricate. It is quite common for affricates to derive from glides, on the other hand.
with the already existing affricate in Picuris Tiwa. In Southern Tiwa, on the other hand, the historical affricate */c/ lenited to a post-alveolar fricative /š/, keeping it distinct from the historical glide. If the affrication of the glide were an innovation shared between Picuris and Southern Tiwa, we would need to find an explanation for the different developments of the historical affricate. If the affricate from */y/ had simply affricated to become identical with the affricate from */c/ (i.e. a merger), then Southern Tiwa speakers could not have regularly picked out reflexes of */c/ to change them to a fricative /š/. If the reflex of */c/ had already changed to a fricative in a common ancestor to Picuris and Southern Tiwa before */y/ affricated—thus keeping them distinct segments—then we would have to posit that the fricative reversed its development back into an affricate in Picuris Tiwa, an odd scenario to propose.

Alternatively, it may be that the reflex of */c/ was an affricate of certain pronunciation, e.g. [c], while the glide */y/ developed into a distinct affricate, e.g. *[č] or voiced *[j]. The two affricates later merged in Picuris Tiwa while the descendent of */c/ evolved into Southern Tiwa /š/. It should be noted, however, that we find the same semi-free alveolar/post-alveolar allophones of the affricate /c/ in Taos Tiwa as we do in Picuris Tiwa, suggesting this may have been a shared feature at some point and that there was never an alveolar/post-alveolar contrast in Tiwa affricates. This uncertainty in the path of development of these phonemes also makes it uncertain whether the affrication of Proto-Tiwa */y/ can be considered a shared innovation between Picuris and Southern Tiwa.

Picuris Tiwa and Southern Tiwa also share a morphosyntactic feature: they both mark the agent of a passive construction with a cognate enclitic: PI -pa, ST -ba. Taos Tiwa, on the other hand, requires no such case marker (although it does have a
postposition cognate with that case marker: TA -bo). Under the proposal of chapter 2020, Taos Tiwa simply innovated by losing the historically obligatory case marker. Under other analyses, however, the case enclitic could be interpreted as a shared innovation of Picuris and Southern Tiwa.

A more careful study of the lexicon and grammatical features would be required to fully clarify the internal structure of Tiwa. There is at least a weak suggestion in the above that Taos and Picuris Tiwa do indeed form a Northern Tiwa subgroup, the analysis that I think is the more likely. An alternative classification should not be ruled out prematurely, however.

21.2.2 Classification of the four primary branches

Neither under Hale’s (1967) reconstruction of the family nor under the present analysis is any particular classification of Kiowa-Tanoan immediately apparent. That is, there are not strongly compelling instances of shared innovations between any of the four branches to motivate one subgrouping over another. However, there are at least certain shared features which may eventually prove to be shared innovations if enough other disambiguating evidence can be brought to bear. Watkins (1977) and Sutton (2009) have already discussed a few of these similar features, the most compelling being the nasalization of voiced stops before nasal vowels in the Tanoan languages, but not in Kiowa. This will be further discussed below alongside other features that are of particular note.

The two most regularly asserted classifications in the literature (whether considered implicitly or explicitly) are a) the grouping of Tewa, Tiwa, and Towa as
“Tanoan” in contrast to Kiowa, and b) the grouping of Tewa and Tiwa. There is something to these classifications: it is perhaps easier to spot more potential cognates between Tewa and Tiwa than between any other pairs of branches and perhaps somewhat easier to make connections between Towa and the former two than between Kiowa and any of the others. Moreover, the geographic proximity and shared Pueblo cultural affiliation of the three Tanoan branches suggest greater historical closeness to each other than any of them might have to Kiowa.

None of the above entails that the classification is correct, however. As noted by Kiowa-Tanoanists by the end of the 1970s, Kiowa is not so linguistically divergent from the others as the geographic and cultural differentiation might suggest. Also, getting down to the details of the phonology, morphosyntax, and lexicon, Tewa and Tiwa seem no closer to each other than to either Towa or Kiowa. As remarked above, any common features that could be interpreted as shared innovations are not so apparent as to render any given classification obvious. While further study of phonological and grammatical changes may reveal more of connections, it also seems probable that the break-up of Proto-Kiowa-Tanoan into its four primary descendant branches may have been rapid enough that any shared innovations are relatively minute and the four branches are best considered as coordinate. Time and further research will tell, but I hope the present discussion—and the above dissertation—will provide some data and stimulus towards answering the question of classification.

The following subsections will give short consideration to each of the logically possible binary groupings. The survey will begin with a discussion of Kiowa versus the Tanoan grouping (section 21.2.2.1) and the persistent Tewa-Tiwa grouping (section
21.2.2.2) before advancing through the other possibilities which have not previously been given serious study: Tiwa-Towa (section 21.2.2.3), Kiowa-Tiwa (section 21.2.2.4), Kiowa-Towa (section 21.2.2.5), Tewa-Towa (section 21.2.2.6), and Kiowa-Tewa (section 21.2.2.7).

21.2.2.1 Kiowa vs. Tanoan

It was mentioned in chapter 1 that the hyphenated name of the family “Kiowa-Tanoan” is merely an accident of history based on the geographic and cultural differences of the Plains Kiowa and Pueblo Tanoan groups and on the late recognition of the relationship between them. It does not necessarily mean that the name is equally valid from the point of view of linguistic genetic classification. The very separation of the two groups suggest that Kiowa is the greatest linguistic outlier as well, but it is not at all impossible that the Kiowa made the move into the Plains from the probable Colorado Plateau homeland after the differentiation of all four branches of the family. Under the latter scenario, Kiowa could form a subgroup with any one of the other branches. In fact, there is not much specific evidence so far to suggest a primary split between Kiowa and the Tanoan groups aside from a relatively greater difficulty in identifying transparent cognates. The latter is clearly due to changes in sounds and semantics, but the majority of those changes appear to be Kiowa-internal rather than being shared among the Tanoan branches and are therefore ambiguous with respect to classification.

The main piece of evidence that has been brought to bear to date is the nasalization of voiced stops preceding nasal vowels in Tanoan. Such an assimilation process has not applied generally in the Kiowa lexicon, although examples of it can be
found in grammaticalized elements such as the pronominal proclitics (cf. chapter 19.1.1). This evidence is undermined by certain observations, however. Bereznak (1995) points out that Tanoan is the one group of languages in the Southwest that appears to have a distinct contrast between voiced, voiceless (aspirated vs. unaspirated), and nasal stops. It could therefore be the case that language contact and areal pressures have motivated an incipient merger of voiced and nasal stops that Kiowa escaped due to its geographic separation. Nasalization of voiced stops would therefore not necessarily be a shared innovation.

This evidence is further undermined by another, stronger possibility that begins to arise with the observations of this dissertation research. Although I conservatively continue the tradition of reconstructing a contrast between voiced and nasal stops to Proto-Kiowa-Tanoan, the limited data sets and discussion in sections 9.2.2 and 9.3.2 suggest that these sounds may not have been contrastive originally at all, but rather just allophones of one another. This possibility was also suggested by Ian Maddieson (p.c.) and is supported by areal trends in the Americas (cf. Greenberg 1987). If the oral and nasal pronunciations were allophonic and phonologically predictable in PKT, as they largely still seem to be among the Tanoan languages, then this feature would no longer constitute a shared innovation. Instead, it would appear that Kiowa was independently innovative in developing greater contrastiveness between oral and nasal stops.

Watkins (1977) also points out that the PKT aspirated stops */pʰ, tʰ, kʰ, kʷʰ/ reconstructed by Hale (1967) have undergone spirantization in all three branches of Tanoan, but not in Kiowa, where they have remained stops. I point out in Sutton (2009), however, that this innovation is not fully shared among the Tanoan languages, different
dialects of both Tewa and Tiwa disagreeing in the degree of spirantization. Indeed, Arizona Tewa shows the same resistance to spirantization as does Kiowa. This appears instead to be an independent innovation in each of the three Tanoan branches, striking Towa first, then filtering through Tewa and Tiwa varieties only more recently. Such spirantization is highly common cross-linguistically, so parallel independent innovation is not at all unlikely.

Another possible shared innovation is the development of certain aspirated stops into fricatives in the Tanoan branches, but not in Kiowa. As described in section 9.6.1, Kiowa has a reflex /tʰ/ corresponding to Tewa /s/, Tiwa /s/, and Towa /š/. I argued in that chapter for a reconstruction of aspirated stops */tʰ, kʰ, kʷʰ/ before high vowels, the different stops having merged. Under this account, we would appear to have a shared innovation in Tanoan\(^6\). The one major problem with this evidence is its limitation. As I commented in chapter 9.6, this series is not very robustly attested, with only a handful of potential cognate sets identified so far. Also, the context of an aspirated stop preceding a high vowel does seem to lend itself readily to spirantization, leaving open the possibility of independent innovation in all three of the Tanoan branches (or perhaps independently in Tewa-Tiwa and in Towa, see next section). However, this correspondence more than any other gives evidence for a split between Kiowa and Tanoan.

The only other generalized distinguishing feature between Kiowa and the Tanoan languages that I have noted so far is the tendency for the former to retain PKT stem-final sonorants while the latter languages tend to lose them. In particular stem-final */l, m, n/ are typically realized as such, but these are often deleted in coda position in the Tanoan

\(^6\) The same would be true under Hale’s (1967) account. He reconstructs this series as */tʰ/, so Kiowa would be fully conservative while the Tanoan languages have all shown spirantization of the consonant.
languages. As the discussion of chapter 10 will have shown, however, stem-final consonants are far from well understood, so this may ultimately prove to be an invalid distinction. Also, insofar as my conclusions on stem-final consonants are accurate at all, it appears that the Tewa branch does loses PKT final sonorants less than do the other two Tanoan branches. This would mean that the loss of stem-final sonorants is not fully a shared innovation among the three Tanoan branches. Still, this feature shows some promise that could be followed up as stem-final consonants are better understood.

Any other shared phonological features among the Tanoan languages in contrast with Kiowa are much more limited. There are a small number of cognates that show a reflex of high front vowel */i/ in which the Kiowa form shows a high vowel while all of the Tanoan languages show a low vowel. This may be illustrated with the following cognate set mentioned in chapter 8.6.1.3.

Table 21-1: High Vowel Reflexes, PKT Cognate Set fire

<table>
<thead>
<tr>
<th></th>
<th>KÌ</th>
<th>RGT</th>
<th>AT</th>
<th>TA</th>
<th>PI</th>
<th>ST</th>
<th>To</th>
<th>*PKT</th>
</tr>
</thead>
</table>
| fire| pʰi<sup>i</sup>  
(> pʰyá(y)-<sub>(COMP)</sub>) | phã  
(> phá<sub>(yV)</sub>) | pʰã | pʰã | pʰã | phẽ | φé' ~  
φéyã  
(> phá<sub>(yV)</sub>) | *pʰi<sub>(yV)</sub> |

Not many cognate sets showing this correspondence have yet been found, so it does not provide the strongest of evidence. Plus, the complexity of developments in the PKT high front vowel requires further study. But, there is the potential here for demonstrating a shared innovation among the Tanoan languages.

The leads are so far no more promising in the morphosyntax than in the phonology. One distinguishing feature of note is in the noun class system. Without going
into too many details, in Kiowa the dual is categorized with basic number while in Tewa and Towa\textsuperscript{7} the dual is categorized as inverse (see chapter 5.3.5 for the usage of “basic” and “inverse” number in Kiowa-Tanoan). In Sutton (2010) I reconstruct the Tewa/Towa pattern as the more conservative, Kiowa being the innovator. Thus, this distinction would not demonstrate a shared innovation for classifying the languages in the family. That article did not take into account the full complexity of the number marking and noun class system, however. In particular it did not delve into the contrasting treatment of the dual in the pronominal indexation as opposed to the nominal marking. In all languages of the family, the dual is effectively always distinct from other numbers in the pronominal indexation proclitics where noun class plays a role. The dual may therefore not play as large a role in the noun class system as my earlier article gave it credit for. There thus remains the possibility that Tewa and Towa are showing a shared innovation as opposed to Kiowa\textsuperscript{8}.

Other distinguishing features of Kiowa morphology, specifically in the pronominal proclitics, were argued in Part III to be internal innovations and would therefore not constitute evidence of internal classification. Reinterpreting these distinctive features as conservative, e.g. the more robust number marking within the dative proclitics than is found in the Tanoan branches, would permit an analysis that demonstrates a shared innovation. This will involve another in-depth study into the pronominal proclitics, however. One morphological feature that could prove to be a shared innovation

\textsuperscript{7} In the Tiwa languages the dual is not complicit in the noun class-number marking system.
\textsuperscript{8} Tiwa appears to have undergone an independent innovation later on such that the noun class system is not entirely comparable. However, there are traces in Tiwa of a system identical to that found in Tewa and Towa.
if my reconstruction is erroneous is the inverse element \(*\text{-pi}=\) which appears in
pronominal forms in Tewa, Tiwa, and Towa, but never seems to occur clearly in Kiowa.

In short the evidence for shared innovations among the Tanoan languages in
contrast with Kiowa remains quite weak. Kiowa does not appear to be any more
divergent from the other branches than they are from each other at present.

21.2.2.2 Tewa-Tiwa

Perhaps more than the status of Kiowa, the grouping of Tewa and Tiwa seems to
have continued to attract attention (cf. Davis 1959, Hale and Harris 1979, Ortman 2012,
Michael Schillaci p.c.). This appears to be due both to the results of lexicostatistical
analysis as well as their close geographic proximity. Evidence of shared innovations is
not much more robust than was the case for Kiowa versus Tanoan, but there are some
items of note, particularly in the stem-initial consonant phonology.

First, there is the development of fricatives from aspirated coronal stops \(*/tʰ, kʰ, kʷʰ/\)
mentioned in the previous section. Tewa and Tiwa both show an alveolar fricative
reflex \(/s/\) in this series. As noted above, this correspondence set is not widely attested.
Also, the Towa correspondence \(/š/\) is close enough in articulation that the innovation is
not necessarily unique to Tewa and Tiwa to prove a special grouping.

Related to the above spirantization is the development of affricates in Tewa and
Tiwa as described in section 9.5.1. It was argued there that front velar stops \(*/ḵ, ḵ'/\) in
these two branches will fronting to alveolar obstruents in Kiowa and Towa. The
affrication appears to have applied more broadly in Tiwa than in Tewa, so it is not yet
clear whether this might represent a later spread of affrication within Tiwa or should be
interpreted as representing independent innovation within the two branches. The
 correspondence sets in question are frequent and regular enough that this may provide the strongest evidence for a Tewa-Tiwa grouping⁹.

Another possible shared innovation is seen in the segments realized as glides in Tewa and Tiwa. Tewa and Tiwa have a labiovelar glide /w/ corresponding to a voiceless stop /kʷ/ in Towa and voiced obstruents /g, z/ in Kiowa. Both Hale (1967) and I reconstruct this segment as a voiced labiovelar stop, my */ɢʷ/, suggesting that Tewa and Tiwa both underwent a change whereby the stop component was elided away. Similarly, Tewa has a palatal glide¹⁰ /y/ corresponding to a glide /y/ in Taos Tiwa (which I argue underwent a change to /č/ in Picuris Tiwa and to /š/ in Southern Tiwa). These glides correspond to voiced obstruents /d, z/ in Towa and Kiowa and I reconstruct the segment as a front voiced velar stop */gʲ/. Thus, a voiced stop underwent lenition in both Tewa and Tiwa to give a palatal glide¹¹. These two changes are not quite as commonly attested as the affrication above, but are frequent enough to provide another piece of evidence that is relatively strong.

There do not appear to be comparably strong evidence in the vowel or stem-final consonant correspondences. There is the possibility that both Tewa and Tiwa show a

⁹ Hale (1967) reconstructs these correspondence sets as affricates */c, c'/. Under Hale’s account, therefore, Tewa and Tiwa are conservative and the shared affricates cannot be interpreted as a shared innovation.

¹⁰ The Santa Clara dialect of Rio Grande Tewa shows a voiced affricate /j/ regularly corresponding to the glide in other Tewa varieties.

¹¹ Hale (1967) reconstruct this segment as an alveolar affricate */dz/. This does not necessarily lend itself to evidence of shared innovation in Tewa and Tiwa. Hale reconstructs the consonant as an obstruent due to the affricate realization in Santa Clara Tewa mentioned in the previous footnote. One would also need to reconcile the obstruent correspondences in Picuris Tiwa and Southern Tiwa. This might lead to an account whereby the glide realizations are independent innovations in Tewa and Tiwa. There may still be a case for a shared innovation insofar as the reflexes in both Tewa and Tiwa are postalveolar, however.
similar tone system in contrast to the more pitch accent-like system of Towa and Kiowa, but the dearth of information on Tiwa tone leaves such an account speculative for now.

Morphologically, there is not as much evidence so far. Both Tewa and Tiwa show an inverse suffix on nouns that begins with a nasal stop, as opposed to the fricative -š in Towa and the various oral stop-initial allomorphs in Kiowa. The details of correspondences in suffixal morphology, however, have yet to be fully investigated.

Within the pronominal proclitics, the strongest evidence is perhaps in the reflexive paradigm. The Tiwa languages have a regularly occurring bilabial-initial reflexive element—TA mɔ̭, PI mɑ̭, ST be—while the Tewa languages have a seemingly cognate element frozen within some of its reflexive proclitics, RGT -vǐ̭, AT -bǐ̭. Neither Kiowa nor Towa seem to have a cognate to this element in reflexive function. Another similarity in form involves the reflexes of the inverse element *-pi when combined with dual number. In both Tewa and Tiwa, the inverse increment is followed by a nasal stop in the dual, e.g. compare TA ɔpén= 1D>3I (vs. ipí= 1P>3I) to RGT ovĕ̂ŋ= 3>3D (vs. ovê= 3>3A). Such a nasal dual marker following the increment is not found in Towa or Kiowa, suggesting a possible shared innovation for Tewa and Tiwa.

The morphologies of Tewa and Tiwa otherwise show many differences, especially in the pronominal proclitics examined in this dissertation, so other strong evidence is not immediately apparent. The above points may be enough to lean heavily in favor of a Tewa-Tiwa subgrouping, however. These points may be compared and contrasted with the similarities noted in the following subsections.
21.2.2.3 Tiwa-Towa

Phonologically I find little to lend itself in support of a special Tiwa-Towa subgrouping. Both vowels and consonants seem divergent enough that I could presently imagine these two branches together only in the company of Tewa as well (i.e. in the “Tanoan” grouping discussed above).

In morphology my verdict is much the same. The primary point of comparison that could lend itself towards a Tiwa-Towa grouping is the obligatory passive construction described in chapter 20. The Towa and Tiwa constructions here are very similar, both formally and functionally. In my analysis I attribute this to conservation of the original PKT construction in these two branches, thus not claiming any particular classification. Should my analysis prove wrong and if PKT is to be reconstructed without an obligatory passive-like construction, then shared innovation in Tiwa and Towa must be considered a possibility.

Beyond the passive construction, however, I do not see much morphological support for a grouping. Both the suffixal morphology and pronominal proclitics are different enough that there is not much ground so far to argue for shared innovation.

21.2.2.4 Kiowa-Tiwa

I have yet to identify any outstanding similarities to support a Kiowa-Tiwa grouping. Indeed, it almost appears that Kiowa and the Tiwa languages may be the branches of the family most divergent from each other. The main point of similarity seems to be that they both permit a larger number of coda consonants than do Tewa or Towa, a feature that is more likely a conservative feature in each rather than a shared
innovation. For now, I would at least posit that a Kiowa-Tiwa subgrouping is among the least likely possibilities for classification of the family.

21.2.2.5 Kiowa-Towa

In comparison to their relations with Tiwa, both Kiowa and Towa show more promise in being linked to either each other or to Tewa, if any special classification is to be made. The evidence is not necessarily as strong as what we find for a Tewa-Tiwa grouping, but I do find enough to warrant consideration.

The primary suggestion of a Kiowa-Towa categorization lies in the phonology with only bare hints in the morphology noted to date. One point of similarity is their reflexes in the correspondence sets that involve affricates in Tewa and Tiwa. Corresponding to Tewa and Tiwa /c, c’/, Kiowa regularly has alveolar stops /t, t’/ and Towa has alveolar obstruents /s, t’/. This fronting to alveolar place of articulation would be a common point of development under either my reconstruction of */kʲ, kʷ, kʲ’, kʷ’/ or under Hale’s (1967) reconstruction of */c, c’/. On the other hand, fronting of the series I propose as front velars is so common across all branches of the family that the reconstruction may eventually need to be reconsidered with an alveolar origin, i.e. PKT */t, t’/ rather than */kʲ, kʷ, kʲ’, kʷ’/. If these segments did descend from alveolars, then Kiowa and Towa would be showing conservative forms with only Towa innovating in spirantizing the non-glottalized obstruent to /s/ and the two branches would not form a subgroup.

Another point of comparison between Kiowa and Towa is the development of the proposed labiovelar stops. Under both Hale’s and my reconstructions, both Kiowa and
Towa lost the labialization on these segments across the board (except for Towa /kʷ/ from */cʷ/), the labialization usually being coarticulated with a following vowel. In the analysis of Part II, such a development commonly occurred in all four branches of the family, meaning the (almost) total loss of labiovelars in both Kiowa and Towa could be a coincidence. Even if the extent of my labiovelar account should prove erroneous, the common developments in Kiowa and Towa will need to be considered carefully.

Alternatively, it might also be considered that the labiovelar stops of Tewa and Tiwa are a shared innovation in those branches, the labialization being spread from the adjacent vowel, and that Kiowa and Towa are the more conservative in having non-labialized consonants.

Kiowa and Towa also appear to show a common development of alveolar obstruents /d, z/ from a voiced front velar stop */gʲ/, corresponding to palatal glides and affricates in Tewa and Tiwa. Again, further consideration of my front velar series may lead to different repercussions for shared features. If this correspondence series is instead reconstructed as a voiced alveolar obstruent, for instance, then Kiowa and Towa may simply be conservative and show no shared innovation. Otherwise, the common development in this series will need to be given further consideration.

In the vowel correspondences, we also find similar reflexes in Kiowa and Towa and a few of the series. Both show a mid back rounded vowel /o/ corresponding to the Tiwa central diphthong /ɨo/ (chapter 8.7.2) and both often have a mid front vowel /e/ corresponding to high front vowels /i/ or /ia/ in Tewa and Tiwa (chapter 8.6.1.2). It might also be remarked that the mid vowels of modern Kiowa and Towa are diphthongized in contrast to the monophthongal qualities of the Tewa and Tiwa mid vowels. None of these
facts appear to provide as strong of an argument for shared innovation as the consonant data above, but they should not be ignored either.

In short, the possibility of a Kiowa-Towa subgrouping could reasonably be investigated further. While the evidence is by no means overwhelming, there are some commonalities between the two languages that do require explanation.

21.2.2.6 Tewa-Towa

I have never seen the possibility of a Tewa-Towa subgrouping discussed in any of the literature even though it seems no less likely than a Tewa-Tiwa grouping. Towa and Tewa were located near enough to each other geographically, especially if Pecos Pueblo spoke a Towa variety. Linguistically, while there is not much going for a special Towa-Tiwa comparison, there are some noticeable commonalities between Tewa and Towa, even if not many.

 Probably the strongest phonological argument for a Tewa-Towa grouping is the deletion of word-initial ejectives in compounds, as described in chapter 10.1.1. In both Tewa and Towa, but not in Tiwa, we find an initial ejective (especially /p'/) being elided in disyllabic or longer compounds. The same deletion appears to have affected the initial */t'/ in the word for ear in both branches (RGT ʔo ye, To wʉ tē compared to TA t’3-li3, KI t’3-). In Tewa these words end up vowel-initial (or perhaps glottal stop-initial, depending on how one analyzes onset glottal stops) while in Towa these regularly begin with /w/. It is a unique enough development, however, to seem more like a shared feature than coincidental independent innovations.
Another similar feature in the two branches is the development of high back vowel */u/. The regular Tewa reflex is /e/ while the regular Towa descendant is /i/. The quality of the reflex vowels is quite distinctive, but one commonality is the lack of rounding in both branches. A shared innovation whereby */u/ became unrounded could help to explain the odd Tewa reflex. This argument is not particularly strong, but it could be added to the mix if other evidence for Tewa-Towa can be gathered.

One more common phonological feature, superficial though it is, is the extreme loss of coda consonants in both Tewa and Towa. Each branch does show conservation of stem-final consonants in different ways, but the fact that almost no codas are allowed in either Tewa or Towa is quite striking in comparison to Kiowa and Tiwa. Not much should be made of this fact in the absence of other evidence, but it is something further to consider should additional evidence come to light.

Morphologically I have not yet noted regular features that definitely point to a unique common ancestry for Tewa and Towa. One interesting morphological irregularity shared between the two branches, however, is the imperfective of the verb do, RGT ṭo̞ ṭo. These imperfective forms may be compared to their perfective counterparts RGT ṭqq, To ṭq̄ and their cognates KI ṭqm, TA ṭqm. The Tewa and Towa imperfective forms both show the absence of a nasal vowel or stem-final consonant, unlike any attested form of the cognate verb in Tiwa or Kiowa. While it is fully possible that the irregular imperfective should just be reconstructed to Proto-Kiowa-Tanoan, it is also plausible that the irregularity could bespeak a shared innovation of Tewa and Towa.

The evidence for a Tewa-Towa grouping is so far tantalizing without being overwhelming. I think the possibility is there and could be explored further. Certainly the
common loss of initial ejectives in many compounds warrants an explanation, whether it is by shared innovation or by some formerly regular morphophonological alternation in Kiowa-Tanoan. A Tewa-Towa grouping seems as plausible as the Kiowa-Towa grouping mentioned in the previous section.

21.2.2.7 Kiowa-Tewa

The final binary grouping to consider is Kiowa and Tewa, a pair that also shows some interesting features in common to suggest a period of shared development. These commonalities are to be found more in the grammar than in the phonology, although there are a few features of the latter to note.

Following from the previous section, there appear to be a number of vowel-initial lexical items in Kiowa, usually disyllabic or longer, with Watkins (1984: 63) indicating that there may have been a process of ejective-deletion in the past, affecting */p’/ in particular. This is reminiscent of what we see in Tewa and Towa compounds. Unfortunately there do not seem to be many, if any, cognate compounds that show this ejective loss in all three Kiowa, Tewa, and Towa. It is a curious common feature among these three branches as opposed to Tiwa, which never seems to show ejective loss. As commented above, even if this is not indicative of immediate common ancestry, it may point to a formerly productive process within Proto-Kiowa-Tanoan.

The most significant sound correspondence among stem-initial consonants that I have noted so far is the correspondence of Kiowa /s/ and Tewa /s/ (corresponding to Tiwa /l/ and Towa /tv/). I propose these segments to descend from unaspirated stops */t, kʲ, kʷ/ in chapter 9.6.2, although this series does require further study. Whatever the origin of
this odd correspondence set, the identical reflexes in Kiowa and Tewa require
explanation. It could be a case of shared innovation or simply the evolution of an
unmarked segment (alveolar fricative /s/) from a more marked segment\textsuperscript{12}. Minor a case as it may be, it allows for a consideration of shared innovation.

Among other stem-initial consonants and vowels, there do not appear to be other
candidates of note. In stem-final consonants, we do find that may codas in Kiowa seem to
have a corresponding consonant in Tewa, even when no stem-final consonant is present
in Tiwa or Towa. While not the strongest of evidence, particularly considering the
tentative reconstruction of stem-final consonants, it is made the more significant insofar
as Tewa has lost so many of its codas in comparison with Tiwa and Kiowa. That it should
show such a relatively frequent correspondence to the richer coda inventory of Kiowa
should give pause.

Morphologically there are also a few features that suggest a Kiowa-Tewa
relationship. Among the pronominal proclitics, it is striking that Tewa and Kiowa show
seeming cognates for the first and second person singular reflexive proclitics distinct
from the forms found in the other languages. As described in chapters 15.3 and 16, the
second person form is not analyzed as either conservative nor cognate with those found in
the other languages. The first person form, on the other hand, while it does have Tiwa
and Towa cognates, is only found in reflexive usage in Kiowa and Tewa. This suggestion
is undermined by the questions surrounding the reconstruction of the reflexive paradigm,
discussed in Part III.

\textsuperscript{12} Hale (1967) reconstructs this series as descending from */s/, by which the Kiowa and Tewa reflexes are
conservative. The dubiousness of Hale’s reconstruction was already discussed in chapter 9.
Even more arresting is the seeming development of third person forms from second person forms. In Kiowa such a shift seems to have given rise to the third person human plural category unique to that language. In Tewa, on the other hand, the shift seems to have created those $3 \rightarrow 3$ transitive and transitive-dative proclitics that give emphasis to a third person O or D argument, replacing the voice system historically used in this capacity. We do not see comparable developments in either Tiwa or Towa. If this is not a shared innovation, then either the proposed change of second to third person in Part III is wrong or the shift can be attributed to an earlier stage of Kiowa-Tanoan and its reflexes have simply been lost in the other two branches. If these Kiowa and Tewa pronominal proclitics do prove to be cognate, however, it could be significant evidence for a close affiliation between the two branches.

Related to the proclitic system is the voice system that fills in parts of the polyvalent paradigms where there are violations to the person-animacy-topicality hierarchy. Kiowa and Tewa, however, have both lost the voice system in this function (cf. chapter 20). Tewa maintains case marking, but does not use the verbal morphology or valence reduction. Kiowa had no case marking and has shifted the function of the verbal morphology and valence change to other purpose. Both of these branches have also seen the gaps in their polyvalent pronominal paradigms filled in with proclitic forms to express the missing configurations. While the innovated pronominals do not appear to be cognate between the two branches, the lack of the voice system could point to a shared innovation. Unfortunately this can probably only be interpreted as evidence of a shared history if other evidence is brought to bear in support of the relationship first.
One other piece of suggestive evidence is to be found in the suffixal verbal morphology not studied in this work. Both Kiowa and Rio Grande Tewa have a future-marking suffix that begins with an ejective alveolar stop: KI -t'ɔ́ˑ, RGT -t ó. These suffixes appear to be cognate and are probably grammaticalized from a former auxiliary still apparent in Tiwa as the verb TA t'ɔ do, dance. Neither Tiwa nor Towa appear to use this verb or any suffix grammaticalized from it as a future marker. While this again does not provide definitive evidence—the suffixes may not be cognate or may have grammaticalized independently in each branch—it is a factoid that could be interpreted as a shared innovation in the light of other evidence, if found.

21.2.2.8 Summary of Kiowa-Tanoan classification

In summary classification of the Kiowa-Tanoan languages remains an open question. The best evidence points to a Tewa-Tiwa grouping. However, there are other observations that could instead indicate a Kiowa-Tewa, Kiowa-Towa, or even Kiowa-Tewa-Towa subgrouping. The question of Kiowa-Tanoan family internal relationships should be further considered as new discoveries are made in the analysis of sound changes and grammatical correspondences.

21.3 Conclusion and Future Research

High as the page count of this dissertation may be, it represents only a small step in the study of the Kiowa-Tanoan language family. Many other topics remain to be explored and even those investigated herein require further research. This call for further study applies both to the synchronic analysis of the modern Kiowa-Tanoan languages and to the diachronic comparative-historical analysis. I will mention here only a few of those
areas ripe for investigation which I feel are important in the light of research done, and
not done, to date.

In direct follow up to the phonological reconstruction presented here, there are
several areas to be reconsidered, more cognate sets to be found, and additional sound
changes to be identified. While I stand by the observations laid out in Part II, alternative
approaches to the data and further consideration can only refine and enhance the analysis.
The proposal of a three vowel system should be questioned, but with an eye towards
determining how exactly the reconstructed system should be modified. Success in this
area would in turn lead to revisions in the proposed consonant inventory, especially in
terms of the suggested labialized and palatalized segments. Specifically, I would suggest
that the data and vowel correspondence series be evaluated with mid and central vowels
in mind as well as the possibility of the kinds of diphthongs seen in the modern Tiwa
languages. Such investigation should also consider the possibility and influence of stem-
final consonants, especially glides.

Such consideration of the vowels should also be augmented by a diachronic
analysis of vowel length in the family in order to determine whether it was phonemic in
Proto-Kiowa-Tanoan and what effect it might have had. Independently, although
probably not unrelatedly, data need to be compiled and analyzed with regard to tone.
Isolating tone correspondences may lead not only to a reconstruction of the tone system
of Proto-Kiowa-Tanoan, but would undoubtedly lend clues to changes in the consonant
and vowel system. In particular I might expect that falling tone would be found to
correlate with lost stem-final consonants—or even lost syllables—and perhaps
alternations between monophthongal and diphthongal vowels.
The presentation of chapter 10 will have also made it clear that stem-final consonants require a lot more work. While further consideration could be given to these consonants independently, I think it would be more illuminating to examine these consonants through the lens of suffixal morphology. The suffixes found especially on verbs constitute some of the most highly grammaticalized morphology in the language and participate in some of the more complex morphophonology to be found in the family. This includes being relatively tightly bound to, and interacting with, the lexical stems to which they are attached, leading to consonant alternations that are suggestive of segments otherwise lost in the languages.

On top of its phonological import, suffixal morphology requires study in its own right in terms of grammaticalization and formal and functional change. I find it particularly striking how different the verbal suffixes are between Arizona Tewa and Rio Grande Tewa and among the three Tiwa languages, let alone among the four primary branches of the family. Reconstructing the Proto-Kiowa-Tanoan morphological system should provide an exciting challenge and should present additional evidence towards the phonological issues mentioned above and towards the internal structure of the family to be mentioned below.

Another feature of Kiowa-Tanoan grammar that would be enlightening to investigate is the complex noun class and number-marking system mentioned in chapter 5 and in passing in Part III. This area of the grammar involves not only consideration of lexical semantics and semantic extension and change, but also to the semantics of grammatical number and its morphological reflexes. Suffixal morphology on nouns and adjectives as well as the pronominal proclitics of Part III both encode the information on
grammatical number through which the noun class system is realized. Therefore, studying this system would not only address the problems of stem-final consonants, as would other suffixal morphology, but might also help to clarify the design and development of the pronominal proclitic paradigms, permitting revision to the reconstruction presented in Part III.

Reconstruction of the lexical and grammatical structure of the family in-and-of itself is not the only domain of diachronic work still required for Kiowa-Tanoan. As the discussion in section 21.2 above will have illustrated, the structure of internal relationships among the members of the family is in need of further study. Clarification of this internal family structure would receive its primary support from the further investigations into the language structures as described above. At the same time, determining definitively which branches are more closely related and the sequence in which the family diversified would help to elucidate the reconstruction of Proto-Kiowa-Tanoan (and of intermediate stages, i.e. Proto-Tewa, Proto-Tiwa, Proto-Kiowa, and Proto-Towa). This is the domain of diachronic linguistic study which is of most interest outside the field of Kiowa-Tanoan linguistics, particularly in the domains of anthropology and history. Arriving at stronger linguistic evidence for the relative relatedness of the modern Kiowa-Tanoan languages would also help archaeologists and historians develop better theories of which linguistic groups may have been spoken in which prehistoric locations (a use of linguistic data well illustrated by Ortman’s (2012) study).

In addition to the internal structure of the Kiowa-Tanoan family itself, there is also the question of deeper genetic relationships between Kiowa-Tanoan and other
language families in the Americas. The Azteco-Tanoan hypothesis of Whorf and Trager (1937) and the related Central Amerind hypothesis of Greenberg (1987) already provide a point from which to begin this investigation. Part of the reason these hypotheses have not already been given further scrutiny is because of the dearth of reliable Kiowa-Tanoan data. With studies such as this dissertation and with the follow-ups proposed above, we might be better equipped not only to determine with greater certainty the deep-level genetic relationships in the Americas, but we also might isolate regular sound correspondences (and concomitant sound changes) and the development of grammatical features in Kiowa-Tanoan and its external relatives.

While all of the above might proceed with only the data from the modern Kiowa, Tewa, Tiwa, and Towa languages, an understanding of these relatively well-documented languages may also permit a reevaluation of the limited data available for the extinct Piro language. A comparison between Bartlett’s word list (Bartlett 1852b, Bartlett and Hodge 1909) and Mooney’s (Bartlett and Mooney 1897) and a morphological and lexical analysis of the Piro Lord’s Prayer (Sociedad Mexicana 1860, 1888) in the light of the other Kiowa-Tanoan languages may permit a clearer reconstruction of both part of the linguistic structure of Piro and the place of the language within the overall family. Even if there are no more speakers and only limited data, Piro has not had its last word just yet.

Finally, and perhaps most importantly, the seven Kiowa-Tanoan languages still spoken today are due for further research into their synchronic structures. Documentation of more of their lexicon, study of the full distribution and function of the pronominal proclitics, grammatical affixes, and free particles, analysis of their information structure and morphosyntax, and recording of dialect variation among speakers are all needed. This
research would be fruitful not only for its own sake, but also for an increased understanding of, and richer data for, the diachronic analyses proposed above. At the same time, those diachronic studies will help us to understand the present state of the Kiowa-Tanoan languages.

These and more studies I hope to see transpire and intend to do my part towards undertaking. It may be mentioned that all of the Kiowa-Tanoan languages are endangered, as are the overwhelming majority of indigenous languages in the Americas. While this fact cannot be ignored and revitalization efforts should be redoubled if the communities wish to see their languages survive, this is not all there is to the family or its constituent languages. Kiowa-Tanoan is not a group of dying languages: it is a group of languages with a long and rich life history whose story will hopefully continue to be told for some time to come.
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