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This dissertation, directed and approved by the candidate's committee, has been accepted by the Graduate Committee of The University of New Mexico in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

Noun-Verb Relationships in Arikara Syntax

Title

Francesca C. Merlan

Candidate

Anthropology

Department

Thomas Spolsky

Dean

May 9, 1975

Date

Committee

Bruce Riggsby

Chairman

Gail D. Bills

Stanley Newman

NOUN-VERB RELATIONSHIPS IN ARIKARA SYNTAX

BY

FRANCESCA C. MERLAN

B.A., San Francisco State College, 1967

M.A., University of New Mexico, 1970

DISSERTATION

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NOUN-VERB RELATIONSHIPS IN ARIKARA SYNTAX

Francesca C. Merlan

Department of Anthropology

The University of New Mexico, 1974

A partial syntactic description of Arikara is presented, with primary emphasis on the relationships of nouns to verbs in the language. Major types of surface intransitive and transitive constructions are described. A transformational description of person agreement in the verb is presented. Major types of possessive constructions are examined. Finally, the process of noun incorporation, characteristic of the Caddoan language family generally, is examined, and evidence is presented for the direct role played by nominal features in Arikara syntax.

The discussion of problems in syntax is preceded by a brief outline of Arikara phonology, which, although neither exhaustive nor definitive, shows that the language has relatively complex and deep phonology, in that the abstract representations of formatives are quite different from their surface counterparts.

On the basis of the examination of noun-verb relationships, it is shown that Arikara is not a language of the ergative type, as has been suggested for other closely affiliated members of the Caddoan language family, but rather is a language exhibiting a split-intransitive verb system. Tentative suggestions are made regarding the semantic interpretation of the split in the intransitive paradigm.

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LIST OF ABBREVIATIONS

acc	accusative
adv proc	adverbial proclitic
anim	animate
ant	anterior
ASP	aspect
assert	assertative
bck	back
ben	benefactive
bp	body part
cnt	continuant
con	consonantal
cor	coronal
DET	determiner
dir obj	direct object
dis	distributive
du	dual
erg	ergative
evi	evidential
excl	exclusive
hab asp	habitual aspect
hgh	high
imp asp	imperfective aspect
impv	imperative
inanim	inanimate

inc	incorporated noun stem
inch	inchoative
incl	inclusive
ind	indicative
ind num	indirect object number
ind obj	indirect object
ind poss pro	independent possessive pronoun
inf	infinitive
int	intensive
intrans	intransitive
lng	long
loc	locative stem
MSC	morpheme structure condition
nas	nasal
neg	negative
nom	nominative
non-pas	non-past
num	number
OB	obligatory
obj	object
obj num	direct object number
obj poss	object possessor
obj pfx	object prefix
OP	optional
obv	obviative
pas	past

pfx	prefix
pl	plural
poss	possessor
poss pfx	possessive prefix
poss proc	possessive proclitic
pot	potential
pfx poss	prefixal possession
PR	phonological rule
prf asp	perfective aspect
PRO	pronoun
proc	proclitic
PS	phrase structure rule
pv	preverb
refl	reflexive
rel	relativizer
res	restricted
rnd	round
RR	readjustment rule
sbj	subject
sbj num	subject number
sbj poss	subject possessor
sg	singular
son	sonorant
sub pfx	subordinating prefix
sub suf	subordinating suffix

syl	syllabic
TNS	tense (verbal category)
tns	tense (phonetic feature)
trans	transitive
voi	voiced
VS	verb stem
VT	verb theme

PREFACE

Arikara is the northernmost dialect of what is collectively termed Pawnee, a member of the northern branch of the Caddoan family. Arikara is presently spoken, in one degree or another, by a small number of persons, probably not exceeding thirty, on the Ft. Berthold Reservation in west-central North Dakota. Hidatsa, a language of the Siouan family, is also spoken at Ft. Berthold, and some elderly individuals claim varying degrees of proficiency in Mandan, also of Siouan affiliation.

The Caddoan language family is composed of four language-units: Pawnee, Wichita, Kitsai, and Caddo. The preliminary study of Lesser and Weltfish (Lesser and Weltfish 1932) indicated that Pawnee, Wichita, and Kitsai together form a northern branch of the Caddoan family, while Caddo by itself forms a divergent southern branch. Kitsai became extinct in this century, and is preserved in the field manuscripts of Dr. Alexander Lesser; Caddo, Wichita, and Pawnee are still spoken by small numbers of individuals. There are three dialect divisions within Pawnee: South Band, Skiri, and Arikara. South Band was spoken by three southern bands of Pawnee, the Chawi, Kitkehahki, and the Pitahawirata. Skiri constitutes another dialect division, and was spoken by a fourth band of Pawnee. Arikara, which forms the third dialect division, is spoken today only at Ft. Berthold.

Of the relationships among the dialect divisions of Pawnee, Lesser and Weltfish (1932:3) reported:

While it may be true that historically - as tradition claims - the Arikara dialect diverged from a root which was once common to Arikara and Skiri, nevertheless on the basis of a comparison of the three Pawnee dialects as spoken today, the Arikara divergences should be treated in relation to the Pawnee proper or South Band dialect, rather than in relation to the speech of the Skiri.

This observation is corroborated by Taylor's more recent study (1963a) of comparative Caddoan phonology. All the evidence to date points to the conclusion that

Arikara is the first division which occurred in Pawnee after Pawnee differentiation from the other branches of North Caddoan. The non-linguistic similarities between Skiri and Arikara, so convincing to Dorsey, must date from relatively recent times (probably no earlier than the arrival of the Dakotas on the Missouri), a fact moreover suggested by the strong tradition (Taylor 1963a:131).

The present study examines the relationships of nouns to verbs in Arikara. From this examination, conclusions are drawn concerning the syntactic type of Arikara. Different conclusions have been drawn by other investigators concerning the syntactic type of closely related languages. Specifically, it has been suggested that South Band (Parks 1972) and Wichita (Rood 1969) are languages of the ergative type. Although all three languages, Arikara, South Band, and Wichita exhibit great similarity of grammatical features and processes, it must be emphasized that the description which follows is based on Arikara evidence only. No claim is made that the analysis is correct for any other of the Caddoan languages. However, the close relationship among these three languages demands that the motivation for the alternative

analysis of South Band and Wichita be examined and shown to be either applicable or inapplicable to the Arikara case.

In the past few years there have been significant additions to the amount of linguistic material available on the Caddoan languages. However, there is still comparatively little syntactic description and analysis of any of the Caddoan languages. Nineteenth century material on Caddoan languages consists primarily of vocabularies collected by travelers, missionaries, and anthropologists, with the notable exception of John B. Dunbar's (1890) brief sketch of Pawnee, still useful today as an introduction to the structure of Pawnee. Gene Weltfish's ethnographic studies of the Pawnee, conducted in the late 1920's and early 1930's, produced a fair amount of linguistic material, including a short text together with morphological analysis and a sketch of phonetics and morphology (Weltfish 1937), and a longer study of Pawnee morphology (Weltfish n.d.), never brought to completion and available only in unpublished manuscript form. The most recent and extensive account of South Band Pawnee phonology and morphology is the descriptive grammar presented as a doctoral dissertation by Douglas R. Parks (1972).

The only syntactically-oriented studies of Wichita are those of David S. Rood, including a grammatical description presented as a doctoral dissertation (Rood 1969) and a later article (Rood 1971) examining the relationships of nouns to verbs in Wichita.

This study is based on data collected during several

periods of field research conducted in the summers of 1971, 1972, and the summer and fall of 1973. A total of approximately eight months was spent in the field. The Arikara informants with whom I worked live in the southern part of the Ft. Berthold Reservation in the area near Garrison and White Shield, North Dakota. I would like to acknowledge my debt to them, especially to Mrs. Ella P. Waters, Mrs. Mary Gillette, Mr. Dan Howling Wolf, Mrs. Lizzie Paint, and Mr. and Mrs. Matthew White Bear, for their assistance and great patience.

Chapter I

1.1 Theoretical Assumptions

This study presents a partial description of the syntax of Arikara. Specifically, it examines the relationships of nouns to verbs in a variety of constructions. It describes the types of relationships that nouns may bear to verbs in simple transitive and intransitive clauses; it examines basic possessive constructions; and finally, it examines the process of noun incorporation, in which nouns are compounded with verbs to form tightly-knit morphological units.

There are two purposes that unite the various aspects of the investigation. First, the description sets out to specify the structural principles, or rules of concatenation, according to which grammatical elements are combined to create well-formed sentences in Arikara. A second, and equally important purpose of the study, is to show the inseparability of these rules of concatenation from a description of the semantic information conveyed by the grammatical elements that combine to form sentences. The claim is made that the investigation of syntax is co-extensive with the investigation of semantics in language.

1.2 Method of Description

This study is presented as a transformational description of Arikara. I wish to explain and justify the sense in which the term "transformational" is used.

Transformational generative grammar is the name applied to

a linguistic metatheory which assumes that the sentences of natural languages can be produced by a set of rules, at least partially ordered, which can generate all the grammatical sentences of a language and no ungrammatical ones. Although the number of sentences in natural languages has no upper limit, the set of instructions, or rules, which generate these sentences is assumed to be finite, and thus capable of being specified in some explicit fashion. These rules constitute the grammar of a language.

The standard version of transformational generative grammar as outlined by Chomsky (1965) in Aspects of the Theory of Syntax further assumes that a grammar contains four components: a phonological component, a syntactic component, a semantic component, and a lexicon. Within the standard theory, these components of a grammar define three significant levels of linguistic structure: a level of semantic representation, a level of syntactic representation, and a level of phonetic representation.

The semantic component of a grammar thus conceived is said to be strictly interpretive of syntactic structures. That is, phrase structure rules in the syntactic component of the grammar generate an infinite set of deep structures. These deep syntactic structures, containing all, or nearly all, information relevant to semantic interpretation, are projected onto semantic representations. The syntactic representation of a sentence is considered to be a set of lexical formatives whose boundaries are appropriately indicated, partitioned into sub-strings by labeled brackets or the notationally

equivalent tree-representations known as phrase-markers. Deep structure syntactic representations are successively converted into intermediate and surface syntactic structures by a series of transformational rules. The surface syntactic representation of a sentence serves as the input to the rules of the phonological component; in those cases in which the bracketed syntactic representation is inappropriate for the immediate application of phonological rules, a special sub-set of rules of the phonological component, called readjustment rules, modify the surface syntactic representation to prepare it for application of the phonological rules. Phonological rules operate to map syntactic representations onto phonetic representations. Thus, the relationship of meanings to sound sequences is indirectly specified by the application of rule-sets within the various components of the grammar.

Since this study focuses primarily on some aspects of sentence construction in Arikara, our main concern is with definition of the interrelationship of semantics and syntax, considered to be independent components of the grammars of natural languages in the metatheory sketched briefly above. The assumptions made in the present study differ in this regard from those of the standard theory.

The present description is transformational in the following sense: it too assumes two significant levels of sentence description, a deep structure level quite removed from the actual forms of sentences in the language, and a surface structure level, much closer

to the forms of sentences as they are actually spoken. It further assumes a set of ordered transformational rules which convert the more abstract deep structures into grammatical surface sentences. It claims with the standard theory that the rules connecting these two levels of sentence description form a part of the (tacit) knowledge that each speaker of Arikara has about his language. Obviously, speakers untrained in the analysis of languages would be unable to enunciate these rules in any clear fashion. In practical terms, the native speaker's linguistic knowledge is reflected in his ability to provide judgments about the grammaticality of sentences presented to him, and his ability to construct an infinite number of new and meaningful sentences. The rules formulated by the linguist, if they are accurate, are simply an explicit and painstaking setting forth of the knowledge which the native speaker applies so easily, and so unconsciously, in speaking.

Standard generative transformational theory is characterizable by its overriding concern with the notion of grammaticality in language (for more extensive discussion of the philosophical and empirical foundations of the theory than those presented here, cf. Chomsky 1957, 1965). That is, the theory claims that each language contains an irreducible set of construction types describable by the instructions called rules. The fact that these rules are capable of repeated application (i.e., are recursive) accounts for at least one aspect of the linguistic productivity exhibited by speakers of natural languages. Grammars are intended to be precise formalizations of

these rules. Only secondarily has generative transformational theory been concerned with the interpretation of the sets of instructions (for developments of interpretation within the standard theory, cf. Chomsky 1965, Katz and Fodor 1963, 1964). Standard generative transformational grammar represents an attempt to construct a theory of grammatical structure in which the syntactic and semantic levels of language are carefully distinguished. The insistence on the separation of syntax and semantics in grammar is fundamental within the metatheory, despite the fact that many of the phenomena that it purports to explain, such as the ambiguity of some sentences or the synonymy relations between sentences depend essentially for their recognition and analysis upon substitution relations between sentences, and as such must be dealt with as semantic relations in language. The substitutability of sentences for other sentences falls outside the exclusive realm of rules of concatenation, or syntax.

Our claim is that the investigation of grammatical structures and processes is co-extensive with the investigation of semantics in language. Obviously, the description of a language must begin with the discrimination of units of structure in sound systems, as well as in grammatical systems. The native speaker of a language may be unable to distinguish units of structure in a way that would be satisfactory to the linguist, but he is aware how units of sound must be combined to form words, as well as how grammatical elements must be combined to form sentences and discourses. He is aware that certain combinations of units express certain meanings, and that

different grammatical elements chosen to form sentences will carry different semantic information. Grammatical categories, in other words, convey meaning, and the investigation of grammatical categories independent of the conceptual information they represent is impossible, as well as fruitless. Thus, when we say that a given sequence of sound segments in a language represents the grammatical category of tense, we are merely saying that the language provides overt means for placing a reported event in time perspective with reference to the speech event.

The grammatical categories, equivalent to the kinds of semantic information, which must be obligatorily expressed if an utterance is to be meaningful differ from language to language. Some categories, such as those expressing information of person and number, are universal in language. The overt expression of these categories may vary greatly: in some languages number distinctions may be marked in the noun as well as the verb, while in other languages the verb alone may index nominal number. Certain other grammatical categories are not universally found. Concepts such as definiteness of noun phrases, and location and position of the reported event or object with respect to the speaker, are not obligatory in all languages.

Just as phonological description of a language must provide a statement of the significant sound units and an account of their distribution (including restrictions on sequences of segments, and structural relationships holding among the units in the sound system),

a grammatical description must provide an account of the semantic units represented by grammatical categories and a statement of the rules which determine their concatenation. Clearly the ordering of conceptual information expressed by grammatical categories in natural languages is non-random, just as the sequencing of sound elements is patterned.

Thus, the study of syntax is inseparable from the study of semantics. Although a universal approach to the description of significant components of sound systems (the distinctive features of Jakobson and others) is much further advanced, Boas (1911:24) long ago invited the cross-linguistic investigation of semantic units when he observed that "Languages differ not only in the character of their constituent phonetic elements and sound-clusters, but also in the groups of ideas that find expression in fixed phonetic groups." He opposed the imposition of grammatical description of Indo-European languages upon others which differ fundamentally from them in the kinds of conceptual information conveyed:

Grammarians who have studied the languages of Europe and western Asia have developed a system of categories which we are inclined to look for in every language. It seems desirable to show here in how far the system with which we are familiar is characteristic only of certain groups of languages, and in how far other systems may substitute for it (Boas 1911:35).

Following the Boasian tradition, the present study rejects the asemaantic study of grammar. It should be clear from the preceding remarks that grammaticalness and meaningfulness are closely

related, if not equivalent notions. In keeping with this idea, the intent of the present description, although limited in the range of phenomena with which it deals, is to characterize as simply and clearly as possible the kinds of semantic information conveyed by obligatory grammatical categories in Arikara, and the principles which determine their combination in sentence formation.

1.3 Grammatical Concepts of the Arikara Verb

Typologically, Arikara is a polysynthetic incorporating language, very similar in its obligatory grammatical categories and processes to Wichita and South Band Pawnee, the other Caddoan languages for which documentation is available. Arikara employs extensively the grammatical processes of prefixation, suffixation, and compounding; the first process accounts for the largest number of grammatical categories within the verb.

To introduce a discussion of the general structure of the language, several sample sentences are presented and analyzed. The final phonetic form of sentences is indicated in brackets; slashes mark phonemic representation.

[wi·nax^ʔ tiku·nahnino^ʔ]

The boy fears us (excl pl).

/ti+⁰+ku+un+nak+nino+⁰/

ind-sbj-dir-pv-obj-vs-prf
obj asp

The sentence constituents are further analyzed as:

<u>wi.naxč</u>	:	an independent noun "boy," the subject nominal of the transitive verb theme <u>un...nino</u>
<u>ti</u>	:	third person subject form of the indicative modal prefix
<u>∅</u>	:	third person singular subject pronoun; cross-references the independent noun <u>wi.naxč</u> ; receives no concrete phonological representation
<u>ku</u>	:	first person pronominal form of the direct object
<u>un</u>	:	separable preverb; the preverb plus verb stem <u>un...nino</u> constitute the transitive verb theme "to fear"
<u>nak</u>	:	plural number marker of the first person direct object
<u>nino</u>	:	verb stem
<u>∅</u>	:	perfective aspect, represented here by zero

This sentence illustrates several facts of Arikara grammar.

First, many verb themes consist of separable preverb and verb stem. Both transitive and intransitive verb themes may have separable preverbs. The majority of transitive and intransitive verb themes, however, consist only of a verb stem. Second, both subject and object nominals are obligatorily cross-referenced in the verb by prefixes introduced before the verb stem. As in many languages, third person singular subjects are not represented by overt phonological material. Finally, the shape of the modal prefix is determined by person of the subject. Third person subjects co-occur with

the indicative modal prefix ti-, while first and second person subjects co-occur with an alternative form of the indicative modal prefix ta-.

In the sample sentence, perfective aspect is represented by zero. We now consider two more sentences in order to bring out another significant feature of Arikara structure.

/ta+t+ \emptyset +ut+e.rik+ \emptyset wi.ta/ I see/saw the man.

ind-sbj-dir-pv-vs-prf dir
 obj asp obj

[tatu.te.rit wi.ta]

Its sentence-constituents are:

- ta : non-third subject form of the indicative modal prefix.
- t : first person singular pronominal subject form
- \emptyset : third person pronominal direct object form
- ut : separable preverb of the transitive verb theme
 ut...e.rik "to see."
- e.rik : verb stem "see"
- \emptyset : perfective aspect
- wi.ta : independent noun "man"; direct object nominal

Compare the preceding sentence with the following one:

/ta+t+ \emptyset +ut+e.rik+hu wi.ta/ I see(am seeing) the man.

ind-sbj-dir-pv-vs-imp dir
 obj asp obj

[tatu.te.riku? wi.ta]

The second sentence differs in only one respect: imperfective aspect is overtly realized by the suffix -hu. While a number of aspectual distinctions are made in Arikara, the category of tense is

quite undeveloped. The concern of Arikara structure with aspect, and the lack of concern with tense, does not imply any lack of clarity in speech. Tense distinctions that may be indicated morphologically in other languages are made lexically in Arikara by independent time-adverbs.

1.4 Outline of Grammatical Categories in Arikara

Jakobson (1971:130-147) presents a useful and insightful scheme for the classification of verbal categories in Russian. The scheme is adapted here to the description of verbal categories in Arikara.

Jakobson notes two basic distinctions in classifying verbal categories:

1. speech itself (S), and its topic, the narrated matter (n)
2. the event itself (E), and any of its participants (P)

On the basis of these distinctions, four items are distinguished: the narrated event (E^n), the speech event (E^S), the participants of the narrated event (P^n), and participants of the speech event (P^S). Jakobson (1971:133-134) further observes:

Any verb is concerned with a narrated event. Verbal categories may be subdivided into those which do and do not involve the participants of the event. Categories involving the participants may characterize either the participants themselves (P^n) or their relations to the narrated event (P^nE^n). Categories abstracting from the participants characterize either the narrated event itself (E^n) or its relations to another narrated event (E^nE^n). For categories characterizing only one narrated item--either the event (E^n) itself or its participants (P^n) themselves--the term DESIGNATORS will be used, while those categories which characterize a narrated (E^nE^n or P^nE^n) with respect to another narrated item (E^nE^n or P^nE^n) will be termed

CONNECTORS.

Designators indicate either the quality or the quantity of the narrated item and may be termed QUALIFIERS and QUANTIFIERS respectively.

Both designators and connectors may characterize the narrated event (procès de l'énoncé) and/or its participants either without or with reference to the speech event (procès de l'énonciation) (../E^s or its participants (../P^s). Categories implying such a reference are to be termed SHIFTERS; those without such a reference are NON-SHIFTERS.

With regard to these basic dichotomies any generic verbal category can be defined.

We may now list and characterize the concepts expressed in Arikara verbal forms. This description will serve to indicate the limits of the present study.

An Arikara verb form, to be grammatically complete, must be marked for the categories of mode, person, number and aspect, in that surface structural order. In the following discussion, however, the P-designators are summarized first - person and number; then the connectors in which P is involved - mode and voice; then designators in which P is not involved - tense and aspect; finally, connectors in which P is not involved - evidential and subordination. Shifters are treated before corresponding non-shifters. Marked categories are listed first, and are opposed to unmarked ones.

1. PERSON (PⁿPs): characterizes the participants of the narrated event with respect to the participants of the speech event. Person is therefore a shifter; the meaning of a shifter must be defined with respect to the context of the speech event. "Thus first person signals the identity of a participant of the narrated event with the performer of the speech event, and the second person,

the identity with the actual or potential undergoer of the speech event" (Jakobson 1971:134). Arikara contrasts personal forms ($P^n=PS$) with impersonal forms, that is, first and second vs. third person forms. Within the personal forms, there is a distinction in the first person between inclusive forms (signaling participation of the addressee) and exclusive forms (signaling lack of participation of the addressee).

2. NUMBER (P^n): characterizes the participants of the narrated event without reference to the speech event. Number is therefore a non-shifter. In Arikara, dual forms indicate that the membership in the P^n is restricted to two; plural (signaling plurality of P^n) is opposed to singular.

3. MOOD (P^nE^n/PS): "characterizes the relation between the narrated event and its participants with reference to the participants of the speech event" (Jakobson 1971:135).

Major modal oppositions in Arikara are:

(a) subjunctive vs. indicative. Subjunctives (designated by the prefixes a- and i- for personal and impersonal forms, respectively) indicate actions or events not realized as fact (whether they be wishes, or hypothetical or counterfactual statements); indicative forms are indicated by prefixes ta- and ti- for personal and impersonal forms, respectively. Negative indicative statements are designated by the prefixes ka.ka- and ka.ki- for personal and impersonal forms, respectively.

(b) potential vs. indicative. Potential forms are marked by the discontinuous prefixes kox...i, where i follows the subject pronoun. Thus:

[koxtiʔAt]

I will go.

/kox+t+i+at+Ø/

pot-sbj-vs-prf
asp

The potential designates simple future intended actions, possible and probable actions. It is also used as a hortative, somewhat less commanding than the regular imperative. The hortative carries a note of certainty that the action imposed on the addressee will indeed take place.

(c) imperative vs. indicative. Imperative forms signal that the EN is imposed upon the addressee. It is indicated in Arikara by the prefix -ux- which immediately precedes the verb stem. Distinctions of number and person are maintained in the imperative. Thus:

[šuxwi·tIt]

You(sg) sit down!

/š+ux+wi·tik+Ø/

sbj-impv-vs-prf
asp

[ši·šuxwi·tIt]

you(du) sit down!

/ši=š+ux+witik+Ø/

du-sbj-impv-vs-prf
asp

(d) interrogative vs. indicative. The interrogative is indicated by the prefix na- (many other grammatical functions are

served by prefixes of the same shape). This prefix co-occurs with interrogative words and prefixes. Thus:

[tiče·nxta·nuʔ]

What are you(sg) doing?

/tiče·nu na+x+ut+a·n+hu/

What sub-sbj-pv-vs-imp
pfx asp

(e) assertive vs. indicative. Assertive forms add emphasis to the Eⁿ. They are marked by prefixes ne·ne·- and ne·ni·- for personal and impersonal forms respectively. Thus, the contrast:

[tstaʔut]

I stole it.

/ta+t+Ø+tau·t+Ø/

ind-sbj-dir-vs-prf
obj asp

[ne·ne·titaʔut]

I stole it.

/ne·ne·+t+i+tau·t+Ø/

assert-sbj-vs-prf
asp

4. VOICE (PⁿEn): "characterizes the relation between the narrated event and its participants without reference to the speech event or to the speaker" (Jakobson 1971:135). The sole voice distinction is of reflexive vs. non-reflexive. Reflexive forms in Arikara are marked by the prefix witi-, which precedes the modal prefix. Transitive verbs in Arikara permit two primary Pⁿ, subject and direct object. Reflexive forms exclude the direct object, thus restricting participation in the narrated event to the grammatical subject, and thus they are intransitive.

[wititatu^hna·ni·hitku^ʔ]I am ritually smudging myself

/witi=ta+t+ut+na·ni·hitk+hu/

 refl-ind-sbj-pv-vs-imp
 asp

5. TENSE (EⁿE^s): characterizes the narrated event with reference to the time of utterance, and is thus a shifter. The sole tense contrast in Arikara is that of past vs. non-past. The marked past is indicated by the prefix -ux- which immediately precedes the verb stem. Compare:

[tatwa·wa^ʔa]I eat./ta+t=wa·waa+ \emptyset /
 ind-sbj-vs-prf
 asp
[tatuxwa·wa^ʔa]I ate./ta+t+ux+wa·waa+ \emptyset /
 ind-sbj-pas-vs-prf
 asp

6. ASPECT (Eⁿ): characterizes the temporal contour of the narrated event without involving the participants and without reference to the speech event; aspect is therefore a non-shifter. The primary aspectual contrast in Arikara is of perfective vs. imperfective while the secondary contrasts include habitual and inchoative notions.

(a) Perfective forms signify the completion of Eⁿ as opposed to imperfective forms, which signify action in progress or repeated action. Perfective aspect may be marked by zero, or by the suffix

-is. Perfective intensitive activity is designated by the perfective suffix -is and the intensitive suffix -ta.

[koxiko.tiʃta]

He will kill it.

/kox+Ø+i+ku.tik+is+ta/

pot-sbj-vs-prf-int
asp

(b) The marker of the imperfective is the suffix -hu; it may precede the habitual imperfective marker -u.ku. Thus:

[tatu.te.rikhu.kuʔ]

I see him (all the time,
many times).

/ta+t+Ø+ut+e.rik+hu+u.ku/

ind-sbj-dir-pv-vs-imp-hab
obj asp asp

Inchoative forms of most verbs are formed with the secondary suffix -itik. Inchoative forms of descriptive verbs, however, are designated by means of a special construction involving the stative verb stem a.n (see p. 70).

7. EVIDENTIAL (EnEnS/ES): this category takes into account the narrated event, the speech event, and a narrated speech event. It involves distinctions relating to the source of information about the narrated event, and judgments of the speaker as to the validity and probability of the narrated event. Evidential distinctions are not comprehensively listed here. The most important contrast in Arikara is that between a narrated event which the speaker has direct knowledge of (indicative) and narrated events which the speaker has not directly witnessed. Contrast:

[wetita[?]ut]He stole it./we+ti+ \emptyset +tau.t+ \emptyset /

adv-ind-sbj-vs	-prf
proc	asp

[ačiwetita[?]ut]He stole it (not witnessed)./ačⁱ=we=ti+ \emptyset +tau.t+ \emptyset /

evi-adv-ind-sbj-vs-prf
proc asp

Other evidentials include the quotative prefix wi-, which precedes the modal marker, and the inferential "probably," indicated lexically by the form [tiro.hu.[?]] and potential mode.

8. SUBORDINATION (EⁿEⁿ): this category characterizes the narrated event in relation to another narrated event, and without reference to the speech event. The principle contrast is between an event which is either anterior to the speech event or in some sense semantically contingent upon a first event, and therefore subordinated to it vs. two narrated events which are either simultaneous or of equal semantic salience, and therefore simply conjoined.

Simple conjunction is designated by the independent particle na "and"; subordination is designated by the verbal prefix na- and a subordinating suffix of the verb stem. Stems may be classed according to the subordinating suffix they employ: some take -a in subordinated perfective forms, others -i and still others, - \emptyset . In the following example, the verb stem at "to go" is among those that form subordinated constructions with the suffix -a:

[tatuhne·si·su[?] wi·ta na·tA] I know that the man went.

/ta+t+ \emptyset +ut+ne·siš+hu wi·ta na+ \emptyset +at+ \emptyset +a/

ind-sbj-dir-pv-vs-imp	dir	sub-sbj-vs-prf-sub
obj asp obj	px	asp suf

Infinitival constructions are formed with the pair of prefixes

na...ku. An example with the stem "to go" in a subordinated

infinitival construction is the following:

[tatuhna[?]it wi·tA nakuku·tata] I asked the man to go for me.

/ta+t+ \emptyset +ut+nait+ \emptyset wi·ta na+ku+ \emptyset +ku+ut+at+ \emptyset +a/

ind-sbj-dir-pv-vs-prf	dir	inf-sbj-ind-ben-vs-prf-sub
obj asp obj	obj	asp suf

1.5 Positional Summary of Elements in the Arikara Verb

We conclude our introduction to Arikara structure with a summary statement of positions of elements within the verb and an indication of the sorts of modifications elements in each position undergo.

It has already been noted that many verbs consist of separable preverb and stem. Grammatical elements may be conveniently classed according to whether they precede or follow the verb stem in surface structure. The generalized schema - PROCLITIC PREFIX STEM SUFFIX - summarizes the elements which occur in verbal constructions.

Of the grammatical elements discussed, the dual marker, the reflexive, negative elements, and adverbial proclitics occur in proclitic position. Other elements not discussed, but which occur in this position, include adverbial prefixes and a small number of

demonstrative prefixes. Proclitics are distinguished from prefixes by their lack of involvement in phonological processes. Proclitics are easily recognized and do not undergo modification; they are only very loosely integrated into the verb form. Prefixes, on the other hand, undergo extensive modification and are tightly integrated into the verb.

Prefixes may conveniently be distinguished from suffixes by the different kinds of conceptual information that each class conveys. Designators of participants (P-designators) are all prefixes, whether they be shifters (person) or non-shifters (number). Other prefixes not mentioned above (e.g., benefactive, possessive) all convey relational information about participants. The E-designators (designators of the narrated event) which occur before the verb stem are all shifters: mood, tense and evidential.

Suffixes convey information about the narrated event. The E-designators include aspect and subordination, both non-shifter categories. Table 1.1 (cf. Jakobson 1971:145) illustrates the interrelation of the grammatical concepts discussed.

Table 1.1

	<u>P involved</u> <u>Designator</u>	<u>Connector</u>	<u>P not involved</u> <u>Designator</u>	<u>Connector</u>
Quantifier:	Number	Voice	Aspect	Subordination
Shifter:	Person	Mood	Tense	Evidential
Shifter:				

This study focuses on the relationships of nouns to verbs, and therefore examines in detail the categories of number, person,

and voice. In keeping with its primary emphasis, it must also examine the determination of modal marking by personal features of nominals.

In closing, it should be remarked that transformational processes in the language are characterized by the introduction into the verb of information from the nominal constituents that designate participants; perhaps the outstanding characteristic of the language is its polysynthetic nature.

Chapter II

2.1 Basic Generalizations

The intent of this chapter is to present basic generalizations about Arikara phonological structure. Many of these generalizations are statable as segmental and sequential constraints on lexical matrices. Morpheme structure conditions of both types are examined first. Other generalizations are attributable to operations which convert surface structures generated by the syntactic component into a form appropriate for use by the phonological component. These operations, expressed as 'readjustment rules' (Chomsky and Halle 1968:10), have the primary effect of relating syntax to phonology by removing boundaries and making other modifications in surface structures. Finally, other generalizations are statable as phonological rules whose applicability is determined by phonological environments within and across morpheme boundaries. The application of phonological rules results in a phonetic level of representation.

2.2 Phonetic Representations

Arikara utilizes a total of twenty-six phonetic segments. Table 2.1 presents these phonetic segments, with their abbreviatory alphabetic representations, in terms of a distinctive feature matrix. The distinctive feature system used is that presented by Chomsky and Halle (1968) in The Sound Pattern of English.

The three major class features of the Chomsky-Halle system define the following classes of phonetic segments:

Vowels	[+ son, + syl, - con]
Semivowels	[+ son, - syl, - con]
Resonants	[+ son, - syl, + con]
Obstruents	[- son, - syl, + con]
Voiceless Glides	[- son, - syl, - con]

Each of these classes is set off in Table 2.1 by double vertical lines.

Vowels in the feature matrix are marked as universally tense, although there is in fact considerable phonetic variation in degree of tenseness of vowels. Phonetic detail rules accounting for distribution of tenseness are not considered in the present study. The following generalizations may be made concerning phonetic tenseness: voiceless vowels are always tense; phonetic long vowels, whether derived from underlying organic long vowels or secondarily lengthened, are universally tense. Vowels which are phonetically short but derive from underlying long vowels are tense. Stressed short vowels are more tense than their unstressed counterparts.

In addition to the five short and five long vowel segments, voiceless [A], [I], and [U] are included in the phonetic inventory. Vowel devoicing is not definitively treated in this study, although the problem of devoicing is examined in 2.8.

Of the four non-continuant obstruents, three are the lax, unaspirated stops p, t, and k. The apico-alveolar stop t and dorso-velar k may exhibit phonetic voicing to some degree, particularly during release, seemingly in anticipation of a following vowel.

Table 2.1 Arikara Phonetic Segments

[illegible]

In clusters preceding a second obstruent no voicing is observable. Considerable variation is also found in the phonetic voicing of the unaspirated lax alveo-palatal affricate č.

Continuant obstruents are the blade alveolar spirant s, the alveo-palatal spirant š, and the voiceless dorso-velar spirant x.

Non-consonantal sonorants include the high back rounded glide w, and the high front unrounded glide y. Consonantal sonorants are the voiced apico-alveolar tap r, and the voiced apico-alveolar nasal n.

The phonetic segments h and ʔ are characterized in the distinctive feature matrix as voiceless glides. The segment h is a voiceless laryngeal glide. Glottal stop only occurs phonetically; its insertion is accounted for by PR 25 and 26.

The suprasegmental phenomenon of pitch cited by Taylor (1963a:115) is clearly non-distinctive and constitutes a problem outside the scope of the present study. Stress assignment in Arikara appears to be a problem of considerable complexity, and is not definitively treated here (see 2.8).

The unusual nature of the phonetic inventory in Arikara is immediately apparent, partly because of the general poverty of the inventory (i.e., the absence of certain very common classes of sounds such as laterals, and the incompleteness of the consonantal series), and partly because of the distributional relationships existing among segments that are employed.

2.3 Distribution of Single Segments

Restrictions on the distribution of single segments may be stated in terms of their occurrence in morpheme-initial, medial, and final positions at the systematic phonemic level of representation.

Any single obstruent may occur in morpheme-initial or medial position at the systematic level. Any single obstruent may occur morpheme-finally except the stop p. The stop p and the bilabial glide w have in common the fact that they may not occur morpheme-finally. The velar stop k and the laryngeal glide h occur in all positions at the systematic level. Regular phonological rules account for the phonetic non-occurrence of both segments in word-final position. The absence of p and w phonetically in word-final position, however, is due to sequential morpheme structure constraints.

The resonants r and n may both occur medially and finally. Only n, however, occurs morpheme-initially at the systematic level.

The distribution of the semi-vowel y is extremely restricted. It occurs in a small number of morphemes as the second member of a cluster preceded by p or h. It never occurs as a single segment in any position at the systematic level.

The absolute sequential constraints may be stated as follows:

MSC 1. Neither p nor w occurs morpheme-finally at the systematic level.

MSC 2. The resonant r does not occur morpheme-initially at the systematic level.

An original Caddoan three-vowel system is only thinly concealed in Arikara (Taylor 1963a:129). The vowels e, e· and o, o·

occur much less frequently in all positions at the systematic level than do a, i, u, and their long counterparts. Neither e nor o was found to occur initially at the systematic level; e and o occur initially in a small number of morphemes. Many phonetic occurrences of e, e and o, o are the result of regular rules of vowel contraction (see PR 20, 21, and 22).

2.4 Morpheme Structure Conditions: Segmental Redundancy

The following segmental morpheme structure conditions state the segmental redundancies of Arikara lexical representations. Statement of the segmental redundancies in the distinctive feature matrix allows us to enter formatives in the lexicon in an abbreviated, non-redundant fashion.

MSC 3 states several redundancies for vowels, namely, that they are always sonorant, non-consonantal, and tense.

MSC 3 [+ syl]



+	son
-	con
+	tns

The next condition states that non-syllabic segments are also non-low, short, and non-tense.

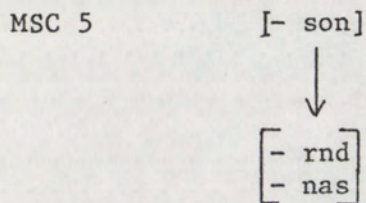
MSC 4 [- syl]



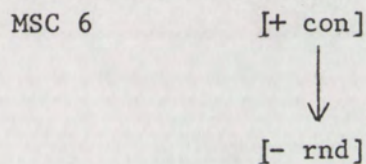
-	low
-	lng
-	tns

Redundancies in non-sonorant segments are captured by MSC 5,

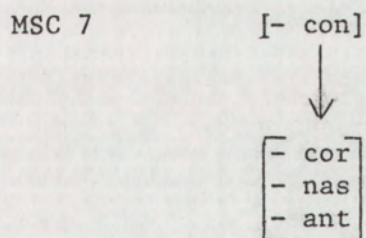
which states that non-sonorant segments may never be round or nasal.



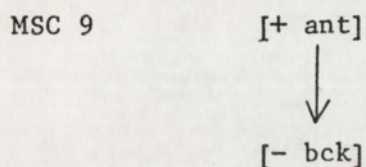
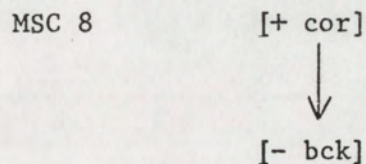
MSC 6 states that consonantal segments may never be round.



MSC 7 states that only consonantal segments may be coronal, nasal, or anterior.



MSC 8-11 capture relationships among the features coronal, anterior, back, high, and low. Segments that are anterior, coronal, or both, may not be back (MSC 8 and 9); segments that are back may be neither coronal nor anterior (MSC 10). Segments that are high may not be low (MSC 11).



MSC 10 [+ bck]



$\begin{bmatrix} - & \text{cor} \\ - & \text{ant} \end{bmatrix}$

MSC 11 [+ hgh]



[- low]

MSC 12 states that segments that are low are always non-high, non-round, and back.

MSC 12 [+ low]



$\begin{bmatrix} - & \text{hgh} \\ - & \text{rnd} \\ + & \text{bck} \end{bmatrix}$

MSC 13 states that consonantal segments always have opposite values for the features anterior and high.

MSC 13 $\begin{bmatrix} + & \text{con} \\ \alpha & \text{ant} \end{bmatrix}$



[- αhgh]

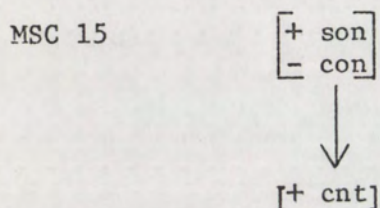
MSC 14 states that non-low sonorant segments have the same backness and roundness values; in other words, the roundness of these segments is predictable from their backness.

MSC 14 $\begin{bmatrix} + & \text{son} \\ - & \text{low} \\ \alpha & \text{bck} \end{bmatrix}$

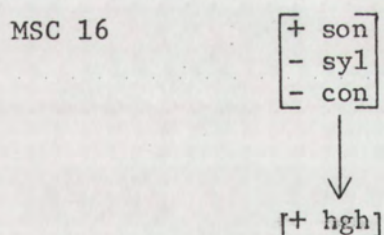


[α rnd]

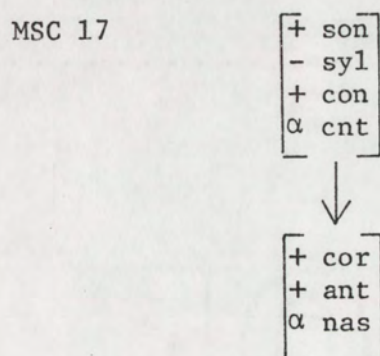
MSC 15 states that all non-consonantal sonorant segments are redundantly specified as continuant.



MSC 16 states that all non-syllabic, non-consonantal sonorants are high; in other words, the fact that the semivowels y and w are high is predictable from their specification for the three major class features.



MSC 17 states that non-syllabic, consonantal, sonorant segments have identical values for continuancy and nasality. This condition captures the fact that the continuant resonant n is nasal, while the non-continuant resonant r is not.



MSC 18 states that all sonorant segments are voiced.

MSC 18

[α son]



[α voi]

The last condition insures that the non-sonorant glide h is non-coronal, non-anterior, non-high, non-back, and continuant.

MSC 19

-	son
-	syl
-	con



-	cor
-	ant
-	hgh
-	bck
+	cnt

2.5 Intramorpheme Consonant Clusters

There are two types of consonant clusters that must be distinguished in Arikara: those that occur within morpheme boundaries (intramorphemic) and those that occur across morpheme boundaries (intermorphemic). Intermorphemic clusters constitute a set partially distinct from the set of possible intramorphemic clusters. In addition, the roster of intramorphemic clusters differs morpheme-initially, medially, and finally.

Although consonant clusters of both types (intramorphemic and intermorphemic) are not infrequent, the language exhibits the following tendencies: first, to limit clusters of either type to two segments; and second, to simplify clusters across morpheme boundaries by phonological rules which eliminate segments or lenite

one of the segments that enters into a cluster. Further attention is not given to intermorpheme clusters, since their behavior is predicted by phonological rules.

Attention is focused here on clusters that occur within morpheme boundaries, for it is in terms of these clusters that sequential morpheme structure conditions are defined. In order to clearly present the network of combinatorial possibilities, we must distinguish internal clusters that occur morpheme-initially, medially, and finally.

Constraints on possible underlying clusters in Arikara are not readily formulable in terms of general statements. The following two sequential conditions apply to underlying clusters in all positions:

MSC 20. There are no geminate clusters of non-syllabic segments.

MSC 21. The stop p cannot be the second element of a consonant cluster.

MSC 22. The velar spirant x cannot be the second element of a cluster.

MSC 23. The velar spirant x cannot be the first element of an initial or final cluster.

Table 2.2 presents the roster of morpheme-initial clusters of two segments which occur at the systematic phonemic level.

Table 2.2

	t	č	k	s	š	h	n	y
FIRST ELEMENT								
p				X		X		X
t				X	X	X		
k						X		
s	X	X	X		X	X	X	
š	X	X						
h								X

All sixteen underlying clusters may occur at the phonetic surface in initial position. In addition, two clusters occur phonetically which do not occur at the systematic level. The cluster šh- occurs in only one form (šhia? "Cippewa"), which is not analyzable at present. The phonetic cluster šk- in all cases appears to be the result of composition (e.g., škawIsakU "pestle"; its initial š- is the compound form of išU "hand").

There are two three-consonant clusters which occur in initial position: skh- (skhu·čitakuhu? "chair"), and tst- (tsto·hu? "water"). Of these, skh- may prove to be the result of composition, but tst- occurs at the systematic level.

The following sequential constraints capture the most significant facts concerning the set of possible initial clusters:

MSC 24. If either the first or second element is non-continuant, the other must be continuant.

MSC 25. If the second element is s, the first must be an anterior stop.

MSC 26. If the first or second element is ʃ, the other must be coronal.

MSC 27. If the first element is ʃ, the second must be non-continuant.

Further specification of constraints on initial clusters proves to be no more general than a simple listing of the possible clusters.

Table 2.3 presents the roster of medial intramorpheme clusters of two segments at the systematic level.

Table 2.3

	t	ʃ	k	s	h	n	w
p				X			
t			X				
k				X	X		
s			X				
ʃ	X		X				X
x	X		X				X
h	X		X			X	
r		X			X		
n				X	X		

All eighteen medial clusters occur phonetically in this position. Significant generalizations regarding medial intramorpheme clusters are captured by the following two sequential constraints:

MSC 28. If the second element of a medial cluster is a continuant obstruent, it is s.

MSC 29. If the second element of a medial cluster is a continuant obstruent, the first element is a non-coronal, non-continuant obstruent.

Table 2.4 presents the roster of possible morpheme-final clusters of two segments at the systematic level.

Table 2.4

FIRST ELEMENT	<u>t k s ʃ</u>			
	t	X	X	
	x			X
	h	X	X	X
	r			X
	n			X

2.6 Vowel Clusters

Vowel clusters consist of only two segments; never within morphemes are three vowels found in sequence. Table 2.5 presents a listing of the vowel clusters found at the systematic phonemic level.

Constraints on occurring vowel clusters are captured by the following morpheme structure conditions:

MSC 30. In a vowel cluster, only one of the two vowels may be long.

MSC 31. The segments o, o· do not occur in vowel clusters.

MSC 32. The segments e, e. may precede only back vowels.

MSC 33. The segments e, e., and i. do not occur as the second member of a cluster.

MSC 34. High back vowels may not precede high front vowels in a cluster.

MSC 35. With the exception of the cluster ii, front vowels do not occur in sequence.

Although considerations of symmetry predict the existence of the intramorpheme cluster iu, it is highly likely that a phonological rule (see PR 19 below) has eliminated all underlying clusters of this shape through lexical restructuring. The absence of the sequence ua may be due to insufficient data.

Table 2.5

FIRST ELEMENT		<u>i</u>	<u>i.</u>	<u>e</u>	<u>e.</u>	<u>u</u>	<u>u.</u>	<u>o</u>	<u>o.</u>	<u>a</u>	<u>a.</u>
	<u>i</u>	X					X			X	X
	<u>i.</u>					X				X	
	<u>e</u>					X				X	
	<u>e.</u>					X				X	
	<u>u</u>					X					
	<u>u.</u>					X				X	
	<u>o</u>										
	<u>o.</u>										
	<u>a</u>	X				X	X			X	X
	<u>a.</u>	X				X				X	

2.7 Readjustment Rules

Several readjustment rules are needed to alter shapes of underlying formatives to prepare surface structures for phonological interpretation. For the most part, the readjustment rules alter the shapes of prefixes representing specific grammatical categories. In Arikara, prefixes of the same shape may represent various grammatical categories. Formatives affected by the readjustment rules must therefore be specified as to function.

The prefixes in (preverb, third person plural subject, obviative) and sin (first person inclusive dual subject) lose their final -n when they precede any of the following morphemes: un (preverb, object possessor), ut (preverb, benefactive), and ux (past tense, imperative). The rule which accounts for this is represented as RR 1.

RR 1

$$\begin{bmatrix} \text{in} \\ \text{sin} \end{bmatrix} \longrightarrow \begin{bmatrix} \text{i} \\ \text{si} \end{bmatrix} / \left\{ \begin{array}{c} \text{un} \\ \text{ut} \\ \text{ux} \end{array} \right\}$$

Some sequences of vowels across morpheme boundaries do not contract in accordance with regular rules of vowel contraction (see PR 20 and 21). Ordinarily, the contraction of i+u across morpheme boundaries results in u. In certain prefix combinations, however, the sequence of vowels i+u across morpheme boundaries contracts to i. This statement applies to all instances of prefix-final -i that result from the application of RR 1; in addition, it applies to the i-final prefixes i.- (third person subjunctive) and ni (a prefix

employed in transitive paradigms where the direct or indirect object is third person, and in benefactive constructions; see Chapter III, sections 5 and 9). These i-final prefixes 'dominate' the initial u- of the morphemes un, ut, and ux. The effect of the readjustment rule is represented in RR 2 (a).

RR 2 (a)

$$+ \begin{Bmatrix} \text{si} \\ \text{i} \\ \text{ni} \\ \text{i.} \end{Bmatrix} + \begin{Bmatrix} \text{un} \\ \text{ut} \\ \text{ux} \end{Bmatrix} + \longrightarrow + \begin{Bmatrix} \text{si} \\ \text{i} \\ \text{ni} \\ \text{i.} \end{Bmatrix} + \begin{Bmatrix} \text{n} \\ \text{t} \\ \text{x} \end{Bmatrix} +$$

RR 2 (a) states that initial u- is deleted in morphemes preceded by the i-final prefixes listed in the rule.

By ordinary rules of vowel contraction, sequences of i+a and a+i across morpheme boundaries result in e-. Certain inter-morphemic sequences of i+a and a+i, however, result in a-. 'Dominant' a-morphemes include a (second person object), a (third person subject possessor), and ataku (first person inclusive plural object). When these morphemes are preceded by ti- (indicative modal prefix), or the i- of the discontinuous prefix representing potential mode kox...i, the combination of i+a results in a-. The effect of this readjustment is represented in RR 2 (b).

RR 2 (b)

$$\begin{Bmatrix} \text{ti} \\ \text{kox...i} \end{Bmatrix} + \begin{Bmatrix} \text{a} \\ \text{a} \\ \text{ataku} \end{Bmatrix} \longrightarrow \begin{Bmatrix} \text{t} \\ \text{kox} \end{Bmatrix} + \begin{Bmatrix} \text{a} \\ \text{a} \\ \text{ataku} \end{Bmatrix} +$$

The rule states that final i of the morphemes listed is deleted before the specified a-dominant morphemes.

When the a-dominant morphemes a (second person object) and a (third person subject possessor) precede in (preverb, alternate

benefactive prefix), the sequence a+i contracts to a·. RR 2 (c) represents the change effected by this readjustment. It states that initial i- of the appropriate morphemes is deleted when preceded by the listed a-dominant morphemes.

RR 2 (c)

$$\begin{Bmatrix} a \\ a \end{Bmatrix} + \begin{Bmatrix} in \\ in \end{Bmatrix} \longrightarrow \begin{Bmatrix} a \\ a \end{Bmatrix} + \begin{Bmatrix} n \\ n \end{Bmatrix}$$

Sequences of t+t across morpheme boundaries result in the dissimilation of the first t to s, yielding s+t. The formative ut (benefactive) becomes us when it precedes the past tense marker ux, although the usual conditions which result in the assibilation of t are not met. This readjustment is symbolized by RR 3.

RR 3

$$\{ut\} + \{ux\} \longrightarrow \{us\} + \{ux\}$$

The verb "to be" does not receive concrete phonological representation in non-subordinate form. Descriptive (predicate adjectival) themes consist of a verb stem and an abstract constituent BE. The presence of the formative BE determines the lengthening (if not already long) and reduplication of the stem-final vowel.

For example, the underlying form of the descriptive theme "to be red" is paha.t+BE. The form "it is red" surfaces as tipAha.ʔAt. Most descriptive themes exhibit surface lengthening and reduplication of the stem-final vowel. Others, however (e.g. tara.wiʃ "to be grey", and tare.ux "to be green") do not undergo

readjustment. There is apparently no way of predicting which descriptive stems are subject to this rule. The readjustment is expressed in transformational format by RR 4.

RR 4

$$\begin{array}{ccccccc} [VC_2^2] & + & BE & \longrightarrow & \left[\begin{array}{c} 1 \\ + \text{lng} \end{array} \right] & 1 & 2 & 3 & \emptyset \\ 12 & \text{VS} & 3 & 4 & & & & & \end{array}$$

The rule states that the final vowel of a verb stem immediately followed by the constituent BE is lengthened and reduplicated.

2.8 Phonological Rules

Two phonological rules are needed to account for the behavior of underlying sequences of identical consonants across morpheme boundaries.

When sequences of n+n or k+k occur across morpheme boundaries, one of the two consonants is deleted. PR 1 below deletes the first member of the sequence; this is an arbitrary choice that has no empirical consequences.

PR 1

$$\left[\begin{array}{c} n \\ k \end{array} \right] \longrightarrow \emptyset / \text{---} \left[\begin{array}{c} n \\ k \end{array} \right]$$

Examples of the effect of this rule are:

/ti+ \emptyset +ku+un+nino+ \emptyset /

[tiku.nino[?]]

ind-sbj-dir-pv-vs-prf
obj asp

He fears me.

/ta+x+ \check{c} iri.k+ka.ti.t+BE+ \emptyset /

[tAx \check{c} irikati.[?]It]

ind-sbj-bp-vs-BE-prf
poss asp

Your (sg) eyes are black.

When sequences of t+t occur across morpheme boundaries, the

first t dissimilates to s.

PR 2

$$t \longrightarrow s / ______ t$$

/ta+t+ \emptyset +tau.t+ \emptyset /

[tsta^hut]

ind-sbj-dir-vs-prf
obj asp

I stole it.

Underlying morpheme-final n becomes the glide h before morpheme-initial p, t, k, and w.

PR 3

$$n \longrightarrow h / ______ p, t, k, w$$

/ta+sin+wa.waa+ \emptyset /

[tsihwa.wa^ha]

ind-sbj-vs-prf
asp

We (incl du) eat.

/ta+t+a+ \emptyset +un+tau.t+ \emptyset /

[tatohta^hut]

ind-sbj-obj-dir-obj-vs-prf
poss obj pre asp

I stole yours (sg).

The stops t and k become the glide h before n. Thus, PR 3 and PR 4 account for many surface occurrences of the laryngeal glide.

PR 4

$$t, k \longrightarrow h / ______ n$$

Examples involving each stop are:

/i+tat+ni/

[itahni^h]

his sister

/ta+t+a+nak+nan+uh+ \emptyset /

[tatarahna.nu]

ind-sbj-ind-ind-dir-vs-prf
obj num obj asp

I gave them to you (pl).

Underlying n becomes the stop t following an obstruent.

PR 5

$$n \longrightarrow t / \begin{bmatrix} + \text{ con} \\ - \text{ syl} \\ - \text{ son} \end{bmatrix} ______$$

Similarly, w becomes p following an obstruent.

PR 6

$$w \longrightarrow p / \begin{bmatrix} + \text{ con} \\ - \text{ syl} \\ - \text{ son} \end{bmatrix} \text{---}$$

The velar stop k is deleted preceding an obstruent.

PR 7

$$k \longrightarrow \emptyset / \begin{bmatrix} + \text{ con} \\ - \text{ syl} \\ - \text{ son} \end{bmatrix} \text{---}$$

	/ta+x+nak+wa.waa+ \emptyset /	
PR 5	ta+x+tak+wa.waa+ \emptyset	
PR 6	ta+x+tak+pa.waa+ \emptyset	
PR 7	ta+x+ta+pa.waa+ \emptyset	
other rules	[tAxtapa.wa [?] a]	<u>You (pl) eat.</u>

The resonant n and laryngeal glide h ordinarily metathesize when they occur in that sequence. Since many prefixes are n-final, this rule produces many sequences of the type h+n.

PR 8

$$n+h \longrightarrow h+n$$

	/ta+t+un+he.r+ \emptyset /	
PR 8	ta+t+uh+ne.r+ \emptyset	
other rules	[tatuhne]	<u>I am good, handsome.</u>

However, in some environments which cannot yet be characterized adequately, metathesis does not occur. Further study may indicate whether failure to metathesize in some environments is due to interaction with other rules. An example where metathesis does not operate on the second sequence of n+h is the following:

	/ti+un+huna.n+he.r+ \emptyset /	
PR 8	ti+uh+nuna.n+he.r+ \emptyset	
other rules	[tuhnunane]	<u>The land is good.</u>

The laryngeal glide is also deleted before a morpheme-final consonant or consonant cluster in a verb.

PR 12

$$h \longrightarrow \emptyset / ____ C_1^2 +]_V$$

/ta+t+ahiht+BE+ \emptyset /

PR 12 ta+t+ahit+ \emptyset

other rules [ta·thit]

I am fat.

Restricting this rule to verbs appears to be necessary because of the large number of nouns which permit stem-final h before the absolutive suffix -č:

/čiwah+č/

[čiwahč]

fish

The laryngeal glide is deleted following a consonant across morpheme boundaries.

PR 13

$$h \longrightarrow \emptyset / [+ \text{con}] + ____$$

/ta+x+un+nak+hiwa.+ \emptyset /

PR 1 ta+x+u+nak+hiwa.+ \emptyset

PR 13 ta+x+u+nak+hiwa.+ \emptyset

other rules [tAxuna·kiwa]

You (pl) are good.

(This rule must be ordered to precede late truncation rules which may produce phonetic obstruent+h clusters, as in the example given for PR 12).

A fourth rule deleting laryngeal glides is somewhat more complex in that it also maps a preceding i onto its corresponding semivowel.

PR 14

$$\begin{bmatrix} + \text{con} \\ - \text{syl} \\ - \text{son} \end{bmatrix} i + h V$$

$$1 \quad 2 \quad 3 \quad 4 \quad 5 \longrightarrow 1 \quad \begin{bmatrix} 2 \\ - \text{syl} \end{bmatrix} \quad \emptyset \quad \emptyset \quad 5$$

noted above, this rule has apparently removed all intramorpheme iu sequences by lexical restructuring.

PR 19

$$\begin{bmatrix} \text{v} \\ + \text{ hgh} \\ - \text{ bck} \end{bmatrix} \longrightarrow \emptyset / \quad \begin{bmatrix} \text{v} \\ + \text{ hgh} \\ + \text{ bck} \end{bmatrix}$$

/ti+ \emptyset + \emptyset +un+nino+ \emptyset /

PR 19 t+ \emptyset + \emptyset +un+nino+ \emptyset

other rules [tunino?] He fears him.

PR 19 does not apply before the absolute suffix -u.

/awi+u/

awiu

other rules [awiu?] image, picture

In sequences of vowels across morpheme boundaries in which one element is high and the other low, the values mutually assimilate to produce long mid-vowels.

PR 20

$$\begin{bmatrix} \text{v} \\ + \text{ hgh} \end{bmatrix} \longrightarrow \begin{bmatrix} - \text{ hgh} \end{bmatrix} / \left\{ \begin{array}{l} \text{---} + \begin{bmatrix} \text{v} \\ + \text{ low} \end{bmatrix} \\ \begin{bmatrix} \text{v} \\ + \text{ low} \end{bmatrix} + \text{---} \end{array} \right\}$$

PR 21

$$\begin{bmatrix} \text{v} \\ + \text{ low} \end{bmatrix} \longrightarrow \begin{bmatrix} - \text{ low} \\ \text{bck} \\ \text{rnd} \end{bmatrix} / \left\{ \begin{array}{l} \text{---} + \begin{bmatrix} \text{v} \\ - \text{ hgh} \\ - \text{ low} \\ \text{bck} \end{bmatrix} \\ \begin{bmatrix} \text{v} \\ - \text{ hgh} \\ - \text{ low} \\ \text{bck} \end{bmatrix} + \text{---} \end{array} \right\}$$

Sequences of identical vowels collapse to a single long vowel by PR 22.

PR 22

$$V_1 + V_1 \longrightarrow V \cdot_1$$

The following examples reveal the effects of PR 20, 21,
and 22.

	/ta+t+a+un+Ø+tau.t+Ø/	
PR 20	ta+t+a+on+Ø+tau.t+Ø	
PR 21	ta+t+o+on+Ø+tau.t+Ø	
PR 22	ta+t+o.n+tau.t+Ø	
PR 3	ta+t+o.h+tau.t+Ø	
other rules	[tatchtaʔut]	<u>I stole yours (sg).</u>

	/ti+Ø+arik+Ø/	
PR 20	te+Ø+arik+Ø	
PR 21	te+Ø+erik+Ø	
PR 22	te.rik+Ø	
PR 16	te.rit+Ø	
other rules	[te.rIt]	<u>He is standing.</u>

	/ti+Ø+ku+un+nino+Ø/	
PR 1	ti+Ø+ku+u+nino+Ø	
PR 22	ti+Ø+ku.+nino+Ø	
other rules	[tiku.ninoʔ]	<u>He fears me.</u>

Two rules shorten long vowels in certain environments. The
first of these, PR 23, prohibits long vowels in word-final position.

PR 23

$V \longrightarrow [- \text{ lng}] / ___\#$

	/ta+t+un+he.r+Ø/	
PR 8	ta+t+uh+ne.r+Ø	
PR 17	ta+t+uh+ne.+Ø	
PR 23	ta+t+uh+ne	
	[tatuhne]	<u>I am good, handsome.</u>

PR 24 prohibits long vowels in closed syllables.

PR 24

$V \longrightarrow [- \text{ lng}] / ___\left\{ \begin{array}{l} + \text{ con} \\ - \text{ syl} \\ - \text{ son} \end{array} \right\} \#$
CC

	/ta+t+a+un+Ø+tau.t+Ø/	
PR 20	ta+t+a+on+Ø+tau.t+Ø	
PR 21	ta+t+o+on+Ø+tau.t+Ø	
PR 22	ta+t+o.n+Ø+tau.t+Ø	
PR 3	ta+t+o.h+Ø+tau.t+Ø	
PR 24	ta+t+oh+Ø+taut+Ø	
other rules	[tatohtaʔut]	<u>I stole yours (sg).</u>

As noted previously, glottal stop does not occur as a systematic phoneme. Two rules, PR 25 and PR 26, provide epenthetic glottal stops at the phonetic level.

PR 25

$$\emptyset \longrightarrow ? / v_1 \left[\begin{array}{c} v_1 \\ v \\ [- \text{ bck}] \end{array} \right]$$

PR 25 inserts a glottal stop between identical vowels; note that it must be ordered to follow PR 22. It also inserts a glottal stop between a vowel and a following long vowel, and between a vowel and a following non-back vowel.

	/kataro.piiʃ/	
PR 25	kataro.piʔiʃ	
	[kataro.piʔiʃ]	<u>Automobile</u>
	/ti+ku+pax+naa.n+hu/	
PR 5	ti+ku+pax+taa.n+hu	
PR 25	ti+ku+pax+ta a.n+hu	
other rules	[tikupAxtaʔa.nu]	<u>My head aches.</u>
	/kait/	
PR 25	kaʔit	
	[kaʔit]	<u>Salt</u>

PR 26 inserts a glottal stop after a short vowel in word-final position. This rule must precede PR 23 which shortens a long vowel in word-final position. PR 26 must also precede PR 11, which deletes word-final h.

PR 26

$$\emptyset \longrightarrow ? / \left[\begin{array}{c} v \\ - \text{ lng} \end{array} \right] ___\#$$

Thus, all final vowels that derive from underlying short vowels are followed phonetically by glottal stop, while final short vowels that derive from underlying long vowels are not.

The placement of stress in Arikara appears to be exceedingly complex, and at this time, no satisfactory statement of rules of stress placement can be given. Stress placement is closely related to problems of vowel devoicing and secondary vowel lengthening. All of these phenomena require further investigation before final phonetic forms can be satisfactorily accounted for.

An examination of verb paradigms indicates that a single primary stress must be recognized in any simple verb form (that does not contain an incorporated noun), irrespective of its length and constituent complexity. The unmarked position for primary stress is on the final vowel of the verb stem. Primary stress may never be shifted rightward of the verb stem, but other factors, thus far poorly understood, may move primary stress as far left as the pre-verb. Primary stress may never fall left of the preverb in such forms. Location of primary stress is signalled primarily by a raised pitch norm, with possible secondary amplitude differences. Other than the syllable that carries primary stress, remaining syllables are characterized by neutral pitch.

These generalizations do not hold true for verb forms with incorporated noun stem, however. In incorporated forms, one primary stress ordinarily falls on the final vowel of the verb stem, as is the case in unincorporated forms. Another primary stress also falls ordinarily on the noun stem, generally on the same syllable that is stressed in independent noun stems. However, it appears to be the case that a stress-adjustment rule may prevent primary stress from

falling on both noun and verb stems, if this would result in two primary stresses before word boundary. Compare the two forms involving the same verb theme ut...te, "to like".

/ta+t+Ø+in+ni+ut+te+Ø/	[tatnisteʔ]
ind-sbj-dir-pfx-pv-vs-prf obj asp	<u>I like it, him.</u>
/ta+t+in+ni+ut+aka+te+Ø/	[tatnitákAteʔ]
ind-sbj-pfx-pv-dir-vs-prf obj asp	<u>I like the house.</u>

Up to three primary stresses may fall on forms with incorporated nouns stems; in these forms, one primary stress may occur to the left of the noun stem.

/ta+t+Ø+un+huna·n+tau·t+Ø/	[tatúhnunáhtaʔut]
ind-sbj-obj-obj-dir-vs-prf poss pre obj asp	<u>I stole his land.</u>

At present no decision can be made whether primary stress placement is cyclical and sensitive to constituent structure, or is determined by one or more word-level rules.

The unmarked position for primary stress in noun stems also appears to be on the stem-final vowel. No matter how many syllables the stem contains, primary stress always falls on the stem-final vowel of nouns that take the absolutive suffixes -u or -ǵ. Primary stress on nouns that do not take one of these two suffixes tends to be penultimate.

Undoubtedly the problem of vowel devoicing cannot be understood until stress placement, devoicing, and secondary vowel lengthening are studied as intimately related phenomena. Voiceless

counterparts exist only for /a/, /i/, and /u/. When it is observed that surface short vowels which derive from underlying long vowels may never devoice, the fact that there are no voiceless [e] or [o] strongly suggests that these vowels are the product of either synchronic contractions of underlying vowel sequences, or that they truly derive from underlying /e/ or /o/ which represent fossilized contractions.

Vowels which receive primary stress never devoice. It is undoubtedly the case that stress placement precedes vowel devoicing. Because surface short vowels that derive from underlying long vowels are never subject to devoicing, it also seems to be the case that devoicing must precede shortening.

Devoicing occurs automatically in unstressed short vowels that precede word boundary. There is a contrast in this position between voiceless [A], [I], and [U], voiced [a], [i], and [u], and voiced [a], [i], and [u] followed by glottal stop:

/pitku/	[pitkU]	<u>Two</u>
/ti+Ø+ku+Ø+uh+Ø/	[tiku [?] u]	<u>He gave it to me.</u>
ind-sbj-ind-dir-vs-prf obj obj asp		
/huna.n+u/	[huna.nu [?]]	<u>1and</u>

Surface short vowels followed by glottal stop derive from underlying short vowels; insertion of the glottal stop is accounted for by PR 26. Final surface short vowels are presumably derived from underlying short vowel+h, as revealed in the example above. More commonly, however, final short vowels appear devoiced when not followed by

glottal stop. In some cases, the argument may be made on comparative grounds that phonetically final voiceless vowels are followed by a consonant. However, these final consonants are not recoverable synchronically in Arikara. In other cases it is plain that voiceless final vowels derive from underlying short vowels, as in the following examples:

/wa.wa+ <u>i</u> ʃta/	[wa.we.ʃA]	<u>to pound</u>
vs-sub suf		
/tau.t+ <u>i</u> /	[taʔu.tI]	<u>to steal</u>
vs-sub suf		

(Note in the examples that subordinating suffixes constitute an exception to the regular rule of final glottal insertion).

On the basis of examples like tikuʔu, "he gave it to me," it seems to be the case that final underlying h protects the stem-final vowel from undergoing devoicing; thus, devoicing must precede PR 11, which deletes h in word-final position. However, there are a few cases in which the final vowel of verb stem that end in h may be optionally devoiced when the stem is not followed by an overtly-represented suffix (contrast na.pihuʔ, imperfective form of "to buy," with na.pi or na.pI, perfective). We suggest that the phonological rules must be applied in the order glottal insertion, devoicing, and h-deletion, with optional reapplication of devoicing after h-deletion.

No definitive explanation can be offered at present to the contrast between final voiceless and plain voiced vowels. Interaction

with stress, or the possibility of local rule-ordering, constitute possible future approaches to this problem.

2.9 Problems

The preceding sections of this chapter are intended primarily as a brief sketch of Arikara phonology which will aid the reader in following underlying and surface forms cited in the remaining chapters. It is obvious from the forms and examples cited that many questions regarding the phonological component of a grammar of Arikara remain to be answered. Especially the problems of stress placement, vowel devoicing, and secondary vowel-lengthening require further intensive study.

Other substantive problems that are only mentioned here include the deletion of an initial underlying i- in some noun stems, the replacement of an underlying final -t by glottal stop in both verb and noun stems, onset development in noun stems, and exceptions to the regular rule of degemination of n+n across morpheme boundaries.

A small number of nouns has an initial s in independent form, but when these nouns are preceded by another morpheme in inflection or derivation, an underlying initial i- is revealed.

/na+isaru.x+ta+wa.+wi/	[ne.saruxtawa.wi]	<u>his cheeks</u>
sub-bp-loc-dis-sub pfx suf		
/isaru.x+u/	[saru.xuʔ]	<u>cheek</u>
/xa.#isu.n+u/	[xe.su.nuʔ]	<u>rust-colored</u> <u>horse</u>
/isu.n+u/	[su.nuʔ]	<u>porcupine</u>

/xa.#isahniʃ+Ø/	[xe.sahniʃ]	<u>Indian pony</u>
/isahniʃ+Ø/	[sahniʃ]	<u>Indian, Ree</u>

An initial unstressed i- is not always deleted, however, as shown by forms like isata.uʔ, "bread". The reason for deletion of initial i- in some cases and not others is not immediately apparent. It seems significant that there are relatively few noun or verb stems that begin with s.

Another feature which requires further investigation is the replacement of underlying t by glottal stop phonetically in a number of forms:

/ati+pat/	[atipaʔ]	my grandfather
/a+pat/	[apaʔ]	your grandfather

Taylor (1963a:126) also cites the phonetic form tire.waʔ "he is looking." The writer collected this same form with final phonetic t, possible evidence of dialect variation.

A number of nouns develop a laryngeal glide or glottal onset before an initial underlying unstressed vowel. Some examples of this development are:

/a+ax/	[ha.ʔ Ax]	<u>your father</u>
/i+ax+ni/	[hiʔaxtiʔ]	<u>his father</u>
/itkanahtu.s+u/	[hItkanahtu.suʔ]	<u>ashes</u>
/isis/	[hIsis]	<u>spider</u>
/ax#wi.t+u/	[ʔaxwi.tuʔ]	<u>hoof</u>

This feature cannot be predicted at present.

Sequences of n+n ordinarily result in the deletion of the initial member of the sequence (PR 1). Certain instances of the prefix combination in+ni constitute an exception to this rule. The sequence of prefixes in+ni+un found in possessive constructions conforms to the degemination rule (see Chapter VI, section 4). In the sequence of prefixes a+in+ni, where a is the irregular third person subject pronoun (see Chapter III, section 5), the final -n of the prefix in becomes the laryngeal glide h:

/ti+a+in+ni+ku+ut+Ø+nak+tau.t+Ø/

ind-sbj-pfx-ind-ben-dir-ind-vs-prf
obj obj asp

[tehnikuhahta?ut]

He stole it for us (excl pl).

This fact is probably expressible as a readjustment rule, but is left here as a problem which requires further investigation, along with the distribution of the irregular third person subject forms.

2.10 Boundaries and Notation

The Chomsky-Halle version of boundary theory admits at least three distinct boundary types: a universal formative boundary symbolized as +, a second universal boundary, the word boundary #, and a third boundary, required for an adequate treatment of English phonology, symbolized as =.

The formative boundary (+) is the weakest in the Chomsky-Halle hierarchy. The formative boundary is part of the representation of every formative in the lexicon (Chomsky and Halle 1968:364), and in this respect differs from word boundary, which Chomsky and Halle claim is inserted into the phonological string by a universal

rule (Chomsky and Halle 1968:366). The third (=) boundary in the Chomsky-Halle hierarchy is intermediate in strength between the formative and word boundaries, and is motivated on the basis of special boundary phenomena in English (Chomsky and Halle 1968:371).

In this study, + and # are adopted to symbolize formative and word boundaries respectively, as in the Chomsky-Halle system. The symbol = is reserved to designate proclitic boundaries, which must be distinguished from the other boundary types because proclitics are not subject to phonological processes. Lack of involvement in phonological processes sets proclitics apart from other formative classes. The proclitic boundary = is therefore useful to characterize the loose integration of proclitics into the verbal form.

Arikara examples provided in the text are set off by slashes (/ /) designating underlying forms, and brackets ([]) designating phonetic forms. In the separate tables, underlying forms are enclosed in slashes, but the accompanying phonetic forms are not distinguished by any diacritic marks. Since we are not presently able to predict vowel devoicing by regular rule, devoiced vowels are indicated in phonetic forms by upper-case letters.

Chapter III

3.1 Introduction

This chapter presents a description of basic syntactic constructions in Arikara. It is concerned only with characterizing the surface forms of basic intransitive and transitive sentences. The analysis of the abstract structures underlying these surface forms constitutes the subject matter of the following chapter.

We have characterized Arikara typologically as a fusional, polysynthetic incorporating language. Not unlike other American Indian languages, Arikara verb forms contain various grammatical elements which represent units of meaning derived from associated nouns. The derivation of surface sentences from the deep structures underlying them consists in large part of transformational processes which move information from associated noun nodes into the verb.

In Arikara, information pertaining to the person, case (in the broad sense of "grammatical function"), and number of subjects and objects is represented in surface structures by pronominal and other prefixal elements within the verb. It is the task of this chapter to outline the representation of these grammatical categories in transitive and intransitive sentences.

Intransitive constructions have only one primary noun phrase, the intransitive subject, associated with the verb. Intransitive

constructions are therefore simpler than transitive ones, which minimally contain two primary noun phrases associated with the verb in the functions of transitive subject and transitive object.

The theoretical problem arising from the representation of intransitive subjects in surface sentences is discussed in Chapter V. Suffice it to say here that the pronouns which represent transitive subjects and transitive objects form two distinct sets. Intransitive constructions fall into two sub-types, depending upon whether the intransitive subject is represented by the same set of pronouns employed to mark the transitive subject, or by the second set of pronouns employed to mark the transitive object. Thus, while the subject and object pronouns employed in transitive clauses are fundamentally distinct, intransitive subjects may be represented in surface sentences by the pronominal forms of either set. We refer to this phenomenon as split-intransitivity (Heath 1974). Intransitive verbs whose subjects are represented by subject pronouns are termed "active intransitives"; intransitive verbs whose subjects are represented by object pronouns are termed "stative intransitives."

3.2 Active Intransitives

The subjects of active intransitive verbs are represented by the following pronominal forms:

First person singular:	<u>t</u>
Second person singular:	<u>x</u>
Third person singular:	<u>Ø</u>

First person exclusive dual:	<u>š</u> i...t
First person inclusive dual:	<u>s</u> in
Second person dual:	<u>š</u> i...x
Third person dual:	<u>š</u> i...∅
First person exclusive plural:	<u>t</u> ...nak
First person inclusive plural:	<u>ta</u> ...nak
Second person plural:	<u>x</u> ...nak
Third person plural:	<u>in</u> ...∅

(The following abbreviations are used hereafter in all tables and examples to refer to these forms: first person singular, 1 sg; second person singular, 2 sg; third person singular, 3 sg; first person exclusive dual, 1 excl du; first person inclusive dual, 1 incl du; second person dual, 2 du; third person dual, 3 du; first person exclusive plural, 1 excl pl; first person inclusive plural, 1 incl pl; second person plural, 2 pl; third person plural, 3 pl).

Several observations may be made about these pronominal forms. Elements representing the categories of person and number are clearly distinguishable in most cases. First person is consistently represented by t, except in the first person inclusive dual; second person is represented by x, except in the first person inclusive plural and the first person inclusive dual, where second person in conjunction with first person is otherwise represented; third person is represented by ∅ in the singular and dual forms, and by in in the plural forms.

Plural number is separately marked for first and second persons by the prefix nak. In the third person plural, grammatical categories of person and number are coded by a single surface form.

The proclitic Si co-occurs with the markers of first, second, and third persons to mark dual number. Dual number is marked by Si in all forms except the first person inclusive dual. Person markers in the verb precede number markers (except the proclitic Si) in all cases where the two are distinct.

A paradigm of the active intransitive verb theme wa·waa "to eat" is presented in Table 3.1. The theme wa·waa is composed of a simple verb stem. Active intransitive verb themes may also be complex stems composed of preverb and verb stem. Illustrating the pronominal inflection of a complex active intransitive verb theme is the paradigm of un...he·r "to be good" in Table 3.2. The plural number stem form in the paradigm, hiwa·, is suppletive. The element -wa· of the suppletive plural form is found elsewhere with a distributive meaning. In complex themes, person markers precede the preverb, and number markers follow it. In Table 3.2, the third person plural is not overtly represented when the suppletive stem itself expresses plurality of the subject.

In addition to wa·, another distributive marker which occurs in plural number forms of active intransitive and other verb themes is ru·. The singular form of the verb stem "to sit down" is wi·tik; the form of the stem for nonsingular subjects is wi·ru·tik.

Table 3.1

Active Intransitive Paradigm, wa.waa "to eat"

<u>Sg Sbj</u>			
1 sg	/tat+tt+wa.waa+Ø/	tatwa.waʔa	<u>I eat</u>
2 sg	/ta+x+wa.waa+Ø/	tAxwa.waʔa	<u>you (sg) eat</u>
3 sg	/ti+Ø+wa.waa+Ø/	tiwa.waʔa	<u>he eats</u>
<u>Du Sbj</u>			
1 excl du	/ʔi=tat+tt+wa.waa+Ø/	ʔitawatwa.waʔa	<u>we (excl du) eat</u>
1 incl du	/ta+sin+wa.waa+Ø/	tshwa.waʔa	<u>we (incl du) eat</u>
2 du	/ʔi=ta+x+wa.waa+Ø/	ʔitAxwa.waʔa	<u>you (du) eat</u>
3 du	/ʔi=ti+Ø+wa.waa+Ø/	ʔitiwa.waʔa	<u>they (du) eat</u>
<u>Pl Sbj</u>			
1 excl pl	/ta+tt+nak+wa.waa+Ø/	tAhna.pa.waʔa	<u>we (excl pl) eat</u>
1 incl pl	/ta+ta+nak+wa.waa+Ø/	tatara.pa.waʔa	<u>we (incl pl) eat</u>
2 pl	/ta+x+nak+wa.waa+Ø/	tAxta.pa.waʔa	<u>you (pl) eat</u>
3 pl	/ti+in+wa.waa+Ø/	tihwa.waʔa	<u>they (pl) eat</u>

Table 3.2

Active Intransitive Paradigm, un...he.r "to be good"

<u>Sg Sbj</u>				
1 sg	/ta+t+un+he.r+Ø/	tatuhne	<u>I am good</u>	
2 sg	/ta+x+un+he.r+Ø/	tAxuhne	<u>you (sg) are good</u>	
3 sg	/ti+Ø+un+he.r+Ø/	tuhne	<u>he is good</u>	
<u>Du Sbj</u>				
1 excl du	/ʔi=ta+t+un+he.r+Ø/	ʔitaturhne	<u>we (excl du) are good</u>	
1 incl du	/ta+sin+un+he.r+Ø/	tsihne	<u>we (incl du) are good</u>	
2 du	/ʔi=ta+x+un+he.r+Ø/	ʔitAxuhne	<u>you (du) are good</u>	
3 du	/ʔi=ti+Ø+un+he.r+Ø/	ʔituhne	<u>they (du) are good</u>	
<u>Pl Sbj</u>				
1 excl pl	/ta+t+un+nak+hiwa.+Ø/	tatuna.kiwa	<u>we (excl pl) are good</u>	
1 incl pl	/ta+ta+un+nak+hiwa.+Ø/	tato.na.kiwa	<u>we (incl pl) are good</u>	
2 pl	/ta+x+un+nak+hiwa.+Ø/	tAxuna.kiwa	<u>you (pl) are good</u>	
3 pl	/ti+Ø+un+hiwa.+Ø/	tuhniwa	<u>they (pl) are good</u>	

Some active intransitive verb themes have only a single nonsingular suppletive stem forms; others have separate suppletive dual and plural stems (e.g., at "to go", singular subject; wan, dual subjects; wo, plural subjects). The use of suppletive stem forms and distributive markers to indicate nonsingular subject number is limited to the active intransitive paradigm; no examples have been found of suppletive nonsingular stems of stative intransitive verb themes.

The modal marker agrees with person features of the active intransitive subject. The indicative modal marker in forms with non-third person subjects is ta-; in forms with third person subjects, it is ti-.

3.3 Stative Intransitives

The pronominal forms employed to represent the subjects of stative intransitive verb themes are the following:

1 sg	<u>ku</u>
2 sg	<u>a</u>
3 sg	<u>∅</u>
1 excl du	<u>ši...ku</u>
1 incl du	<u>saku</u>
2 du	<u>ši...a</u>
3 du	<u>ši...∅</u>
1 excl pl	<u>ku...nak</u>
1 incl pl	<u>ataku...nak</u>
2 pl	<u>a...nak</u>
3 pl	<u>in...nak</u>

A paradigm illustrating the inflection of the stative intransitive verb theme his+ta·hiš "to be thirsty" is presented in Table 3.3.

The set of pronouns employed to represent stative intransitive subjects is, with the exception of the third person plural, the same set that marks the objects of transitive verbs. The third person plural is represented in stative intransitives by the person marker in and the number marker nak; the third person plural (animate) object of transitive verbs is represented by ak, with no separate marker of person. In the active intransitive paradigm, nak marks plural number of first and second persons. Only in the stative intransitive paradigm is nak employed to pluralize all three persons.

In the active intransitive paradigm, the form of the indicative modal marker ti- co-occurs with third person subjects. In the stative intransitive paradigm, all persons co-occur with the ti- form of the indicative modal marker.

Only one complex stative verb theme (un...na·xih "to be sick") occurs in the data; all others are simple stems. A number of stative stems are clearly morphologically related to complex transitive verb themes (e.g., nino "to be afraid," stative; un...nino "to fear," transitive).

For the most part, stative themes designates "states" or "conditions," rather than "processes" (see Chapter V).

Table 3.3

Stative Intransitive Paradigm, hiŋta·hiŋ "to be thirsty"

<u>Sg Sbj</u>			
1 sg	/ti+ku+hiŋta·hiŋ+Ø/	tikuhiŋta·hiŋ	<u>I am thirsty</u>
2 sg	/ti+a+hiŋta·hiŋ+Ø/	tahiŋta·hiŋ	<u>you (sg) are thirsty</u>
3 sg	/ti+Ø+hiŋta·hiŋ+Ø/	tihŋta·hiŋ	<u>he is thirsty</u>
<u>Du Sbj</u>			
1 excl du	/ŋi=ti+ku+hiŋta·hiŋ+Ø/	ŋitikuhiŋta·hiŋ	<u>we (excl du) are thirsty</u>
1 incl du	/ti+saku+hiŋta·hiŋ+Ø/	tsakuhiŋta·hiŋ	<u>we (incl du) are thirsty</u>
2 du	/ŋi=ti+a+hiŋta·hiŋ+Ø/	ŋitahiŋta·hiŋ	<u>you (du) are thirsty</u>
3 du	/ŋi=ti+Ø+hiŋta·hiŋ+Ø/	ŋitihŋta·hiŋ	<u>they (du) are thirsty</u>
<u>Pl Sbj</u>			
1 excl pl	/ti+ku+nak+hiŋta·hiŋ+Ø/	tikura·kiŋta·hiŋ	<u>we (excl pl) are thirsty</u>
1 incl pl	/ti+atakut+nak+hiŋta·hiŋ+Ø/	tatakura·kiŋta·hiŋ	<u>we (incl pl) are thirsty</u>
2 pl	/ti+a+nak+hiŋta·hiŋ+Ø/	tara·kiŋta·hiŋ	<u>you (pl) are thirsty</u>
3 pl	/ti+in+nak+hiŋta·hiŋ+Ø/	ti·na·kiŋta·hiŋ	<u>they (pl) are thirsty</u>

3.4 Inchoative Aspect of Descriptive Verb Themes

Descriptive verb themes are distinguished by the presence of an underlying abstract formative BE, which in most cases conditions the lengthening and reduplication of the stem-final vowel (see p. 43).

Descriptive verbs form the inchoative aspect with the stative intransitive theme a.n "to become" (morphologically related to the complex verb theme ut...a.n "to do") suffixed to the descriptive stem. In all aspects but the inchoative, the subjects of descriptive verb themes are represented by the subject pronouns. In the inchoative aspect (inch), descriptive stems are inflected with the object pronouns that are employed in the inflection of stative intransitive verb themes.

The following partial paradigms of the descriptive themes na.nih[✓]+BE "to be old", and ahiht+BE "to be fat", illustrate their inflection in the perfective aspect.

/we=ta+t+na.nih [✓] +BE+Ø/ adv-ind-sbj-vs-BE-prf proc asp	[wetAhna.nih [✓]]	<u>I am old.</u>
/we=ta+x+na.nih [✓] +BE+Ø/ adv-ind-sbj-vs-BE-prf proc asp	[wetAxta.nih [✓]]	<u>You (sg) are old.</u>
/we=ti+Ø+na.nih [✓] +BE+Ø/ adv-ind-sbj-vs-BE-prf proc asp	[wetira.nih [✓]]	<u>He is old.</u>
/we=ta+t+ux+na.nih [✓] +BE+Ø/ adv-ind-sbj-pas-vs-BE-prf proc asp	[wetatuxta.nih [✓]]	<u>I was old.</u>

/we=ta+x+ux+na.nihč+BE+Ø/ adv-ind-sbj-pas-vs-BE-prf proc asp	[wetAxuxta.nihč]	<u>You (sg) were old.</u>
/we=ti+Ø+ux+na.nihč+BE+Ø/ adv-ind-sbj-pas-vs-BE-prf proc asp	[wetuxta.nihč]	<u>He was old.</u>
/ta+t+ahiht+BE+Ø/ ind-sbj-vs-BE-prf asp	[ta.thit]	<u>I am fat.</u>
/ta+x+ahiht+BE+Ø/ ind-sbj-vs-BE-prf asp	[ta.xhit]	<u>You (sg) are fat.</u>
/ti+Ø+ahiht+BE+Ø/ ind-sbj-vs-BE-prf asp	[te.hit]	<u>He is fat.</u>

In the following examples in the inchoative aspect, the object pronouns represent the subject, and the stative stem a.n is suffixed to the descriptive stem.

/we=ti+ku+na.nihč+a.n+hu/ adv-ind-sbj-vs-inch-imp proc asp	[wetikura.nIča.nuʔ]	<u>I am getting old.</u>
/we=ti+a+na.nihč+a.n+hu/ adv-ind-sbj-vs-inch-imp proc asp	[wetara.nIča.nuʔ]	<u>You (sg) are getting old.</u>
/we=ti+Ø+na.nihč+a.n+hu/ adv-ind-sbj-vs-inch-imp proc asp	[wetira.nIča.nuʔ]	<u>He is getting old.</u>
/we=ti+ku+ahiht+a.n+hu/ adv-ind-sbj-vs-inch-imp proc asp	[wetikohIta.nuʔ]	<u>I am getting fat.</u>

/we=ti+a+ahiht+a.n+hu/	[weta.hIta.nu?]	<u>You (sg) are</u> <u>getting fat.</u>
adv-ind-sbj-vs-inch-imp proc asp		
/we=ti+Ø+ahiht+a.n+hu/	[wete.hIta.nu?]	<u>He is getting</u> <u>fat.</u>
adv-ind-sbj-vs-inch-imp proc asp		

3.5 Person Agreement in Transitive Verbs

Transitive verb themes are inflected to agree with two primary noun constituents in the functions of transitive subject and transitive object.

Pronouns in the verb marking subject person always precede those marking object person. Markers of object number occur in surface structures in a position immediately preceding the verb stem. In complex stems object number markers occur between the preverb and verb stem.

The transitive object is always represented by the same object pronouns employed in the inflection of stative intransitives, with the exception of the third person plural forms. The third person plural direct object form is ak for animate direct objects, nan for inanimate direct objects.

Person of the transitive subject is represented by the same subject pronouns employed in the inflection of active intransitives, with the exception of the first person inclusive plural. Thus, first person is represented by t in the first person singular, first person exclusive dual, and first person exclusive plural; second person is represented by x in the second person singular, second

person dual, and second person plural; third person is represented by Ø in the third person singular, dual, and plural (with non-third objects); third person plural is represented by in with third person objects; person of the first person inclusive dual and plural are represented by sin.

Number of the transitive subject is not represented as is number of active intransitive subjects. Instead, in transitive paradigms, dual and plural subject number are neutralized, and the dual is marked. Nonsingular number (dual and plural) of transitive subjects is thus marked by the proclitic dual-marker ši. Because of neutralization of dual-plural number, many transitive verb forms may have several interpretations, depending upon whether ši is construed to represent dual or plural number of the transitive subject.

ši is also employed to mark dual number of transitive objects; however, ši may occur only once in any surface form. For this reason, verbal forms containing ši may have several additional readings, depending upon whether ši is interpreted to represent number of the transitive object, of the transitive subject, or both.

Representation of third person categories in transitive paradigms requires special comment. Third person singular subjects are represented by Ø. Third person singular objects are also generally represented by Ø, but may be represented by the obviative marker in (designating a "second" third person) in forms with third person singular subjects. The obviative marker never occurs in transitive

forms with first or second person subjects.

Person of the third person plural transitive subject is represented by Ø in forms with non-third person direct objects.

With third person (singular or nonsingular) direct objects, person of the third person plural is represented by in.

The object pronouns in transitive paradigms are the following:

1 sg	<u>ku</u>
2 sg	<u>a</u>
3 sg	<u>Ø</u>
1 excl du	<u>ši...ku</u>
1 incl du	<u>saku</u>
2 du	<u>ši...a</u>
3 du	<u>ši...Ø</u>
1 excl pl	<u>ku...nak</u>
1 incl pl	<u>ataku...nak</u>
2 pl	<u>a...nak</u>
3 pl (anim)	<u>Ø...ak</u>
3 pl (inanim)	<u>Ø...nan</u>

The subject pronouns in transitive paradigms are the following:

1 sg	<u>t</u>
2 sg	<u>x</u>
3 sg	<u>Ø</u>
1 excl du	<u>ši...t</u>
1 incl du	<u>sin</u>
2 du	<u>ši...x</u>

3 du	<u>š</u> i...Ø	
1 excl pl	<u>š</u> i...t	
1 incl pl	<u>š</u> i...sin	
2 pl	<u>š</u> i...x	
3 pl	<u>š</u> i...Ø	(non-third objects)
3 pl	<u>š</u> i...in	(third objects)

Tables 3.4 and 3.5 present the possible subject-object combinations in transitive paradigms. Forms with singular subjects are presented in 3.4 and forms with dual or plural subjects in 3.5. Subject forms are separated from following object forms by a hyphen (-) where possible. In some cases it is not possible to separate subject and object forms in this way because ši, since it occurs in proclitic position, in many instances is separated from the object person marker whose number it represents. Also, a single surface occurrence of ši may be marking number of both subject and object. Therefore, in cases where ši does not represent number features of the immediately following subject pronoun only, it is simply set off by hyphens.

Forms with coreferential subject and object are indicated in the chart as reflexive (refl); reflexivization is discussed in the following section. Forms which do not occur because of partially overlapping membership of person features in the subject and object are indicated by a series of hyphens (-----). Animate direct object forms are abbreviated (anim); inanimate direct object forms are abbreviated (inanim).

Table 3.4

Subject-Object Pronominal Combinations in Transitive Paradigms

Singular Subject

Sg Sbj	1	2	3
<u>Sg Obj</u>			
1	refl	x-ku	Ø-ku
2	t-a	refl	Ø-a
3	t-Ø	x-Ø	Ø-Ø
			Ø-in (obv)
			refl
<u>Du Obj</u>			
1 excl du	-----	Yi-x-ku	Yi-Ø-ku
1 incl du	-----	-----	Ø-saku
2 du	Yi-t-a	-----	Yi-Ø-a
3 du	Yi-t-Ø	Yi-x-Ø	Yi-Ø-Ø
<u>Pl Obj</u>			
1 excl pl	-----	x-ku...nak	Ø-ku...nak
1 incl pl	-----	-----	Ø-ataku...nak
2 pl	t-a...nak	-----	Ø-a...nak
3 pl	t-Ø...ak (anim)	x-Ø...ak (anim)	Ø-Ø...ak (anim)
	t-Ø...nan (inanim)	x-Ø...nan (inanim)	Ø-Ø...nan (inanim)

Table 3.5

Subject-Object Pronominal Combinations in Transitive Paradigms

Nonsingular Subject

Sbj	1 excl	1 incl	2	3
<u>Sg Obj</u>				
1	-----	-----	Si...x-ku	Si...Ø (du)
2	Si...t-a	-----	-----	Si...Ø-a
3	Si...t-Ø	sin-Ø (du)	Si...x-Ø	Si...Ø-Ø (du)
<u>Du Obj</u>				
1 excl du	refl	-----	Si-x-ku	Si-Ø-ku
1 incl du	-----	refl	-----	Ø-saku
2 du	Si-t-a	-----	refl	Si-Ø-a
3 du	Si-t-Ø	Si...sin-Ø	Si-x-Ø	Si...in-Ø refl
<u>Pl Obj</u>				
1 excl	refl	-----	Si...x-ku...nak	Si...Ø-ku...nak
1 incl	-----	refl	-----	Si...Ø-ataku...nak
2 pl	Si...t-a...nak	-----	refl	Si...Ø-a...nak
3 pl	Si...t-Ø...ak	Si...sin-ak	Si...x-Ø...ak	Si...in-Ø...ak
	Si...t-Ø...nan	Si...sin-nan	Si...x-Ø...nan	Si...in-Ø...nan refl

Table 3.6 presents the paradigm of the transitive verb theme un...nino "to fear". Singular subject forms are presented before dual and plural subject forms. In the few cases where dual and plural subject forms differ, they are listed separately in the table.

The transitive paradigm in Table 3.6 may be termed a "regular" transitive paradigm. A small number of transitive verbs differ from the regular paradigm in pronominal inflection for third person subjects. Some of these verbs also exhibit additional prefixes which vary with object person throughout the paradigm.

An example of an "irregular" transitive is the verb theme ut...te "to like". The singular subject forms of the verb suffice to illustrate the irregularity; they are presented in Table 3.7. In addition to the preverb and verb stem, an additional prefix in precedes the preverb in all forms with third person subjects and non-third objects, and in all forms with non-third subjects and objects. In forms with non-third subjects and third person objects, the sequence of prefixes in+ni precedes the preverb. In forms with third person subjects and objects, the prefix in precedes the preverb, and the third person subject is represented by the pronominal form a. These observations may be summarized as follows:

<u>subject and object person</u>	<u>prefix</u>
subjects of all persons acting on non-third objects	<u>in</u>
non-third subjects acting on third person objects	<u>in+ni</u>
third subjects acting on third person objects	<u>in</u> (with "irregular" subject form <u>a</u>)

Table 3.6

Transitive Paradigm, un...nino "to fear"

<u>Sg Sbj</u>		<u>Gloss</u>
1-2 sg	/tatt+at+unt+nino+ \emptyset /	I fear you (sg)
1-3 sg	/tatt+ \emptyset +unt+nino+ \emptyset /	I fear him
1-2 du	/ $\text{\textcircled{X}}$ i=tatt+at+unt+nino+ \emptyset /	I fear you (du)
1-3 du	/ $\text{\textcircled{X}}$ i=tatt+ \emptyset +unt+nino+ \emptyset /	I fear them (du)
1-2 pl	/tatt+at+unt+nak+nino+ \emptyset /	I fear you (pl)
1-3 pl	/tatt+ \emptyset +unt+nak+nino+ \emptyset /	I fear them (pl)
2-1 sg	/tat+x+kut+unt+nino+ \emptyset /	you (sg) fear me
2-3 sg	/tat+x+ \emptyset +unt+nino+ \emptyset /	you (sg) fear him
2-1 excl du	/ $\text{\textcircled{X}}$ i=tat+x+kut+unt+nino+ \emptyset /	you (sg) fear us (excl du)
2-3 du	/ $\text{\textcircled{X}}$ i=tat+x+ \emptyset +unt+nino+ \emptyset /	you (sg) fear them (du)
2-1 excl pl	/tat+x+kut+unt+nak+nino+ \emptyset /	you (sg) fear us (excl pl)
2-3 pl	/tat+x+ \emptyset +unt+nak+nino+ \emptyset /	you (sg) fear them (pl)
3-1 sg	/ti+ \emptyset +kut+unt+nino+ \emptyset /	he fears me
3-2 sg	/ti+ \emptyset +at+unt+nino+ \emptyset /	he fears you (sg)
3-3 sg	/ti+ \emptyset + \emptyset +unt+nino+ \emptyset /	he fears him
3-3 sg (obv)	/ti+ \emptyset +in+unt+nino+ \emptyset /	he fears him
3-1 excl du	/ $\text{\textcircled{X}}$ i=ti+ \emptyset +kut+unt+nino+ \emptyset /	he fears us (excl du)
3-1 incl du	/ti+ \emptyset +sakut+unt+nino+ \emptyset /	he fears us (incl du)
3-2 du	/ $\text{\textcircled{X}}$ i=ti+ \emptyset +at+unt+nino+ \emptyset /	he fears you (du)
3-3 du	/ $\text{\textcircled{X}}$ i=ti+ \emptyset + \emptyset +unt+nino+ \emptyset /	he fears them (du)
3-1 excl pl	/ti+ \emptyset +kut+unt+nak+nino+ \emptyset /	he fears us (excl pl)
3-1 incl pl	/ti+ \emptyset +atakut+unt+nak+nino+ \emptyset /	he fears us (incl pl)
3-2 pl	/ti+ \emptyset +at+unt+nak+nino+ \emptyset /	he fears you (pl)
3-3 pl	/ti+ \emptyset + \emptyset +unt+nak+nino+ \emptyset /	he fears them (pl)

Table 3.6 (cont)

Du-P1 Sbj	Gloss			
1 excl du/pl-2 sg	/ʃi=ta+t+at+unt+nino+Ø/	ʃitato·nino?	we fear you (sg)	
1 excl du/pl-3 sg	/ʃi=ta+t+Ø+unt+nino+Ø/	ʃitatunino?	we fear him	
1 incl du-3 sg	/ta+sin+Ø+unt+nino+Ø/	tsi·nino?	we fear him	
1 incl pl-3 sg	/ʃi=ta+sin+Ø+unt+nino+Ø/	ʃitsi·nino?	we fear him	
1 excl du/pl-2 du	/ʃi=ta+t+at+unt+nino+Ø/	ʃitato·nino?	we fear you (du)	
1 excl du/pl-3 du	/ʃi=ta+t+Ø+unt+nino+Ø/	ʃitatunino?	we fear them (du)	
1 incl du-3 du	/ʃi=ta+sin+Ø+unt+nino+Ø/	ʃitsi·nino?	we fear them (du)	
1 incl pl-3 du	/ʃi=ta+sin+Ø+unt+nino+Ø/	ʃitsi·nino?	we fear them (du)	
1 excl du/pl-2 pl	/ʃi=ta+t+at+unt+nak+nino+Ø/	ʃitato·nahnino?	we fear you (pl)	
1 excl du/pl-3 pl	/ta+sin+Ø+unt+nak+nino+Ø/	tsi·nahnino?	we fear them (pl)	
1 incl pl-3 pl	/ʃi=ta+sin+Ø+unt+nak+nino+Ø/	ʃitsi·nahnino?	we fear them (pl)	
2 du/pl-1 sg	/ʃi=ta+x+ku+unt+nino+Ø/	ʃitAxku·nino?	you fear me	
2 du/pl-3 sg	/ʃi=ta+x+Ø+unt+nino+Ø/	ʃitAxunino?	you fear him	
2 du/pl-1 excl du	/ʃi=ta+x+ku+unt+nino+Ø/	ʃitAxku·nino?	you fear us (excl du)	
2 du/pl-1 excl pl	/ʃi=ta+x+Ø+unt+nino+Ø/	ʃitAxunino?	you fear them (du)	
2 du/pl-3 pl	/ʃi=ta+x+Ø+unt+nak+nino+Ø/	ʃitAxunahnino?	you fear them (pl)	
3 du/pl-1 sg	/ʃi=ti+Ø+ku+unt+nino+Ø/	ʃitiku·nino?	they fear me	
3 du/pl-2 sg	/ʃi=ti+Ø+at+unt+nino+Ø/	ʃito·nino?	they fear you (sg)	
3 du-3 sg	/ʃi=ti+Ø+unt+nino+Ø/	ʃitunino?	they fear him	
3 du/pl-1 excl du	/ʃi=ti+Ø+ku+unt+nino+Ø/	ʃitiku·nino?	they fear us (excl du)	
3 du/pl-1 incl du	/ʃi=ti+Ø+saku+unt+nino+Ø/	ʃitsaku·nino?	they fear us (incl du)	
3 du/pl-2 du	/ʃi=ti+Ø+at+unt+nino+Ø/	ʃito·nino?	they fear you (du)	

Table 3.7

Irregular Transitive Paradigm, ut...te "to like"

<u>Sg Sbj</u>			<u>Gloss</u>
1-2 sg	/ta+t+at+in+ut+te+Ø/	tatanuste?	I like you (sg)
1-3 sg	/ta+t+Ø+in+ni+ut+te+Ø/	tatniste?	I like him
1-2 du	/ʔi=ta+t+at+in+ut+te+Ø/	ʔitatanuste?	I like you (du)
1-3 du	/ʔi=ta+t+Ø+in+ni+ut+te+Ø/	ʔitataniste?	I like them (du)
1-2 pl	/ta+t+at+in+ut+nak+te+Ø/	tatanuhnahte?	I like you (pl)
1-3 pl	/ta+t+Ø+in+ni+ut+nak+te+Ø/	tatni.tahte?	I like them (pl)
2-1 sg	/ta+x+ku+in+ut+te+Ø/	tAxkunuste?	you (sg) like me
2-3 sg	/ta+x+Ø+in+ni+ut+te+Ø/	tAxiniste?	you (sg) like him
2-1 excl du	/ʔi=ta+x+ku+in+ut+te+Ø/	ʔitAxkunuste?	you (sg) like us (excl du)
2-3 du	/ʔi=ta+x+Ø+in+ni+ut+te+Ø/	ʔitAxiniste?	you like them (du)
2-1 excl pl	/ta+x+ku+in+ut+nak+te+Ø/	tAxkunuhnahte?	you like us (excl pl)
2-3 pl	/ta+x+Ø+in+ni+ut+nak+te+Ø/	tAxini.tahte?	you (sg) like them (pl)
3-1 sg	/ti+Ø+ku+in+ut+te+Ø/	tikunuste?	he likes me
3-2 sg	/ti+Ø+at+in+ut+te+Ø/	tanuste?	he likes you (sg)
3-3 sg	/ti+a+Ø+in+ut+te+Ø/	tanuste?	he likes him
3-1 excl du	/ʔi=ti+Ø+ku+in+ut+te+Ø/	ʔitikunuste?	he likes us (excl du)
3-1 incl du	/ti+Ø+saku+in+ut+te+Ø/	tsakunuste?	he likes us (incl du)
3-2 du	/ʔi=ti+Ø+at+in+ut+te+Ø/	ʔitanuste?	he likes you (du)
3-3 du	/ʔi=ti+a+Ø+in+ut+te+Ø/	ʔitanuste?	he like them (du)
3-1 excl pl	/ti+Ø+ku+in+ut+nak+te+Ø/	tikunuhnahte?	he likes us (excl pl)
3-1 incl pl	/ti+Ø+ataku+in+ut+nak+te+Ø/	tatakunuhnahte?	he likes us (incl pl)
3-2 pl	/ti+Ø+at+in+ut+nak+te+Ø/	tanuhnahte?	he likes you (pl)
3-3 pl	/ti+a+Ø+in+ut+nak+te+Ø/	tanu.tahte?	he likes them (pl)

The presence of the irregular third person subject form a renders homophonous the two pairs of forms 3 sg-2 sg and 3 du-2 du.

The prefixes in and in+ni also mark non-third and third person indirect objects respectively, in complex themes with preverbs ut or un. The use of the prefixes in these instances is taken up in the discussion of indirect objects and benefactives.

3.6 Reflexive Constructions

In Arikara, coreferentiality of subject and direct object nominals in transitive paradigms is expressed by the reflexive construction.

In contradistinction to transitive forms with non-identical subjects and objects, the reflexive construction restricts participation in the narrated event. Ordinarily the transitive verb is inflected for two primary noun constituents in the functions of subject and direct object. Transitive verbs with coreferential subjects and objects exclude the second of these, thus creating a closed, effectively intransitive construction in which the grammatical subject is the only primary participant marked in the verb.

The verb theme ut...na.ni.hitk "to smudge ritually" may be inflected for non-identical subject and object:

/ta+t+ut+na.ni.hitk+Ø/ [tatuhna.ni.hit]

ind-sbj-dir-pv-vs-prf		
obj	asp	<u>I smudged him.</u>

/ta+t+Ø+ut+ak+na.ni.hitk+Ø/ [tatu.tAhna.ni.hit]

ind-sbj-dir-pv-obj-vs-prf		
obj	asp	<u>I smudged them (pl).</u>

When the subject and direct object are coreferential, the verb is inflected with the reflexive prefix witi-, and person is represented by the set of subject pronouns employed in active intransitive constructions.

A complete reflexive paradigm of ut...na.ni.hitk "to smudge oneself ritually" is presented in Table 3.8. The form of the reflexive prefix throughout the paradigm is invariable. Agreement in person and number with the underlying subject nominal is not expressed on the surface by the reflexive prefix, as it is in English (e.g., myself, yourself, himself). The reflexive prefix witi- is discontinuous wherever the number marker ši occurs in the verbal form.

The noun stem ari.šit "self" may be optionally employed with reflexive constructions. It cannot be conveniently glossed in English, but it lends added emphasis to the reflexive construction. It too is invariable throughout the paradigm.

/ari.šit	witi=ta+t+ut+na.ni.hitk+Ø/	[ari.šit wititatu ^h na.ni.hit]
self	refl-ind-sbj-pv-vs-prf asp	<u>I smudged myself.</u>
/ari.šit	witi=ti+in+ut+na.ni.hitk+Ø/	[ari.šit wititih ^h na.ni.hit]
self	refl-ind-sbj-pv-vs-prf asp	<u>They (pl) smudged themselves.</u>

The reflexive is also employed in both transitive and intransitive constructions in which the underlying indirect object nominal is identical to the underlying subject. In these instances, the indirect object nominal must be marked for benefaction. The benefactive construction ordinarily requires that the prefix ut be intro-

duced before the verb stem. Other prefixes, however, are introduced in benefactive constructions with complex verb themes containing the preverbs ut or un. Alternate marking for benefaction is discussed in 3.9.

Transitive constructions with identical underlying subjects and indirect objects admit direct object nominals. In the illustrative sentences below, the reflexive prefix marks identity of subject and indirect object nominals. The benefactive prefix ut is introduced before the verb stem; the direct object is the independent noun u·kawič "shirt."

/witi=kox+t+i+∅+∅+ut+na·pih+∅ u·kawič/

refl-pot-sbj-ind-dir-ben-vs-prf dir
obj obj asp obj

[witikoxuhna·pi u·kawič] I will buy myself a shirt.

/witi=kox+∅+i+∅+∅+ut+na·pih+∅ u·kawič/

refl-pot-sbj-ind-dir-ben-vs-prf dir
obj obj asp obj

[witikoxuhna·pi u·kawič] He will buy himself a shirt.

/wi=ṣ̌i=ti+kox+∅+i+∅+∅+ut+na·pih+∅ u·kawič/

refl-du-pot-sbj-ind-dir-ben-vs-prf dir
obj obj asp obj

[wiṣ̌itikoxuhna·pi u·kawič] They (du) will buy themselves shirts.

Thus, the reflexive construction is used to express coreferentiality of both underlying subject and direct object nominals, and underlying subject and indirect object nominals.

3.7 Reciprocal Construction

Verbal forms inflected with witi- and the subject pronouns

Table 3.8

Reflexive Paradigm, ut...na.ni.hitk "to smudge ritually"

1 sg	/witi=ta+t+ut+na.ni.hitk+hu/	wititatuha.ni.hitku?	<u>I am smudging myself</u>
2 sg	/witi=ta+x+ut+na.ni.hitk+hu/	wititAxuhna.ni.hitku?	<u>you (sg) are smudging yourself</u>
3 sg	/witi=ti+Ø+ut+na.ni.hitk+hu/	witituhna.ni.hitku?	<u>he is smudging himself</u>
1 excl du	/witi=ši=ta+t+ut+na.ni.hitk+hu/	wišititatuha.ni.hitku?	<u>we (excl du) are smudging ourselves</u>
1 incl du	/witi=ta+sin+ut+na.ni.hitk+hu/	wititsihna.ni.hitku?	<u>we (incl du) are smudging ourselves</u>
2 du	/witi=ši=ta+x+ut+na.ni.hitk+hu/	wišititAxuhna.ni.hitku?	<u>you (du) are smudging yourselves</u>
3 du	/witi=ši=ti+Ø+ut+na.ni.hitk+hu/	wišitituhna.ni.hitku?	<u>they (du) are smudging themselves</u>
1 excl pl	/witi=ta+t+ut+nak+na.ni.hitk+hu/	wititatuha.ni.hitku?	<u>we (excl pl) are smudging ourselves</u>
1 incl pl	/witi=ta+tat+ut+nak+na.ni.hitk+hu/	wititatuha.ni.hitku?	<u>we (incl pl) are smudging ourselves</u>
2 pl	/witi=ta+x+ut+nak+na.ni.hitk+hu/	wititAxuhna.ni.hitku?	<u>you (pl) are smudging yourselves</u>
3 pl	/witi=ti+in+ut+na.ni.hitk+hu/	wititihna.ni.hitku?	<u>they (pl) are smudging themselves</u>

are used to express the notion of reciprocal action, or action on "each other," as well as reflexive action. Thus, the sentence wiʃitituhna.ni.hitkuʔ may be interpreted to mean either "they (du) smudged themselves" (reflexive), or "they (du) smudged each other" (reciprocal). A reciprocal interpretation is possible for all non-singular verb forms inflected with witi-. Although reflexive and reciprocal surface forms with nonsingular subjects are indistinguishable, different meanings are expressed by reciprocal and reflexive constructions. Different underlying sources are postulated for the two constructions in Chapter IV.

3.8 Ditransitive Constructions

In ditransitive constructions, the Arikara verb is inflected for indirect objects as well as transitive subjects and direct objects. The order of noun constituents expressed by pronominal affixes in ditransitive constructions is subject-indirect object-direct object.

In ditransitive constructions, the regular transitive subject pronouns (with neutralized dual-plural number) are employed. The third person plural subject form is ʃi...in when the indirect object is a third person category, and ʃi...Ø when the indirect object is non-third.

The direct object in ditransitive constructions is expressed by Ø, if it is singular, and by nan (third person plural inanimate object), if it is plural.

The pronouns which represent the indirect object are the same

as those which mark direct objects. The third person plural indirect object form, however, is invariably ak (animate). The indirect object pronouns are:

1 sg	<u>ku</u>
2 sg	<u>a</u>
3 sg	<u>∅</u>
1 excl du	<u>ši...ku</u>
1 incl du	<u>saku</u>
2 du	<u>ši...a</u>
3 du	<u>ši...∅</u>
1 excl pl	<u>ku...nak</u>
1 incl pl	<u>ataku...nak</u>
2 pl	<u>a...nak</u>
3 pl	<u>ak</u>

The ditransitive construction is illustrated in Table 3.9.

For purposes of clarity, the transitive subjects and direct objects throughout the paradigm are third person singular, and therefore phonologically null.

Because of the neutralization of dual and plural transitive subject forms, ditransitive constructions involving the number marker ši may have several interpretations, just as other transitive constructions may. The form šitiku?u may have the readings "he gave it to us (excl du)," "they (du) gave it to me," or "they (pl) gave it to me," depending upon whether the proclitic ši is construed to mark number of a dual transitive subject, a plural

Table 3.9
Ditransitive Paradigm, uh "to give"

<u>Singular Direct Object</u>					
<u>Sbj</u>	<u>Ind Obj</u>	<u>Dir Obj</u>			
3 sg 1 sg	3 sg		/ti+ \emptyset +ku+ \emptyset +uh+ \emptyset /	tiku [?] u	<u>He gave it to me</u>
3 sg 2 sg	3 sg		/ti+ \emptyset +a+ \emptyset +uh+ \emptyset /	ta [?] u	<u>He gave it to you (sg)</u>
3 sg 3 sg	3 sg		/ti+ \emptyset + \emptyset +uh+ \emptyset /	ti [?] u	<u>He gave it to him</u>
3 sg 1 excl du	3 sg		/ʒi=ti+ \emptyset +ku+ \emptyset +uh+ \emptyset /	ʒitiku [?] u	<u>He gave it to us (excl du)</u>
3 sg 1 incl du	3 sg		/ti+ \emptyset +saku+ \emptyset +uh+ \emptyset /	tsaku [?] u	<u>He gave it to us (incl du)</u>
3 sg 2 du	3 sg		/ʒi=ti+ \emptyset +a+ \emptyset +uh+ \emptyset /	ʒita [?] u	<u>He gave it to you (du)</u>
3 sg 3 du	3 sg		/ʒi=ti+ \emptyset + \emptyset +uh+ \emptyset /	ʒiti [?] u	<u>He gave it to them (du)</u>
3 sg 1 excl pl	3 sg		/ti+ \emptyset +ku+nak+ \emptyset +uh+ \emptyset /	tikura.ku	<u>He gave it to us (excl pl)</u>
3 sg 1 incl pl	3 sg		/ti+ \emptyset +atakutnak+ \emptyset +uh+ \emptyset /	tatakura.ku	<u>He gave it to us (incl pl)</u>
3 sg 2 pl	3 sg		/ti+ \emptyset +a+nak+ \emptyset +uh+ \emptyset /	tara.ku	<u>He gave it to you (pl)</u>
3 sg 3 pl	3 sg		/ti+ \emptyset +ak+ \emptyset +uh+ \emptyset /	ta.ku	<u>He gave it to them (pl)</u>

Table 3.10

Ditransitive Paradigm

<u>Plural Direct Object</u>			
<u>Sbj</u>	<u>Ind Obj</u>	<u>Dir Obj</u>	
3 sg 1 sg	3 pl	/ti+Ø+kutnant+uh+Ø/	tikura.nu <u>He gave them to me</u>
3 sg 2 sg	3 pl	/ti+Ø+atnant+uh+Ø/	tara.nu <u>He gave them to you (sg)</u>
3 sg 3 sg	3 pl	/ti+at+Ø+nant+uh+Ø/	tara.nu <u>He gave them to him</u>
3 sg 1 excl du	3 pl	/ʔi=ti+Ø+kutnant+uh+Ø/	ʔitikura.nu <u>He gave them to 'is (excl du)</u>
3 sg 1 incl du	3 pl	/ti+Ø+sakutnant+uh+Ø/	tsakura.nu <u>He gave them to us (incl du)</u>
3 sg 2 du	3 pl	/ʔi=ti+at+nant+uh+Ø/	ʔitara.nu <u>He gave them to you (du)</u>
3 sg 3 du	3 pl	/ʔi=ti+at+in+Ø+nant+uh+Ø/	ʔitehna.nu <u>He gave them to them (du)</u>
2 sg 3 du	3 pl	/ʔi=ta+x+Ø+nant+uh+Ø/	ʔitAxta.nu <u>You (sg) gave them to them (du)</u>
3 sg 1 excl pl	3 pl	/ti+Ø+kutnak+nant+uh+Ø/	tikurahna.nu <u>He gave them to us (excl pl)</u>
3 sg 1 incl pl	3 pl	/ti+Ø+atakutnak+nant+uh+Ø/	tatakurahna.nu <u>He gave them to us (incl pl)</u>
3 sg 2 pl	3 pl	/ti+Ø+atnak+nant+uh+Ø/	tarahna.nu <u>He gave them to you (pl)</u>
3 sg 3 pl	3 pl	/ti+Ø+ak+nant+uh+Ø/	tehna.nu <u>He gave them to them (pl)</u>
3 sg 3 pl	3 pl	/ti+Ø+ak+nant+wat+uh+Ø/	tehna.waʔu <u>He gave them to them (dis pl)</u>
3 pl 3 pl	3 pl	/ʔi=ti+in+ak+nant+uh+Ø/	ʔiti.nAhna.nu <u>They gave them to them (pl)</u>

transitive subject, or the indirect object.

Table 3.10 presents a paradigm illustrating the ditransitive construction with third person plural direct objects, represented by the inanimate marker nan. In the forms tara.nu "he gave them to him," and Yitehna.nu "he gave them to them (du)," the third person singular subject is represented by the irregular third person form a. Note also in Table 3.10 that a third person plural distributive indirect object may be distinguished.

3.9 Benefactive Constructions

Benefactive nominals are indexed in the verb by the indirect object pronouns. In addition, the benefactive construction requires that a benefactive prefix (usually ut) be introduced before the verb stem. Intransitive as well as transitive constructions may be inflected for benefaction. In both cases, the benefactive prefix is ut when the verb theme is simple (that is, does not contain the preverbs ut or un).

Table 3.11 presents a transitive paradigm illustrating the benefactive construction. The verb theme in Table 3.11 is the simple stem tau.t "to steal." The majority of the third person subjects in the paradigm are represented by the irregular third person pronoun a. In addition, the prefixes intni are introduced into the verb when the subject is third person and the benefactive nominal is non-third; the prefixes at-in are introduced when the subject and benefactive nominal are both third person. No additional prefixes are introduced into the verb when the subject is

either first or second person.

When the direct object of transitive benefactive constructions is plural, it is marked by nan (inanimate). Table 3.12 presents a transitive paradigm involving a benefactive nominal and third person plural direct object. The forms in the table are also inflected for past tense. The benefactive prefix precedes the past tense prefix. Again, third person subjects are marked with a when the benefactive nominal is third person.

Complex verb themes containing the preverbs ut or un are not inflected for benefaction with the regular prefix ut. Instead, the benefactive is expressed by the introduction before the preverb of the prefix in if the benefactive nominal is non-third, or the sequence of prefixes in+ni if the benefactive nominal is third person. All reflexive forms which contain the preverbs ut or un form the benefactive construction with the sequence of prefixes in+ni. Table 3.13 presents a partial benefactive paradigm of the complex verb theme ut...a.n "to do" illustrating the use of the alternative benefactive prefixes.

Table 3.11

Benefactive Paradigm, tau.t "to steal"

<u>Sbj</u>	<u>Ben</u>	<u>Dir</u>	<u>Obj</u>		
3 sg	1 sg	3 sg	/ti+Ø+ku+Ø+ut+tau.t+Ø/	tikusta ² ut	<u>He stole it for me</u>
1 sg	1 sg	3 sg	/witi=ta+t+Ø+ut+tau.t+Ø/	wititustasta ² ut	<u>I stole it for myself</u>
1 sg	2 sg	3 sg	/ta+t+ta+Ø+ut+tau.t+Ø/	tatosta ² ut	<u>I stole it for you (sg)</u>
1 sg	3 sg	3 sg	/ta+t+Ø+Ø+ut+tau.t+Ø/	tatUsta ² ut	<u>I stole it for him</u>
3 sg	3 sg	3 sg	/witi=ti+Ø+Ø+ut+tau.t+Ø/	wititusta ² ut	<u>He stole it for himself</u>
2 sg	1 excl du	3 sg	/ʃi=ta+x+ku+Ø+ut+tau.t+Ø/	ʃitAxxusta ² ut	<u>You (sg) stole it for us</u>
1 sg	2 du	3 sg	/ʃi=ta+t+ta+Ø+ut+tau.t+Ø/	ʃitatosta ² ut	<u>I stole it for you (du)</u>
1 sg	3 du	3 sg	/ʃi=ta+t+Ø+Ø+ut+tau.t+Ø/	ʃitatusta ² ut	<u>I stole it for them (du)</u>
2 sg	1 excl pl	3 sg	/ta+x+ku+Ø+ut+nak+tau.t+Ø/	tAxxuhnahta ² ut	<u>You stole it for us (excl du)</u>
1 sg	2 pl	3 sg	/ta+t+ta+Ø+ut+nak+tau.t+Ø/	tatoznahta ² ut	<u>I stole it for you (pl)</u>
1 sg	3 pl	3 sg	/ta+t+Ø+Ø+ut+nak+tau.t+Ø/	tatu.tAhta ² ut	<u>I stole it for them (pl)</u>
3 sg	2 sg	3 sg	/ti+a+in+ni+ta+Ø+ut+tau.t+Ø/	tehnosta ² ut	<u>He stole it for you (sg)</u>
3 sg	3 sg	3 sg	/ti+a+in+Ø+Ø+ut+tau.t+Ø/	tenUsta ² ut	<u>He stole it for him</u>
3 sg	1 excl du	3 sg	/ʃi=ti+Ø+in+ni+ku+Ø+ut+tau.t+Ø/	ʃitehnikusta ² ut	<u>He stole it for us (excl du)</u>

Table 3.11 (cont)

<u>Sbj</u>	<u>Ben</u>	<u>Dir</u>	<u>Obj</u>		
3 sg	1 incl	du 3 sg	/ti+at+in+ni+Ø+saku+ut+tau.t+Ø/	tehnIsakustaʔut	<u>He stole it</u> <u>for us (incl du)</u>
3 sg	2 du	3 sg	/ʒi=ti+at+in+ni+Ø+Ø+ut+tau.t+Ø/	ʒitehnostaʔut	<u>He stole it</u> <u>for you (du)</u>
3 sg	3 du	3 sg	/ʒi=ti+at+in+Ø+Ø+ut+tau.t+Ø/	ʒitenUstaʔut	<u>He stole it</u> <u>for them (du)</u>
3 sg	1 incl	pl 3 sg	/ti+at+in+ni+atakut+Ø+ut+nak+tau.t+Ø/	tehnatakuhnahtaʔut	<u>He stole it</u> <u>for us (incl pl)</u>
3 sg	2 pl	3 sg	/ti+at+in+ni+a+Ø+ut+nak+tau.t+Ø/	tehno.nahtaʔut	<u>He stole it</u> <u>for you (pl)</u>

Table 3.12

Benefactive Paradigm, na "to bring"

<u>Plural Direct Object</u>					
<u>Sbj</u>	<u>Ind</u>	<u>Obj</u>	<u>Dir</u>	<u>Obj</u>	
3 sg 1 sg	3 pl	/ti+Ø+ku+Ø+ut+ux+nan+na+Ø/		tikUsuxtana?	<u>He brought them for me</u>
3 sg 2 sg	3 pl	/ti+Ø+a+Ø+ut+ux+nan+na+Ø/		to·suxtana?	<u>He brought them for you (sg)</u>
3 sg 3 sg	3 pl	/ti+a+Ø+ut+ux+nan+na+Ø/		to·suxtana?	<u>He brought them for him</u>
3 sg 1 excl du	3 pl	/ʃi=ti+Ø+ku+ut+ux+nan+na+Ø/		ʃitiku·suxtana?	<u>He brought them for us (excl du)</u>
3 sg 1 incl du	3 pl	/ti+Ø+saku+ut+ux+nan+na+Ø/		tsakUsuxtana?	<u>He brought them for us (incl du)</u>
3 sg 2 du	3 pl	/ʃi=ti+a+Ø+ut+ux+nan+na+Ø/		ʃito·suxtana?	<u>He brought them for you (du)</u>
3 sg 3 du	3 pl	/ʃi=ti+a+Ø+ut+ux+nan+na+Ø/		ʃito·suxtana?	<u>He brought them for them (du)</u>
3 sg 1 excl pl	3 pl	/ti+Ø+ku+ut+ux+nak+nan+na+Ø/		tataku·suxahnana?	<u>He brought them for us (incl pl)</u>
3 sg 2 pl	3 pl	/ti+Ø+a+ut+ux+nak+nan+na+Ø/		to·suxtana?	<u>He brought them for you (pl)</u>
3 sg 3 pl	3 pl	/ti+a+Ø+ut+ux+ak+nan+na+Ø/		to·suxahnana?	<u>He brought them for them (pl)</u>

Table 3.13

Benefactive Paradigm, ut...a.n "to do"

<u>Sbj</u>	<u>Ben</u>	<u>Dir</u>	<u>Obj</u>	
1 sg	2 sg	3 sg	/kox+tt+i+a+in+Ø+ut+a.n+Ø/	koxtanu.ta <u>I will do it for you (sg)</u>
1 sg	3 sg	3 sg	/kox+tt+i+Ø+in+nni+Ø+ut+a.n+Ø/	koxtini.ta <u>I will do it for him</u>
1 sg	2 du	3 sg	/ʒi=kox+tt+i+a+in+Ø+ut+a.n+Ø/	ʒikoxtanu.ta <u>I will do it for you (du)</u>
1 sg	3 du	3 sg	/ʒi=kox+tt+i+Ø+in+nni+Ø+ut+a.n+Ø/	ʒikoxtini.ta <u>I will do it for them (du)</u>
1 sg	2 pl	3 sg	/kox+tt+i+a+in+Ø+ut+nak+a.n+Ø/	koxtanuhna.ka <u>I will do it for you (pl)</u>
1 sg	3 pl	3 sg	/kox+tt+i+Ø+in+nni+Ø+ut+ak+a.n+Ø/	koxtini.ta.ka <u>I will do it for them (pl)</u>
1 sg	1 sg	3 sg	/witi=kox+tt+i+Ø+in+nni+Ø+ut+a.n+Ø/	witikoxtini.ta <u>I will do it for myself</u>
2 sg	1 sg	3 sg	/kox+x+i+ku+in+Ø+ut+a.n+Ø/	koxikumu.ta <u>You (sg) will do it for me</u>
2 sg	3 sg	3 sg	/kox+x+i+Ø+in+nni+Ø+ut+a.n+Ø/	ko.xini.ta <u>You (sg) will do it for him</u>
2 sg	1 excl du	3 sg	/ʒi=kox+x+i+ku+Ø+in+Ø+ut+a.n+Ø/	ʒiko.xikumu.ta <u>You (sg) will do it for us (excl du)</u>
2 sg	3 du	3 sg	/ʒi=kox+x+i+Ø+in+nni+Ø+ut+a.n+Ø/	ʒiko.xini.ta <u>You (sg) will do it for them (du)</u>
2 sg	1 excl pl	3 sg	/kox+x+i+ku+in+Ø+ut+nak+a.n+Ø/	ko.xikumuhna.ka <u>You (sg) will do it for us (excl pl)</u>
2 sg	3 pl	3 sg	/kox+x+i+Ø+in+nni+Ø+ut+ak+a.n+Ø/	ko.xini.ta.ka <u>You (sg) will do it for them (pl)</u>

Table 3.13 (cont)

<u>Sbj</u>	<u>Ben</u>	<u>Dir</u>	<u>Obj</u>		
2 sg	3	pl	3 sg	/kox+x+i+ \emptyset +int+ni+ \emptyset +ut+ak+a.n+ \emptyset /	ko.xini.ta.ka <u>You (sg) will do it for them (pl)</u>
2 sg	2	sg	3 sg	/witi=kox+x+i+ \emptyset +int+ni+ \emptyset +ut+a.n+ \emptyset /	<u>You (sg) will do it for yourself</u>
3 sg	1	sg	3 sg	/kox+ \emptyset +i+ku+in+ \emptyset +ut+a.n+ \emptyset /	<u>He will do it for me</u>
3 sg	2	sg	3 sg	/kox+ \emptyset +i+a+in+ \emptyset +ut+a.n+ \emptyset /	<u>He will do it for you (sg)</u>
3 sg	3	sg	3 sg	/witi=kox+ \emptyset +i+ \emptyset +int+ni+ \emptyset +ut+a.n+ \emptyset /	<u>He will do it for himself</u>

Chapter IV

4.1 Introduction

This chapter presents a formal analysis of person agreement in the Arikara verb. We propose that more abstract structures underlie each of the surface constructions described in the preceding chapter, and that the surface constructions are derived from the abstract structures underlying them by a series of transformational processes. Specifically, an examination of Arikara surface structures shows that a number of grammatical units found in the verb agree with external noun phrase constituents. We propose an account of Arikara deep structure in which complex symbols of nouns are external to the verb on a pre-inflectional tree. We then show how semantic information contained in these complex symbols is introduced into the verb by transformational processes. Similar types of transformational processes have been described in Onondaga in the following terms.

...it is especially characteristic of postsemantic processes in Onondaga that they add units to the verb while very often subtracting them from elsewhere in the sentence. We saw how the unit reflexive is introduced into the verb while a patient noun is simultaneously deleted. By this and other processes the structure of the verb is gradually augmented, while that of associated nouns is eroded. By the time surface structure is reached it is often the case that the only word left in a sentence is the verb. Such complete erosion of nouns does not always take place, however, and frequently enough is left of a noun that it becomes symbolized as a separate word (Chafe 1970:49).

The discussion of noun incorporation in Chapter VII provides further

evidence of the generality and importance of verb-augmenting processes characteristic of the transformational component of an Arikara grammar.

All verbal forms in Arikara obligatorily contain some combination of the affixed person and number markers described in the preceding chapter. In intransitive sentences only one noun phrase constituent is indexed in the verb. In transitive sentences, at least two primary noun phrases functioning as subject and object are indexed in the verb. An explicit description of Arikara must account for this phenomenon of person and number agreement. We begin the discussion of person agreement by presenting further evidence concerning the simplest possible case, namely, that of person agreement in simple active intransitive sentences of the type illustrated in Table 3.1.

4.2 Independent Pronouns

In the active intransitive sentences in Table 3.1, person and number are indexed by pronominal affixes in the verb only. Active intransitive sentences with independent subject pronouns and pronominal indexing of the subject also occur, as illustrated in (1)-(8) below.

- | | |
|----------------------------|---------------------------------|
| (1) [na.tu tatwa.waʔa] | <u>I am eating.</u> |
| (2) [na.xu tAxwa.waʔa] | <u>You (sg) are eating.</u> |
| (3) [ʃina.tu ʃitatwa.waʔa] | <u>We (excl du) are eating.</u> |
| (4) [tAhxi.nu tsihwa.waʔa] | <u>We (incl du) are eating.</u> |

- | | |
|--------------------------------|---------------------------------|
| (5) [ʃina.xu ʃitAxwa.waʔa] | <u>You (du) are eating.</u> |
| (6) [natara.kiʃ tatarapa.waʔa] | <u>We (incl pl) are eating.</u> |
| (7) [nAhna.kiʃ tAhnapa.waʔa] | <u>We (excl pl) are eating.</u> |
| (8) [nAxta.kiʃ tAxtapa.waʔa] | <u>You (pl) are eating.</u> |

Note the concrete morphological identity of parts of the independent pronouns with the affixed pronominal forms. The independent pronouns are complex forms which contain the subordinating prefix na, followed by the same elements representing person and number found in the affixed pronominal forms, and a suffixed form of the verb "to be," -u in the case of singular and dual pronouns, -iʃ in the case of plural pronouns. The pronominal affixes in the verb can be said to agree with the independent subject pronouns in person and number.

There are no corresponding independent subject pronouns for third person categories. Third person subject agreement is exemplified in sentences (9)-(11).

- | | |
|--------------------------|--------------------------|
| (9) [wi.ta tiwa.waʔa] | <u>The man eats.</u> |
| (10) [wi.ta ʃitiwa.waʔa] | <u>The men (du) eat.</u> |
| (11) [wi.ta tihwa.waʔa] | <u>The men (pl) eat.</u> |

Person and number agreement is marked only in the verb in the case of third person categories. The independent noun, which is itself a third person category, is not overtly marked for number.

The noun phrases in sentences (9)-(11) consist of nouns alone. The same facts of third person subject agreement can be illustrated

by means of subject noun phrases consisting of demonstratives and nouns, or simply demonstratives alone. Demonstratives are formed with two different verb stems, one for indicating third persons standing, arič+i; the other for third persons sitting, ku. Demonstratives directly code the number of the nouns they modify, as in (12)-(14). Notice that the prefix na occurs in both subject pronouns and demonstratives.

(12) [na·riči (wi·ta) tiwa·waʔa] That one(man) eats.

(13) [šinawa·riči (wi·ta) šitiwa·waʔa] Those two men eat.

(14) [nawa·riči (wi·ta) tihwa·waʔa] Those(men) eat.

Even though there are no independent third person subject pronouns, third person subject agreement must be treated in much the same way as agreement of first and second person categories, since pronominal inflection of third person categories formally parallels that of first and second person categories. The essential proposal is that information of person and number represented by pronominal affixes in the verb is introduced transformationally from a noun phrase constituent external to the verb in deep structure. The external noun phrase constituent which determines agreement may be deleted after the agreement transformation has applied, or it may be retained and assigned a phonological representation as an independent pronoun or noun.

4.3 Phrase Structure Rules

We now characterize the deep structures over which agreement transformations operate. Prior to the application of agreement

rules, a tree representing a simple (transitive or intransitive) sentence consists of a noun phrase (NP) and a verb phrase (VP). The NP consists minimally of a noun alone, or a determiner (e.g. demonstrative, numeral) and noun. For clarity of presentation, in the present discussion we consider only cases in which the NP is expanded as a noun (N). Nouns may be further specified by sub-categorization rules as [\pm PRO] (pronoun). The specification of some nouns as [+ PRO] and others as [-PRO] in deep structures is extremely important to a transformational account of person agreement.

We noted above that first and second person subjects may be represented by independent subject pronouns as well as by obligatory pronominal inflection in the verb. Third persons, on the other hand, have no corresponding subject pronoun forms. Third person categories are obligatorily indexed in the verb, and agree with a noun constituent of an external NP. The implication of these facts is that third person categories are basically nominal, and first and second person categories basically pronominal. This difference between first and second versus third person categories must be accounted for in some principled way in the grammar.

Following the analysis proposed by Benveniste in his various papers on 'pronouns' and 'person' (Benveniste 1970:195-204, 217-222), there are basically only two personal pronoun types, traditionally categories of first and second person. First and second persons are indexical signs that denote participants in the speech situation;

they are referentially well-defined. The traditional 'third person,' under Benveniste's analysis, is actually a 'non-person' (Benveniste 1970:221) not referentially definable in terms of the speech situation. 'Third person' noun phrases are basically nominal, and languages have rules of various kinds for their pronominalization under certain conditions, yielding anaphoric, and cross-referencing surface units that preserve, to different degrees, lexical properties of the missing nominal expression.

Agreement in the case of third person categories, then, is an anaphoric process, by means of which information of person and number is introduced into the verb from a noun in the same phrase marker. Third person inflectional pronouns are transformationally derived from an external [N] marked [-PRO]. When information of person and number is introduced from the external noun, the specification [+PRO] is transformationally introduced under identity with the external noun in the phrase marker. The [+PRO] specification of third person categories is thus transformationally derived.

The [+PRO] specification of first and second person categories, on the other hand, is not transformationally introduced. These categories are specified as [+PRO] in deep structure in the complex symbol dominated by [N]. Transformational processes operate to copy the information represented in the external [N] in the verb, including the [+PRO] specification. Thus, all 'person' categories (first, second, and third) within the verb are specified as [+PRO]. At the surface level, there is formal parallelism of true

personal indices (first and second persons) and anaphoric (third person) forms. At the underlying semantic level, however, we must realize that we are dealing with two distinct systems. The important difference is that [+PRO] specification of third person categories is transformationally introduced, under identity with the external noun, while the [+PRO] specification of first and second person categories is present in deep structure, before any agreement rules have applied.

We now briefly characterize the representation of the VP in Arikara deep structure. The VP contains a verb (V). The V is further minimally developed as mode, verb theme (VT), and aspect (ASP). The VT may contain a simple verb stem (VS), or a preverb (PV) and VS. Verb themes comprised only of a verb stem will be termed 'simple'; verb themes comprised of preverb and verb stem will be termed 'complex'.

In Aspects of the Theory of Syntax, Chomsky develops an argument in support of the view that the strict subcategorization of verbs (i.e., classification into transitive, intransitive, and so forth) can be characterized exhaustively in terms of context within the VP. He has pointed out that "every frame in which V appears, in the VP, is relevant to the strict subcategorization of V" (Chomsky 1965:96).

Thus, in Arikara, intransitive verbs have the property that they appear in the frame []_{VP}, but not in the frame [NP____]_{VP}, which defines transitive verbs.

We propose that the base component of an Arikara grammar includes a number of phrase structure rules. These phrase structure (PS) rules are simply formal statements of the preceding prose description.

- (i) $S \rightarrow NP \ VP$
- (ii) $NP \rightarrow (DET) \ N$
- (iii) $VP \rightarrow (NP) \ V$
- (iv) $V \rightarrow MODE \ VT \ ASP$
- (v) $VT \rightarrow (PV) \ VS$
- (vi) $MODE \rightarrow \begin{cases} ind \\ pot \\ \dots \end{cases}$
- (vii) $ASP \rightarrow \begin{cases} prf \\ imp \end{cases}$

The categories of mode and aspect could be further developed, as indicated in Chapter I. The rules and conventions outlined to this point produce preterminal strings (i.e., structures without lexical items). A preterminal string is converted into a terminal string by replacing preterminal complex symbols with lexical items. This is accomplished by a general lexical rule according to which a lexical item may replace a preterminal complex symbol if its lexical complex symbol is not distinct from the complex symbol developed in the phrase marker (Chomsky 1965:84).

The lexicon includes entries of the following sort, each entry a complex symbol (here greatly abbreviated) and a distinctive feature matrix (giving the phonological representation of the lexical item, here abbreviated by the alphabetic representation):

[N, -PRO], /wi.ta/	<u>man</u>
[N, +PRO], /na.tu/	<u>I</u>
[NP, V] _{VP} , /un...nino/	<u>to fear</u>
[___ V] _{VP} , /wa.waa/	<u>to eat</u>

Note that the lexical entries distinguish transitive and intransitive verbs: these are [NP___]_{VP} and [___]_{VP} respectively.

We now consider the types of information contained in the complex symbols dominated by the terminal category symbol [N]. We claim it is the information contained in these complex symbols which rules of person agreement operate on.

First, however, we must mention that an alternative theory of person agreement might be entertained. Instead of claiming that person agreement operates with reference to information contained in complex symbols of [N], it could be suggested that person agreement operates directly on lexical constituents, and moves them to the appropriate locus inside the verb.

We noted above the morphological identity of parts of independent subject pronouns with their affixal counterparts. There is undoubtedly an historical reality behind this formal identity. At some time in the prehistory of the Caddoan languages, parts of the independent subject pronouns were perhaps 'attracted' into second (enclitic) position in the verb by a process similar to that documented for Indo-European (Wackernagel 1892). The process of 'attraction' may have then become an obligatory rule, even in cases where the 'source' independent pronoun was retained.

Another entertainable historical explanation of the morphological relatedness of the independent subject pronouns and the pronominal affixes is that the synchronic independent subject pronoun series was created from the affixal forms, possibly replacing an earlier set of independent subject pronouns.

We are not presently able to decide what the actual historical developments may have been. At any rate, given the synchronic morphological identity, we might entertain the idea that person agreement is accomplished by the direct copying of the lexical independent pronouns in the verb, with appropriate adjustment of their phonological realization. This, however, would be confusion of an historical account of the language with a synchronic one.

This conception of person agreement as 'constituent copying' is not adopted for several reasons, the most important of which are mentioned here. First, the independent subject pronouns and the pronominal affixes obligatorily represented in the verb code the same semantic information of person and number. An account of the language is simplified by the assumption that this information is represented only once in deep structure as features of an external noun constituent, and copied by transformational rule in the appropriate locus in the verb. Second, various transformations in Arikara, especially the rule of noun incorporation, can be formulated satisfactorily only if transformational rules are allowed to make direct reference to underlying lexical features of noun. Since the transformational rule that copies features of nouns in noun

incorporation is formally parallel to the transformational rule that copies the features of complex symbols of [N] in person agreement, we propose here that all cross-referencing, anaphoric, and agreement rules operate on feature specifications of complex symbols rather than lexical constituents.

The complex symbols dominated by [N] contain specification for [\pm PRO], as well as person and number features, and it is with reference to these features that rules of person agreement operate. Table 4.1 presents the classification of the pronominal and anaphoric forms in accordance with a theory of markedness of the sort suggested by Benveniste's analysis of pronouns (see page 101).

In Table 4.1, the inclusive-exclusive distinction of 'person' is captured by specification in lines (a) and (b), and the singular-dual-plural distinction of 'number' is expressed in lines (c) and (d). The standard names of the feature bundles are given over each column. Columns specified as [+pl] may be further specified as restricted [+res], signifying that further individuals coded by the pronominal forms are unique, or [-res], indicating that further individuals are not unique. The feature [res] is redundantly specifiable as positive for singular categories, since singular categories as well as dual categories are countable just on the basis of their feature specifications for person. Note that all dual forms are specified as [+res], as well as [+pl], indicating that duality is a sub-feature of positive specification for plurality.

Table 4.1

Pronominal Feature Analysis

	<u>1 incl du</u>	<u>1 incl pl</u>	<u>1 excl du</u>	<u>1 excl pl</u>	<u>1 sg</u>	<u>2 du</u>	<u>2 pl</u>	<u>2 sg</u>	<u>3 du</u>	<u>3 pl</u>	<u>3 sg</u>
(a) [ego]	+	+	+	+	+	-	-	-	-	-	-
(b) [tu]	+	+	-	-	-	+	+	+	-	-	-
(c) [pl]	+	+	+	+	-	+	+	-	+	+	-
(d) [res]	+	-	+	-	(+)	+	-	(+)	+	-	(+)

Table 4.2
Surface Morphology of the Personal Pronouns

1 sg	/natttu/	na.tu	<u>I</u>
2 sg	/natxtu/	na.xu	<u>You (sg)</u>
3 sg	/ʒi=natttu/	ʒina.tu	<u>We (excl du)</u>
1 incl du	/tatt+sintu/	tAhsi.nu	<u>We (incl du)</u>
2 du	/ʒi=natxtu/	ʒina.xu	<u>You (du)</u>
1 excl pl	/natt+tnak+iʒ/	nAhna.kiʒ	<u>We (excl pl)</u>
1 incl pl	/nattatnak+iʒ/	nataara.kiʒ	<u>We (incl pl)</u>
2 pl	/natxtnak+iʒ/	nAxta.kiʒ	<u>You (pl)</u>

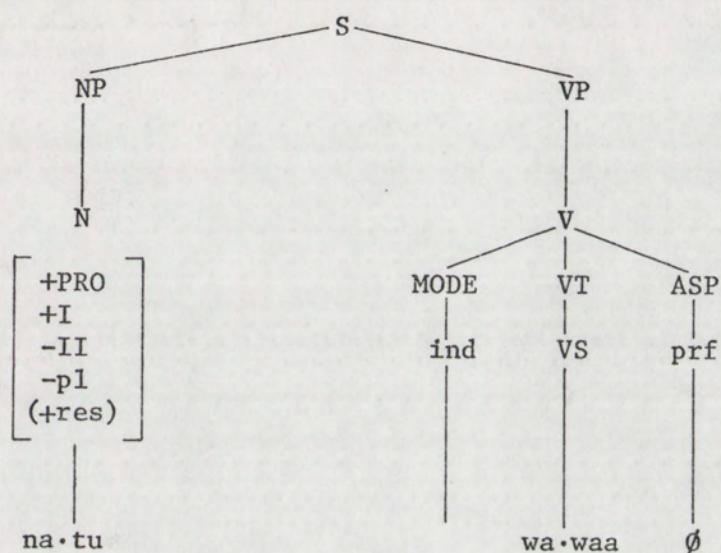
The heavy double vertical lines in Table 4.1 separate the 'personal' from the 'non-personal' pronouns. The 'third person' forms of the last three columns index neither speaker nor hearer; hence rows (a) and (b) are negatively specified. The last three bundles, then, represent the pronominal forms whose [+PRO] specification arises by the transformational mechanism of pronominalization.

Table 4.2 presents the surface morphology of the personal pronominal forms.

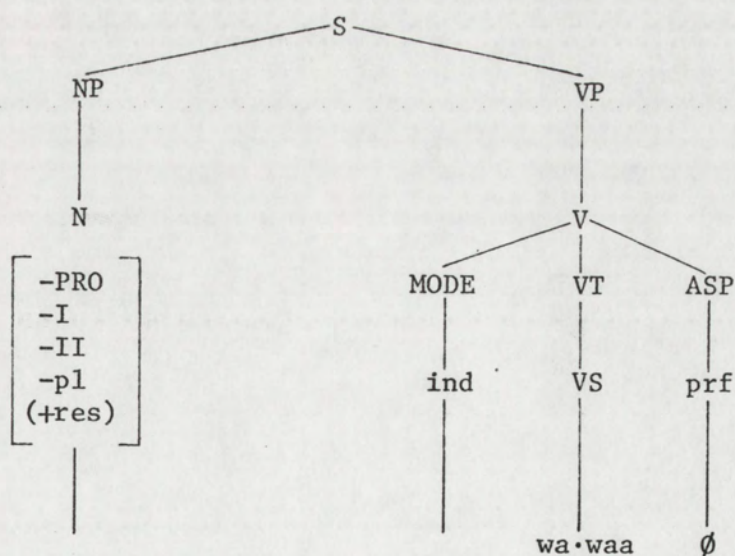
4.4 Subject Agreement in Active Intransitive Clauses

With this introduction, it becomes possible to characterize the form which simple active intransitive sentences exhibit prior to the application of the person agreement rules. The PS rules will generate structures as in (a) and (b) below. Note the [+PRO] specification of the [N] in (a), and the [-PRO] deep structure specification of the [N] in (b).

(a)



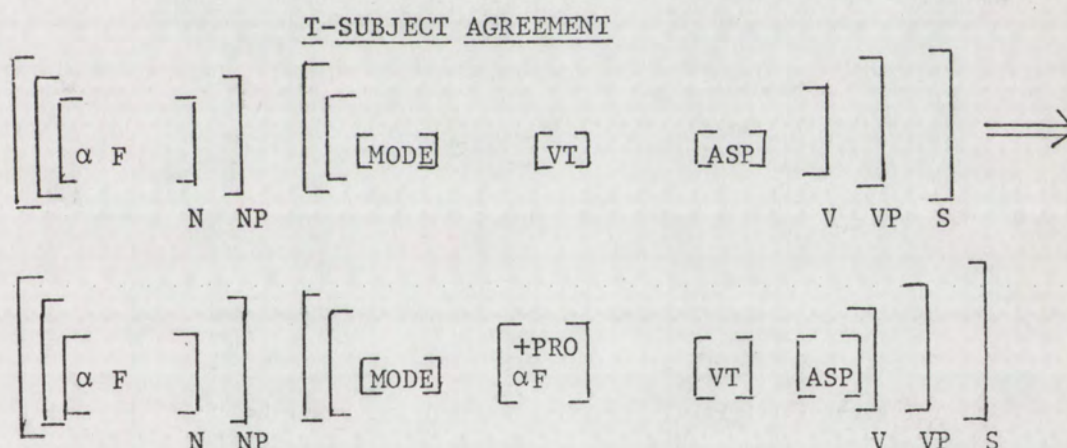
(b)



The phonological realization of the indicative modal marker is left unspecified in these structures since, as will become clear, all information relevant to the specification of its shape has not

been presented.

The rule of person agreement must be formulated to copy the feature specifications of the complex symbols of the terminal category symbol N. The transformationally-created feature bundles are attached to the V-node following the modal prefix. The rule which expresses this operation is formalized as T-SUBJECT AGREEMENT.



F=I, II, pl, res

This rule creates abstract feature bundles which duplicate the person and number features of the external [N]. The explanatory condition indicates that both person and number features are copied in the verb. In addition, it specifies all feature bundles created inside the V as [+PRO], regardless of the specification for [PRO] of the source [N].

The structural changes effected by this rule are shown in the phrase markers in Table 4.3 for all eleven forms of the active intransitive paradigm.

Table 4.3

Structural Changes Effected by

T-SUBJECT AGREEMENT in Active Intransitive Clauses

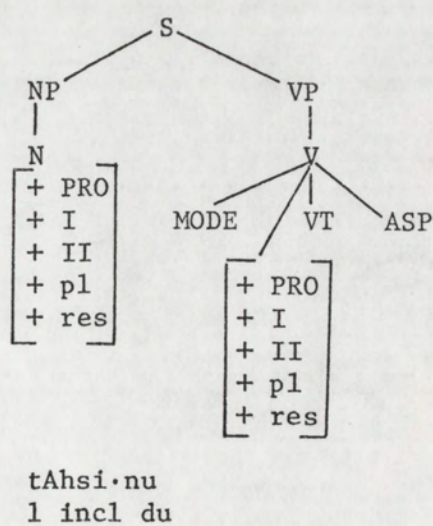
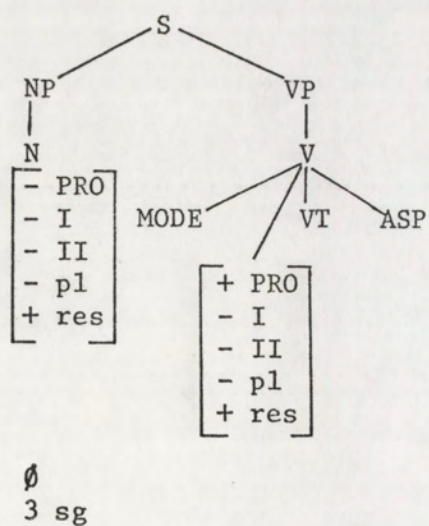
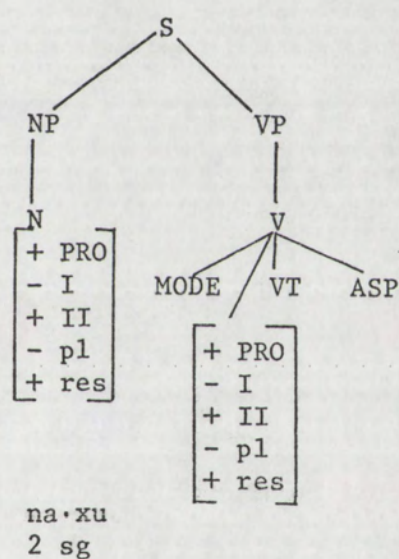
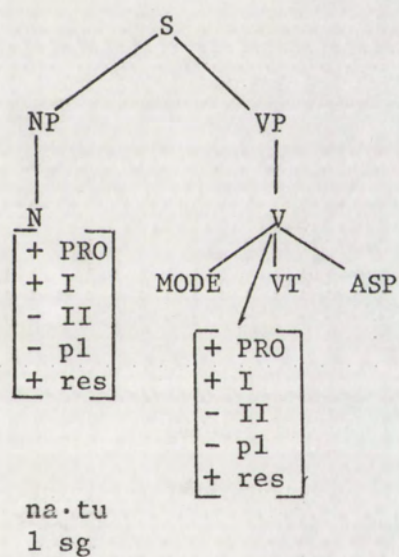
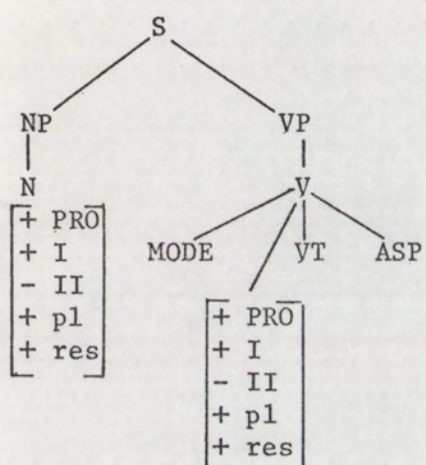
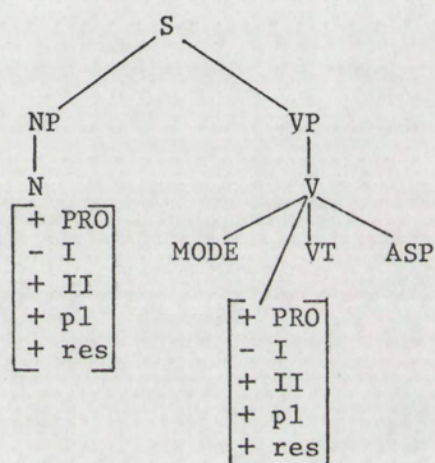


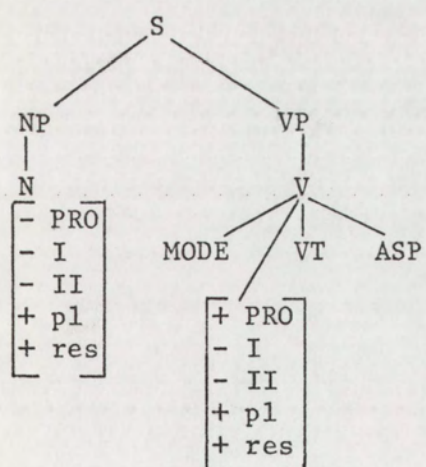
Table 4.3 (cont)



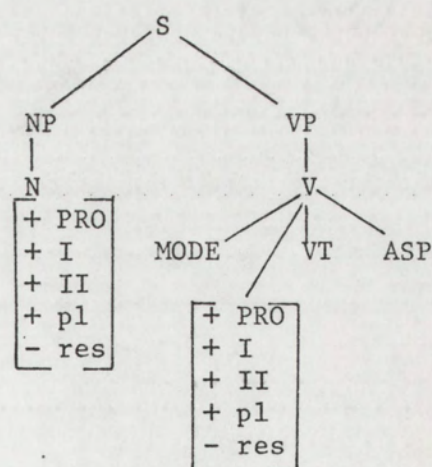
Ÿsina·tu
1 excl du



Ÿsina·xu
2 du

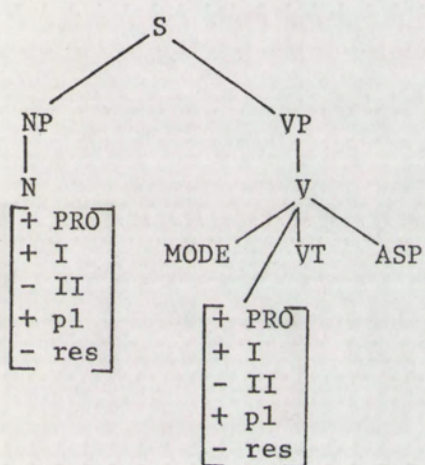


Ø
3 du

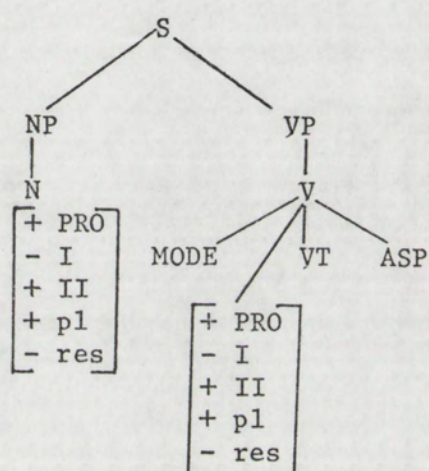


natara·kiŸ
1 incl pl

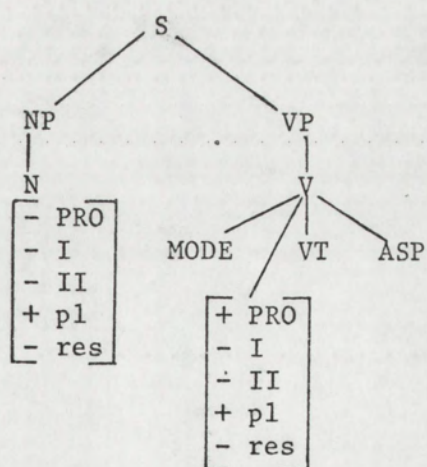
Table 4.3 (cont)



nAhna·kič
1 excl pl



nAxta·kič
2 pl



\emptyset
3 pl

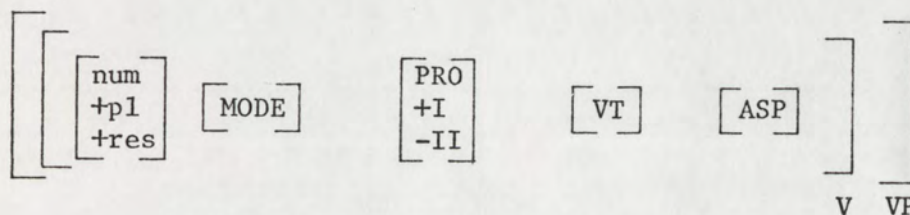
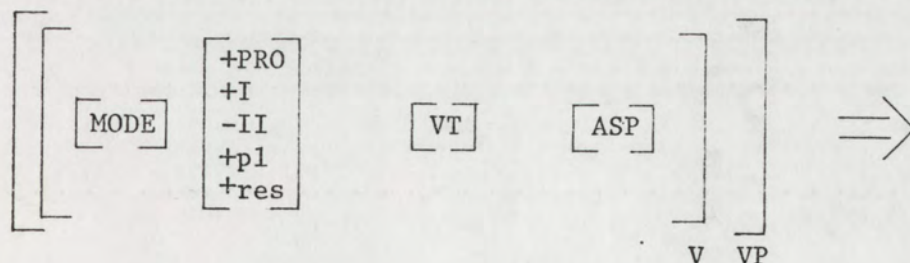
The motivation for the rule of subject agreement is essentially semantic, and not simply distributional. We observe that all surface verb-forms contain pronominal elements representing information of person and number. We further observe that surface sentences may contain independent pronouns and nouns which express the same semantic information of person and number coded in the pronominal affixes. We therefore posit an abstract structure for these sentences in which semantic information of person and number is expressed only once (as feature values) on an external noun. The transformational rule of subject agreement distributes these feature values by copying them in the appropriate locus inside the verb. The justification for this operation is the observation that the pronominal affixes within the verb express the same grammatical categories of person and number as do the nouns external to the verb phrase.

We cannot directly assign phonological realizations to the transformationally created feature bundles, however. We must still account for the placement of number markers in surface structures. There are several facts to be accounted for. Some pronominal forms (including all singular forms, first person inclusive dual sin, and third person plural in) do not have separate number markers. Rather, person and number are expressed by a single portmanteau surface category. Number of all other dual forms is expressed by the prefix Si, while number of all other plural forms is expressed by the num-

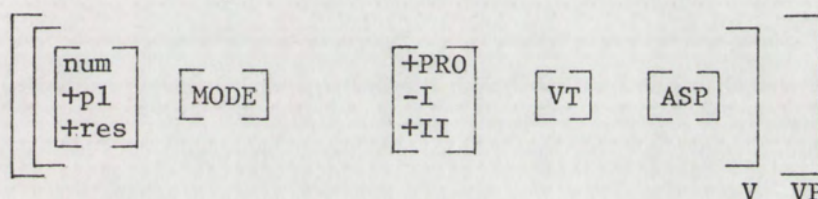
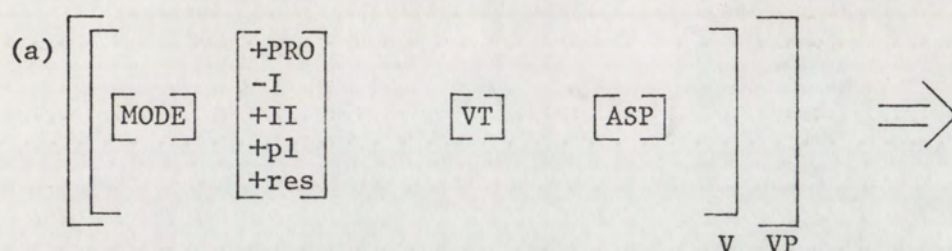
ber marker nak, which may be separated from the personal affixes by the preverb in the surface structures.

A separate set of rules is therefore required to account for the movement of number features to a locus inside the verb where they may be assigned phonological spellings. Thus, for a number of the abstract feature bundles, rules of number segmentalization will create abstract bipartite bundles, so that person features are represented in one bundle, number features in another. No rules are needed to account for number marking in bundles specified as [-pl], or in the bundles specified [-I, -II, +pl, -res] (in, third person plural) and [+I, -II, +pl, +res] (sin, first person inclusive dual). The following set of rules accounts for the placement of the number marker in all dual forms with the exception of the first person inclusive dual.

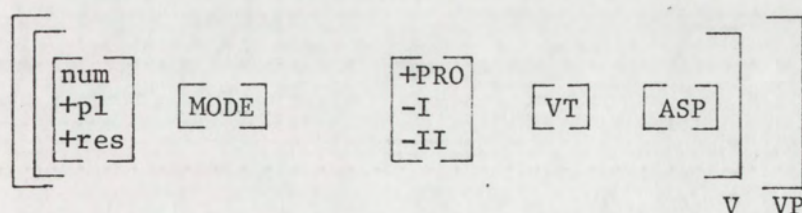
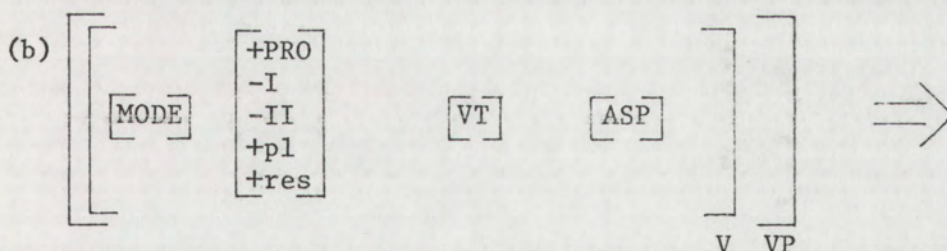
T-NUMBER SEGMENTALIZATION OF DUAL SUBJECT FORMS



1 excl du



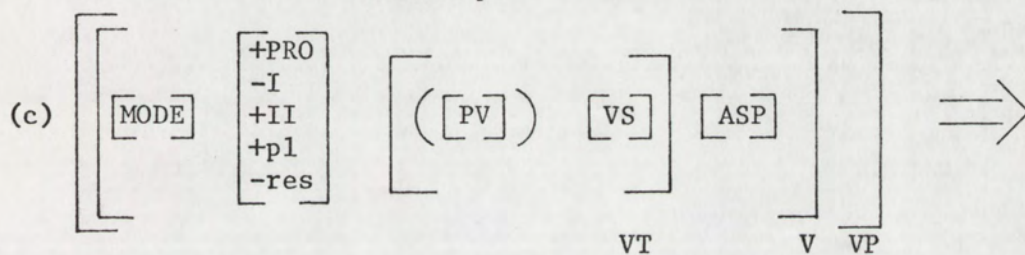
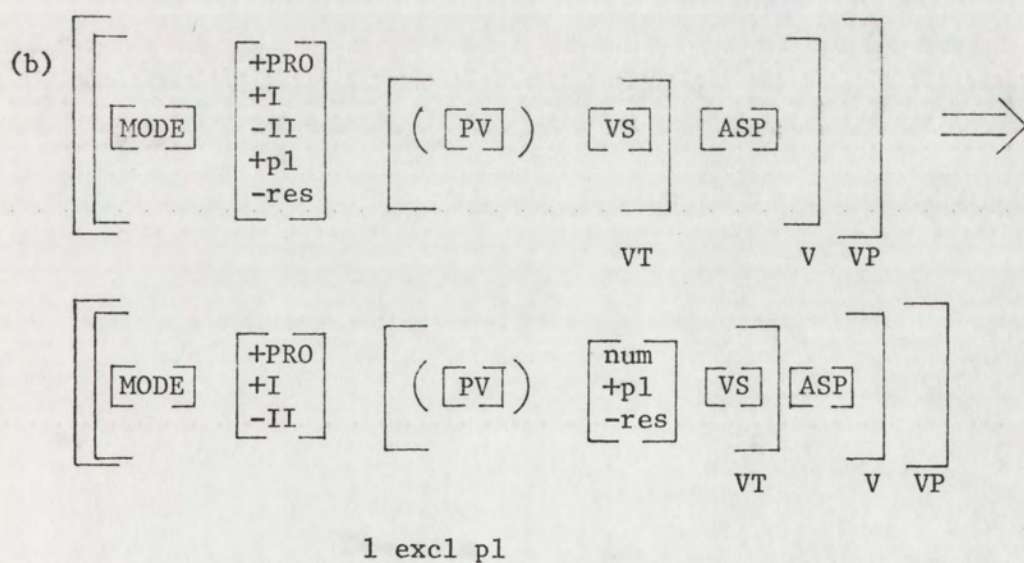
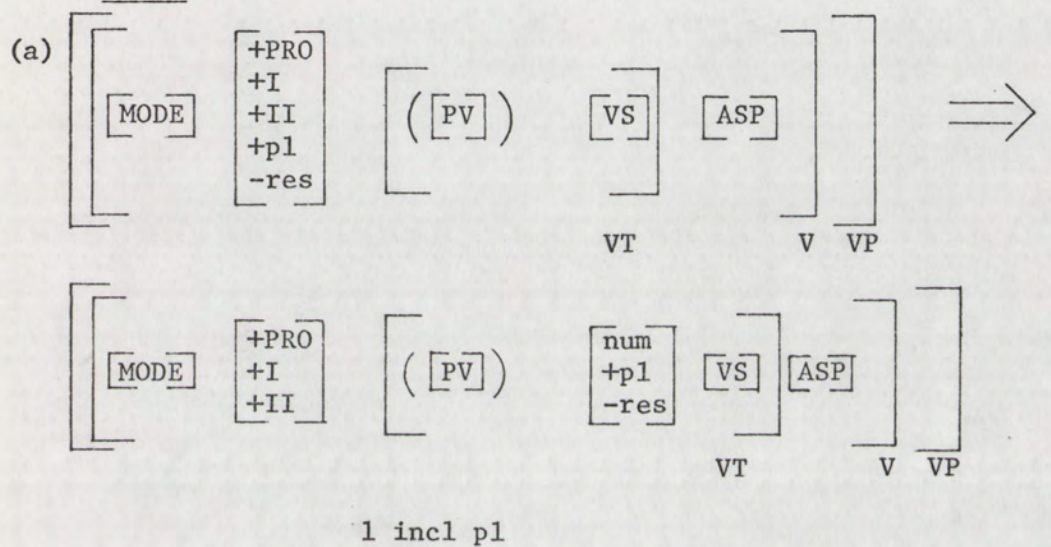
2 du

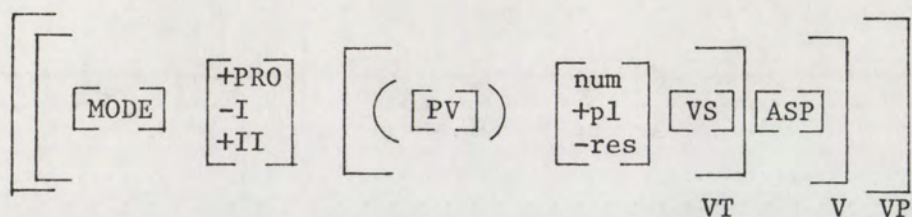


3 du

The rules for number segmentalization in non-third plural forms must be formalized in a slightly different way. The non-third plural number marker in active intransitive sentences follows the preverb, if there is one. The rules which create bipartite feature bundles in non-third plural forms must therefore be formalized as follows:

T-NUMBER SEGMENTALIZATION OF NON-THIRD PLURAL SUBJECT
FORMS

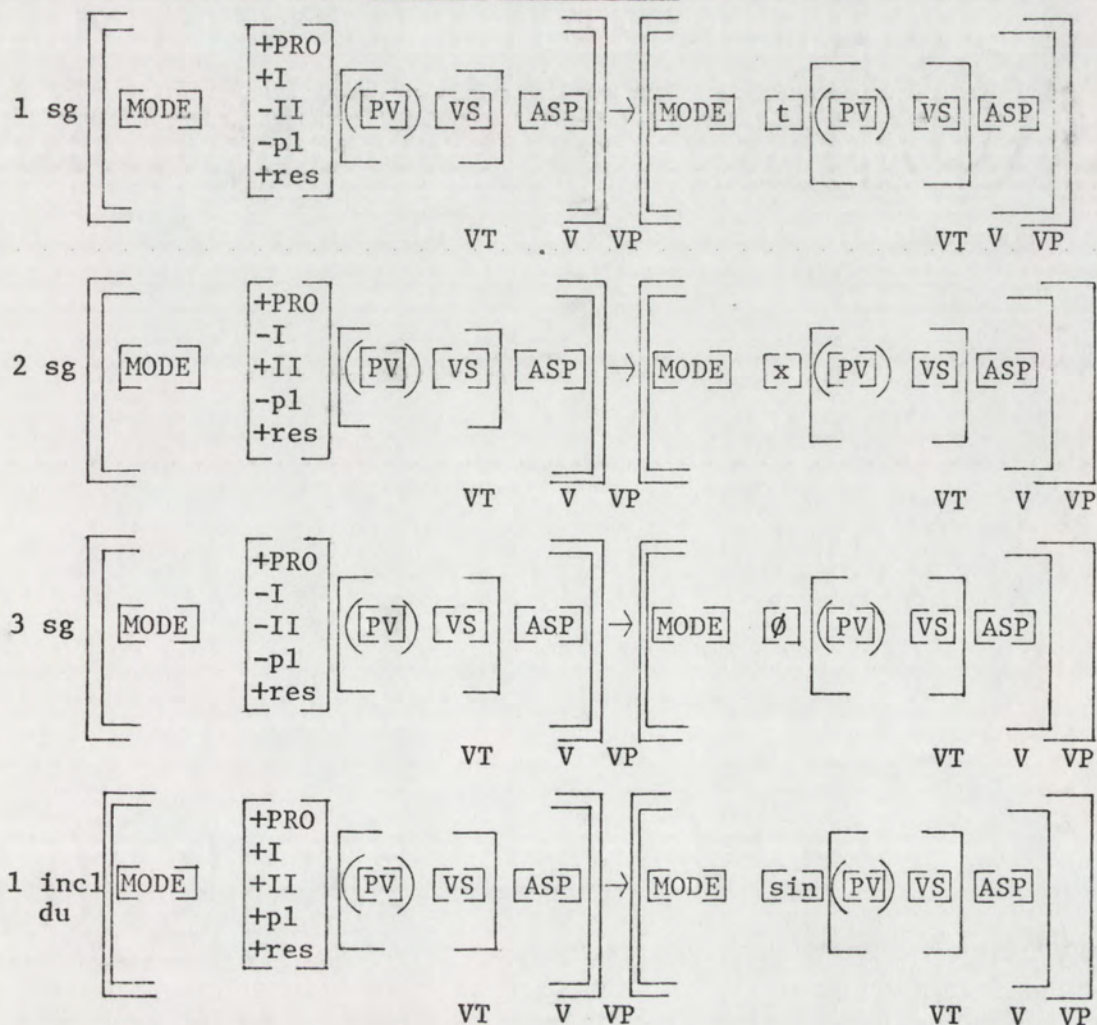


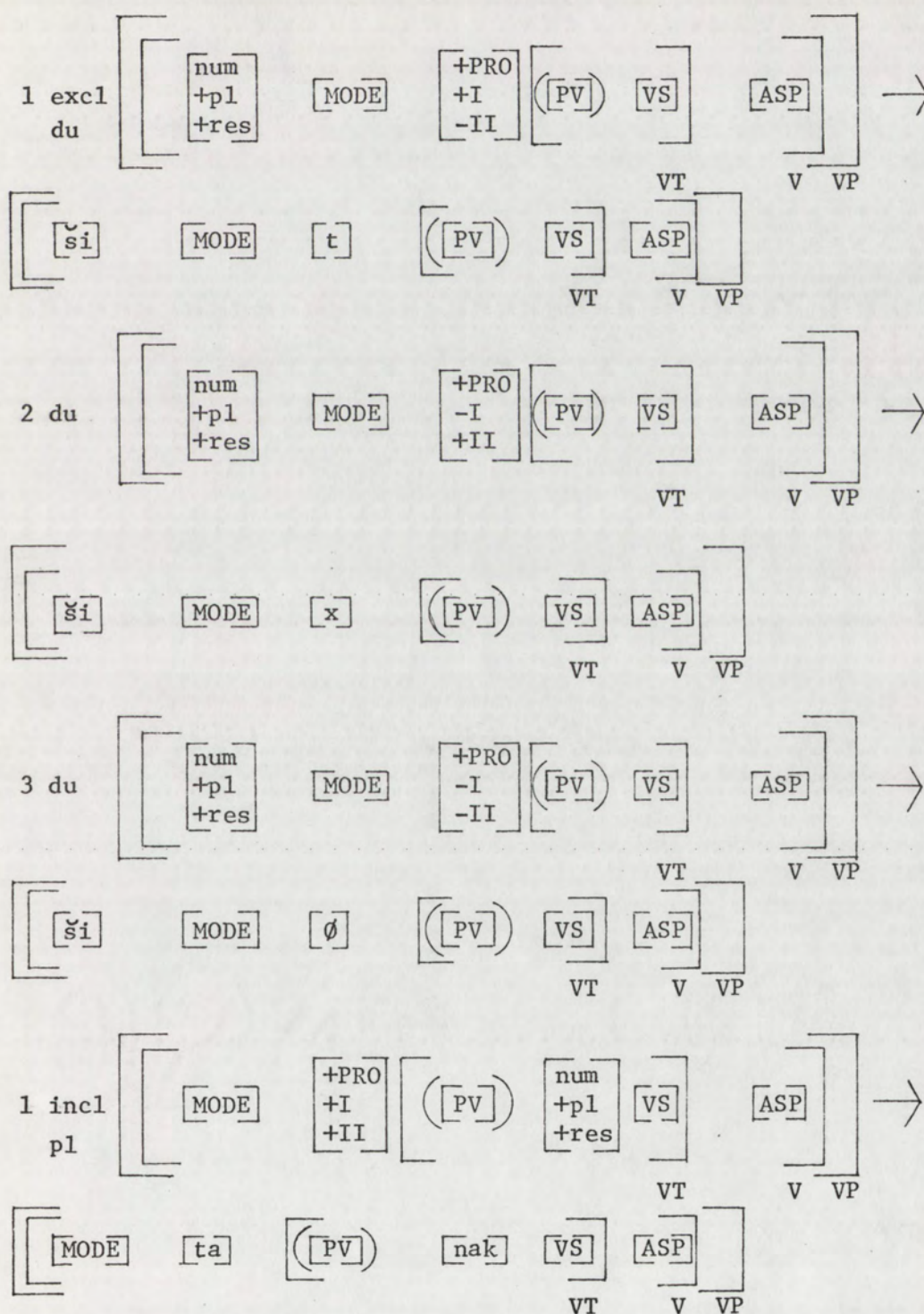


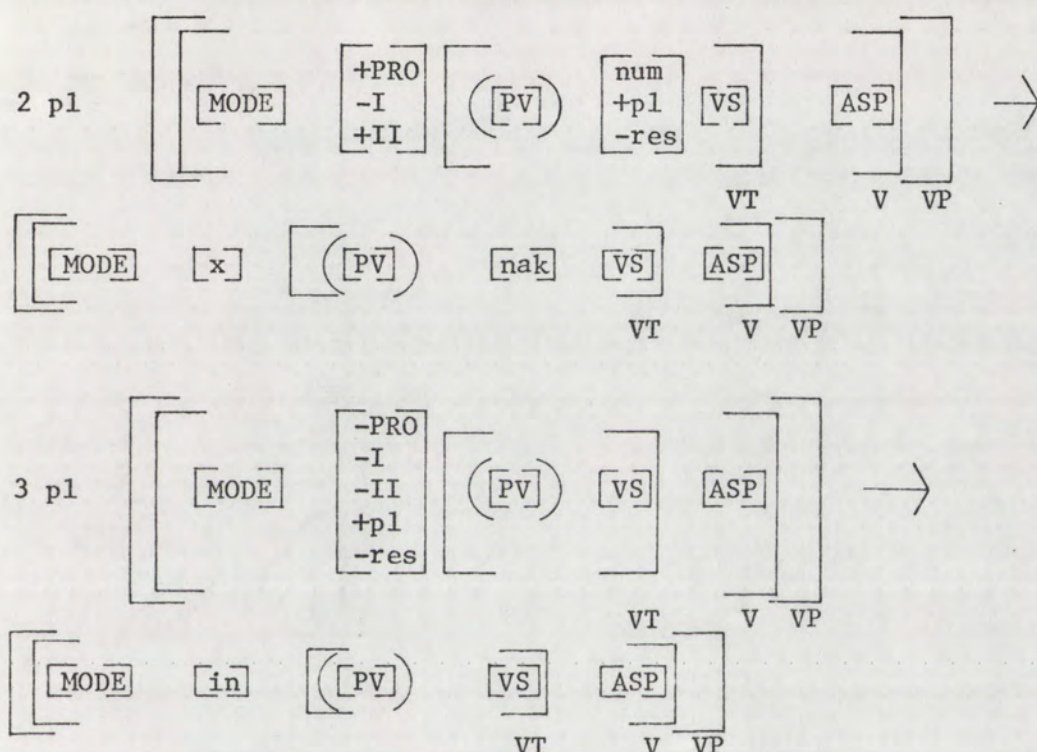
2 pl

Spellings may now be assigned to the feature bundles created by the operations of subject agreement and number segmentalization. The complete set of spellings for subject pronominal forms in active intransitive sentences is presented below. The set of rules shows in an explicit fashion that the pronominal affixes replace specific feature bundles.

Spelling Rules of the Active Intransitive
Subject Pronominals







To the analysis as developed thus far, it might be objected that subject agreement and number segmentalization should not be formulated as separate rules. A rule of subject agreement could be devised so that it would copy person features and number features as separate bundles, and immediately assign number features to the correct locus. However, we must still account for subject agreement in transitive clauses. In transitive clauses number marking for dual and plural subjects is neutralized. Because of this, number of transitive subjects is not marked in the same way as subject number in intransitive clauses. If we formulate subject agreement and number segmentalization as two separate processes, as we have done, only the number segmentalization rules and actual spelling rules for subject forms in transitive clauses need differ from those in

active intransitive clauses.

4.5 Subject Agreement in Stative Intransitive Clauses

Stative intransitive verb themes like his+ta·hiš "to be thirsty" (see Table 3.2) are inflected with the object pronouns employed to mark the transitive object. Only the third person plural pronominal affix in stative intransitive clauses differs from the third person pronominal affix which marks the direct object in transitive clauses. The formal identification of the pronominals associated with stative verbs and the pronominals which mark the direct object in transitive clauses suggests that person agreement in stative verbs might be accomplished by a rule of object, rather than subject, agreement.

We observe, however, that stative intransitive verbs, like active intransitives, are defined by the strict subcategorization frame [___]_{VP}. That is, there is only one NP constituent associated with stative intransitive verbs. Formally, stative intransitive constructions are parallel to active intransitive ones, except that surface case-marking differs in the two constructions.

If we claim that the single NP constituent in stative intransitive constructions occupies the same position on a deep structure tree as the transitive object, we are in effect claiming that stative verbs are defined by the subcategorization frame [NP___]_{VP}, indistinguishable from the frame which subcategorizes transitive verbs. We are then forced to consider stative constructions to be underlying transitive constructions, with some sort of 'impersonal'

or 'understood' transitive subject which is never realized in surface structures. This position is untenable, since there is never any case in which we can show that stative verbs have more than one primary NP associated with them.

Instead, we claim that Arikara exhibits a surface distinction between two types of intransitive clauses. In the active intransitive clause type, the single NP constituent in the function of intransitive subject is explicitly agentive at the surface level, i.e., is inflected with the subject pronouns. In the stative intransitive clause type the single NP constituent in the function of intransitive subject is explicitly patientive at the surface level, i.e., is inflected with the object pronouns. At the surface, then, Arikara exhibits split-intransitivity.¹

Surface case-marking in stative intransitive clauses corresponds fairly well to semantic notions. That is, stative verbs designate a state, condition, or process (e.g., "to be cold," "to be hungry," "to die," "to be thirsty," "to be needy," and so forth) which affect the associated subject. Semantically, the subject cannot be described as the agent of the state or condition predicated by the verb. The congruence of semantic notions and surface case-marking is a topic that deserves further attention. Some tentative suggestions regarding a possible semantic interpretation of the split in Arikara are proposed in Chapter V. Although we are able to characterize semantically the set of stative verbs that actually occurs in Arikara, it is nevertheless true that we are not able to establish

a firm set of criteria enabling us to predict which intransitive verbs will be stative, and which active.

A descriptively adequate grammar of Arikara must include a subcategorization rule which classifies verbs as [\pm stative]:

(1) V ----->[\pm stative]

The general lexical rule which replaces complex symbols in preterminal strings with lexical items can replace a complex symbol dominated by [V,+stative] only with a verb theme specified as [\pm stative] in the lexicon.

The deep structure of simple stative intransitive sentences is exactly the same as that of simple active intransitive sentences. The presence of a complex symbol dominated by a V marked [\pm stative] triggers a transformational rule. This transformation, T-STATIVE, moves the NP dominated by S on an underlying tree and reattaches it under the domination of the VP. Following this transformation, NP is in a position on a tree equivalent to that occupied by the transitive object. T-STATIVE is formalized below.

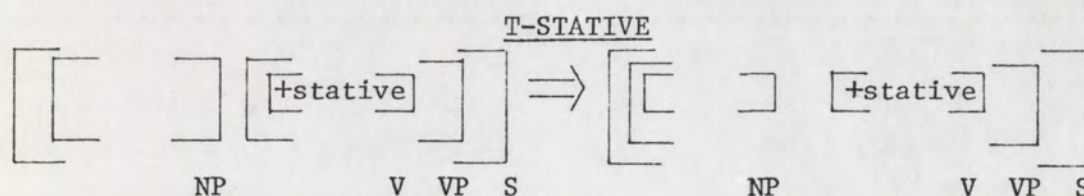
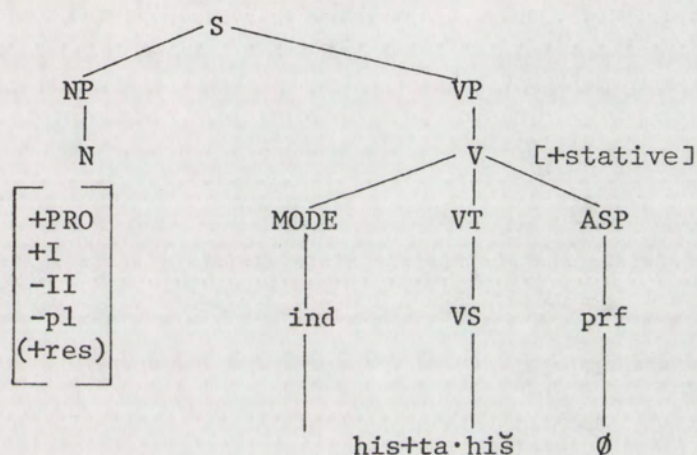
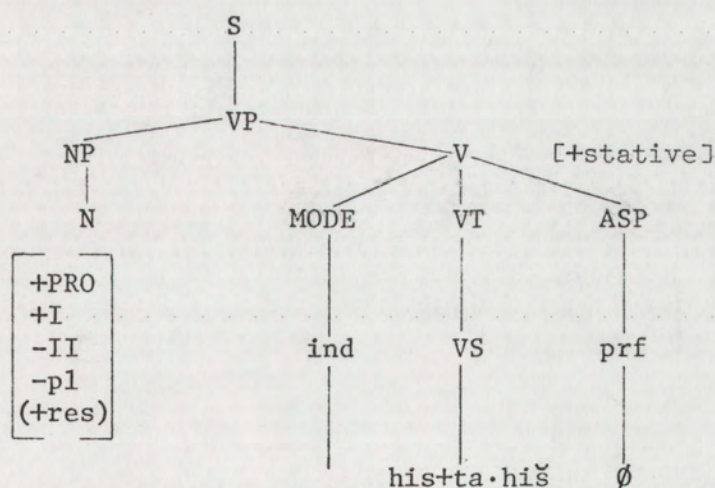


Figure (a) represents the deep structure underlying the sentence [tikuhista·hiš] "I am thirsty". Figure (b) represents the structural change produced in the phrase marker by the application of T-STATIVE.

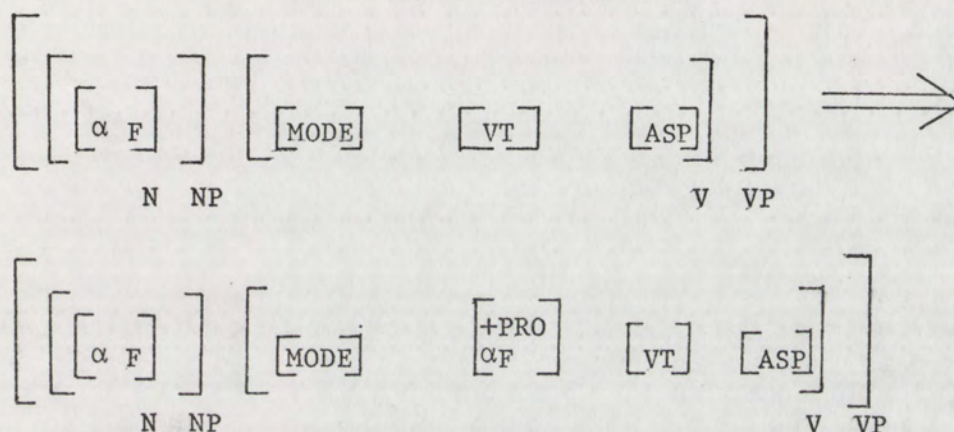
(a)



(b)



Person agreement is accomplished following T-STATIVE by a rule of object agreement. The rule of object agreement operates on the same person and number features found in active intransitive clauses. The rule of object agreement, however, is formulated so that it duplicates the person and number features of nominals dominated by VP.

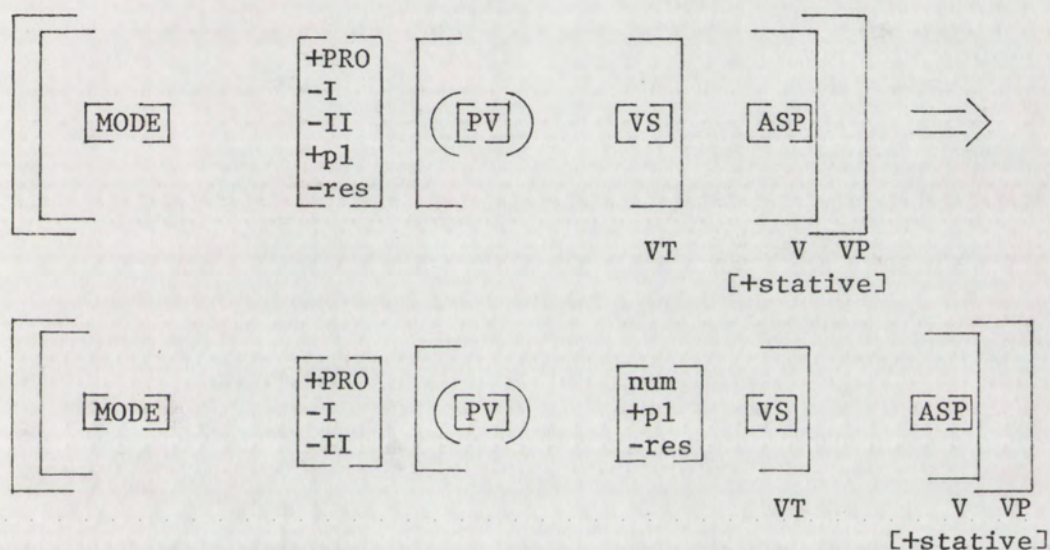
T-OBJECT AGREEMENT

F=I, II, pl, res

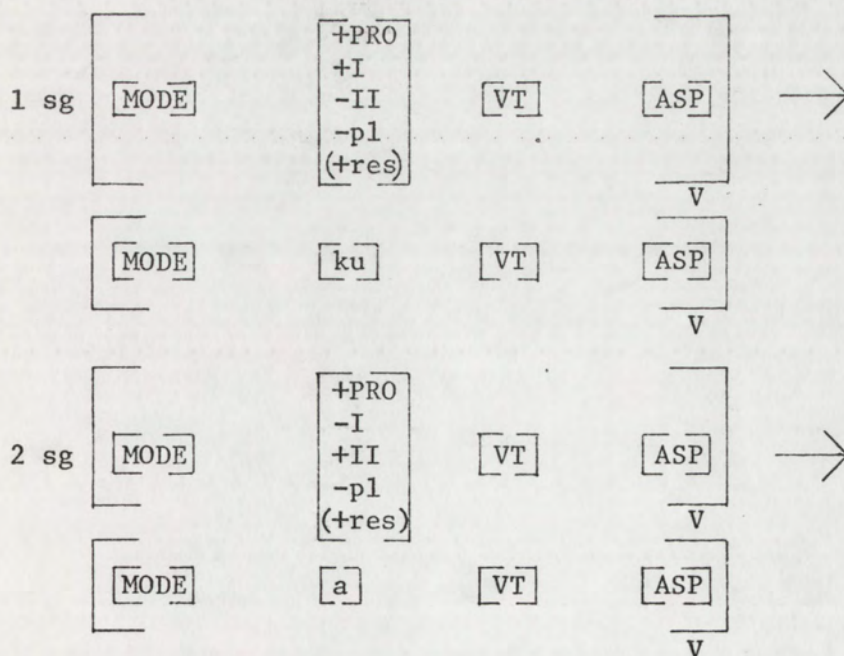
The rule of object agreement copies the person and number features in the verb following the modal marker. As in T-SUBJECT AGREEMENT, it also specifies all transformationally-created segments within the verb as [+PRO].

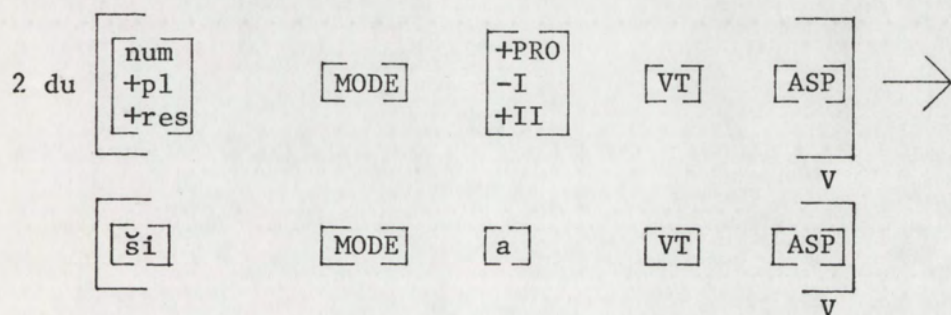
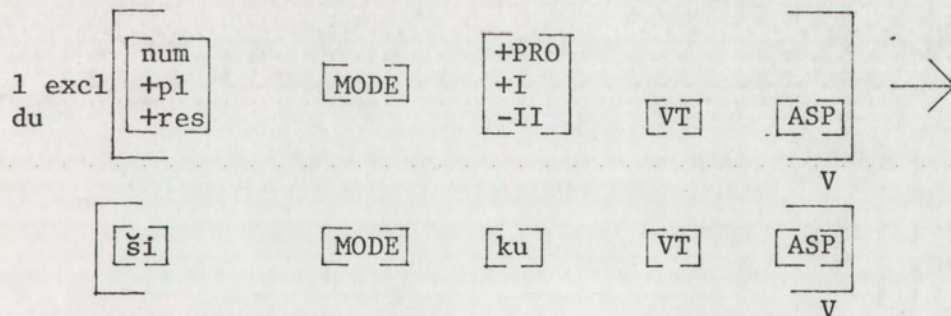
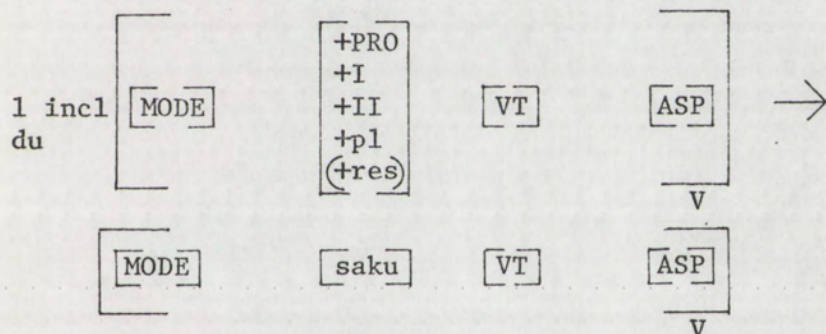
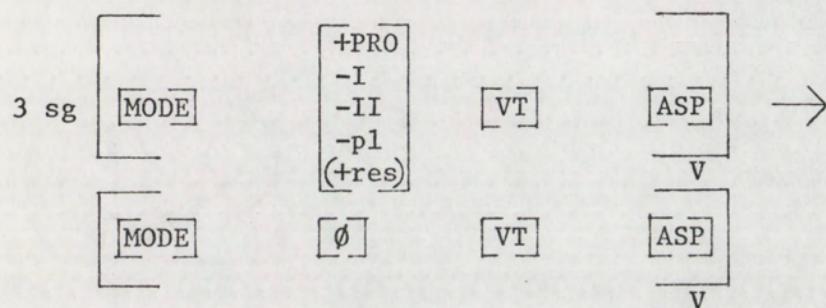
Rules of number segmentalization parallel those required in active intransitive clauses, with one exception. In stative intransitive clauses a rule of number segmentalization operates on third person plural feature bundles and creates a bipartite structure with person features in one bundle, number features in another.

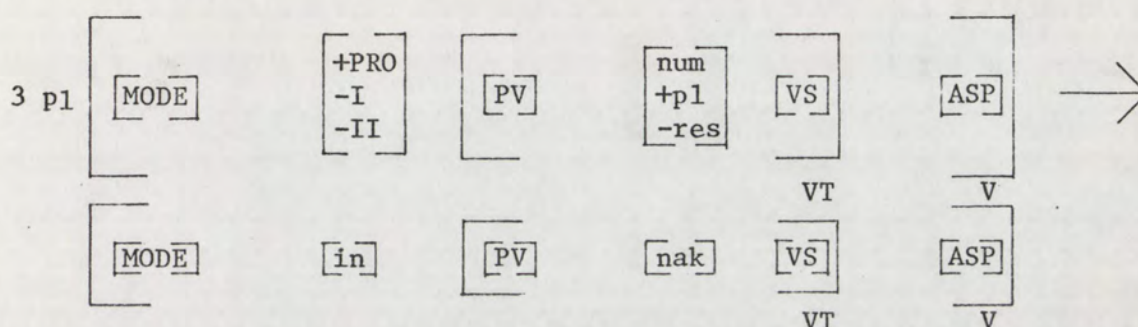
T-THIRD PERSON PLURAL NUMBER SEGMENTALIZATION
(STATIVE INTRANSITIVE CLAUSES)



Spelling Rules of the Stative Intransitive
Subject Pronominals







4.6 Person Agreement in the Inchoative Aspect of Descriptive Verbs

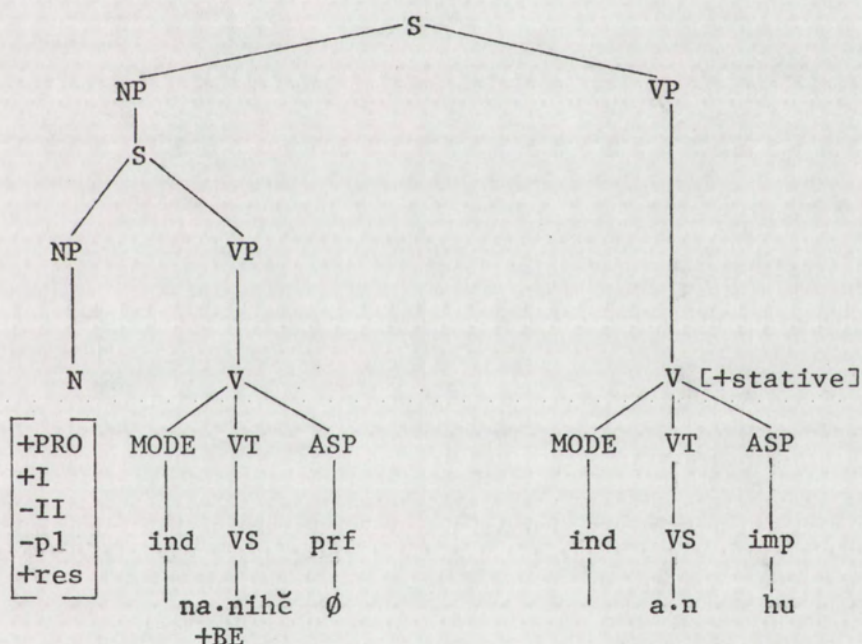
The description of Arikara deep structure is regularized by the assumption that noun phrases in active and stative intransitive constructions derive from a unitary underlying source, and that the difference in surface case-marking in the two clause types can be explained in terms of the inherent verb feature [+stative]. As we have seen, this feature triggers a transformation which moves an underlying NP into a position on a phrase marker so that agreement in the verb can be determined by a rule of object agreement.

In Chapter III (section 4) we noted that descriptive verb themes are ordinarily inflected with the subject pronouns. The subject of a descriptive verb theme in inchoative aspect, however is inflected with the objective set of pronouns.

These inchoative intransitive constructions are actually complex. The phrase marker underlying these sentences contains a matrix sentence with constituents NP+VP. The NP of the matrix contains an embedded sentence complement. (The phrase structure rules must be revised so that NP may optionally be expanded as S. The rules are presented in revised form in Chapter VII). The verb of

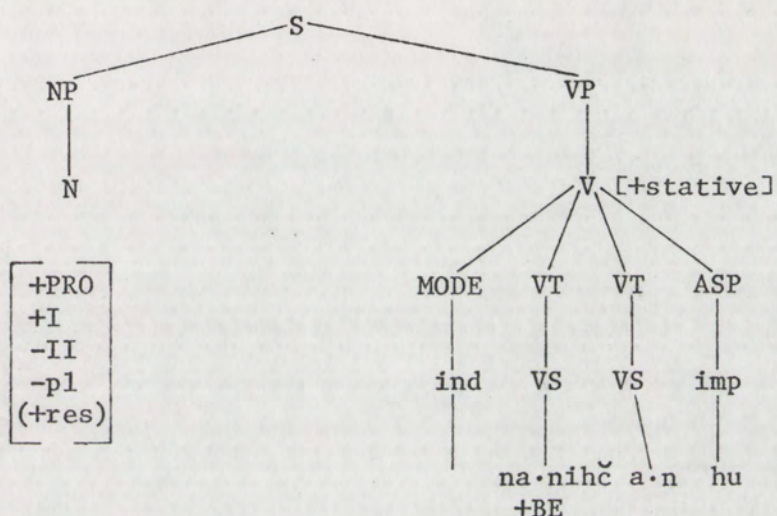
the matrix sentence contains the inchoative verb theme a.n "to become." The phrase marker underlying the sentence wetikura.niČa.nu? "I am getting old" is represented in (a).

(a)

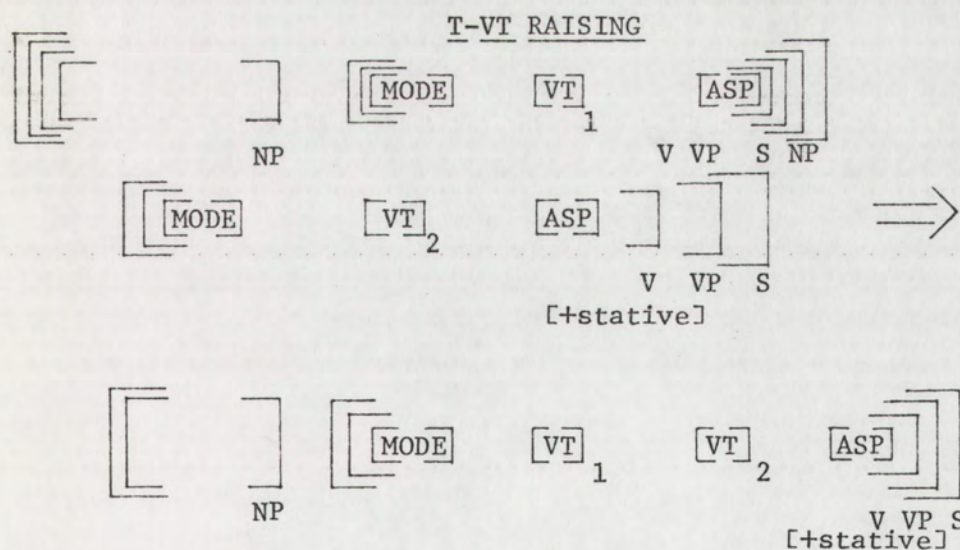


A transformational raising rule brings the VT of the embedded sentence up into the V of the next highest dominating sentence. The effect of the raising rule is illustrated in (b).

(b)

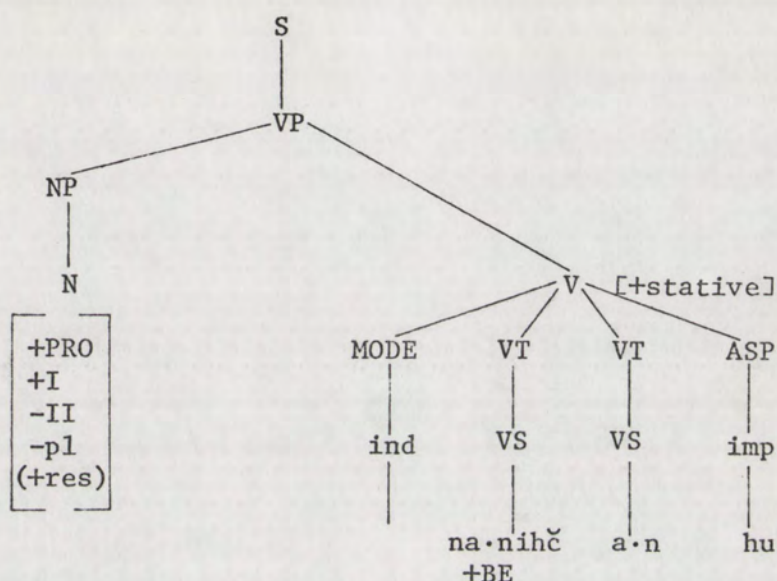


The raising rule which produces this structural change is formulated as T-VT RAISING.



T-VT RAISING creates a complex verb which has the same feature marking as the verb of the matrix, [+stative]. The presence of the feature [+stative] triggers T-STATIVE, resulting in (c).

(c)



Person agreement is accomplished by the rule of object agreement in the same way as in simple underlying stative intransitive constructions. The transformational rules must be ordered so that T-RAISING precedes T-STATIVE. Both rules must precede person agreement.

4.7 Modal Prefix Agreement

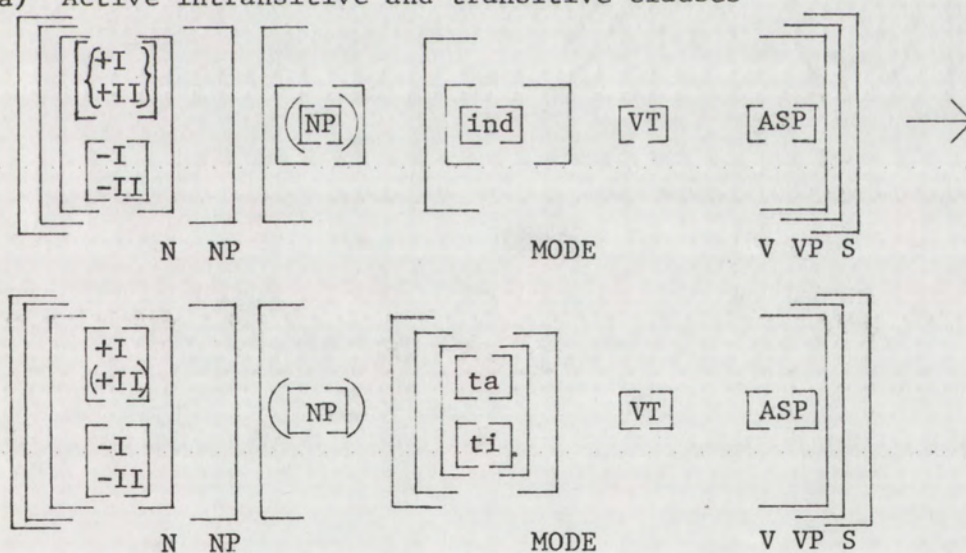
The form of the indicative modal prefix ta- co-occurs with subjects in active intransitive clauses specified as [+I] and/or [+II]. The indicative prefix ti- co-occurs with subjects in active intransitive clauses specified as [-I, -II]. The form of the indicative modal prefix ti- co-occurs with all persons throughout the stative intransitive paradigm.

These facts indicate that the shape of the modal marker ta- agrees with the features [+I] and/or [+II] in a noun phrase constituent dominated by S. The indicative modal marker is assigned the shape ti- when there are no noun phrase constituents dominated by S

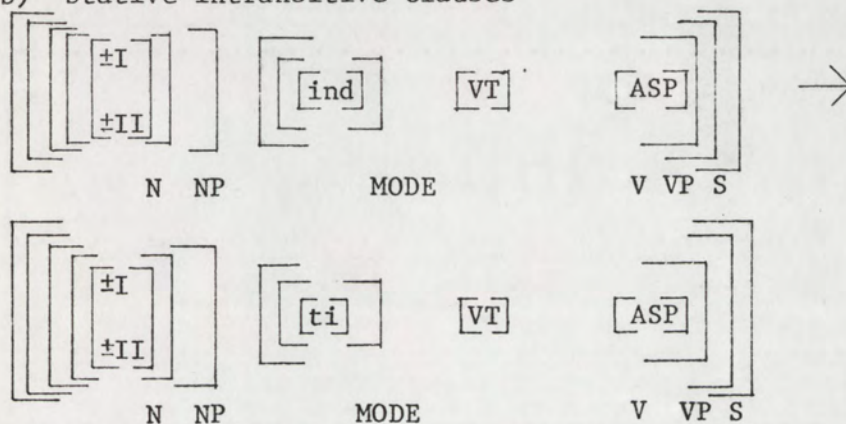
containing the features [+I] and/or [+II]. Modal prefix agreement in stative clauses is determined following T-STATIVE, when there are no noun phrase constituents dominated by S. The rules of modal prefix agreement are formulated below as spelling rules which show explicitly the shape assigned to [ind] when it co-occurs with the specified feature bundles.

MODAL PREFIX AGREEMENT

(a) Active intransitive and transitive clauses



(b) Stative intransitive clauses



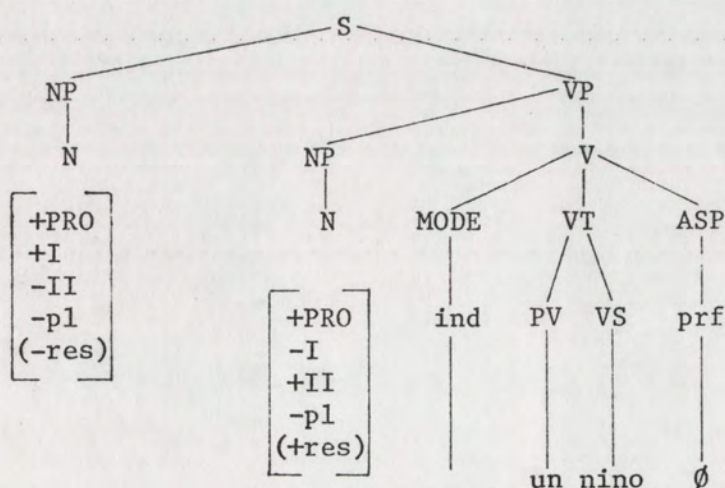
Sub-part (a) accounts for the shape of the indicative modal prefix in any phrase marker in which person features are contained in a complex symbol in an NP directly dominated by S. Sub-part (b) accounts for the shape of the indicative modal prefix in a phrase marker in which the single NP associated with the verb is dominated by VP, i.e., in stative intransitive clauses.

4.8 Person Agreement in Transitive Clauses

Transitive verb forms agree with both subject and object nominals. The order of nominal constituents within the verb is invariably subject-object. Features of complex symbols must be duplicated in the verb by the application of T-OBJECT AGREEMENT and T-SUBJECT AGREEMENT, in that order.

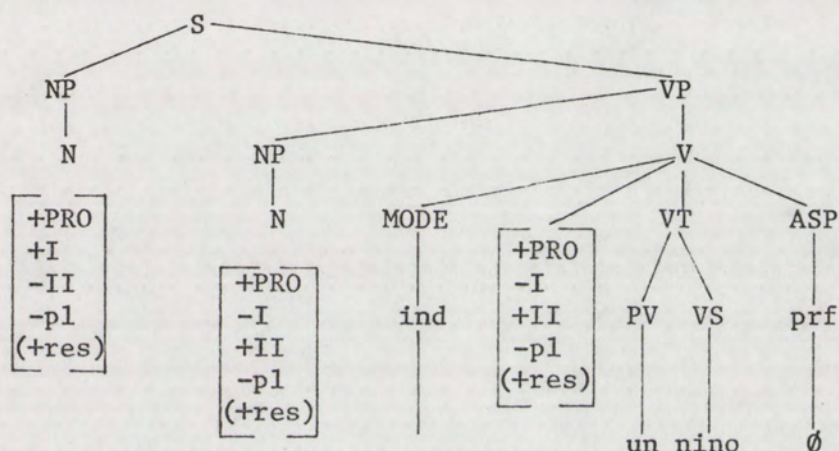
The phrase marker underlying the sentence [tato.nino?] "I fear you(sg)" is represented as in (a).

(a)



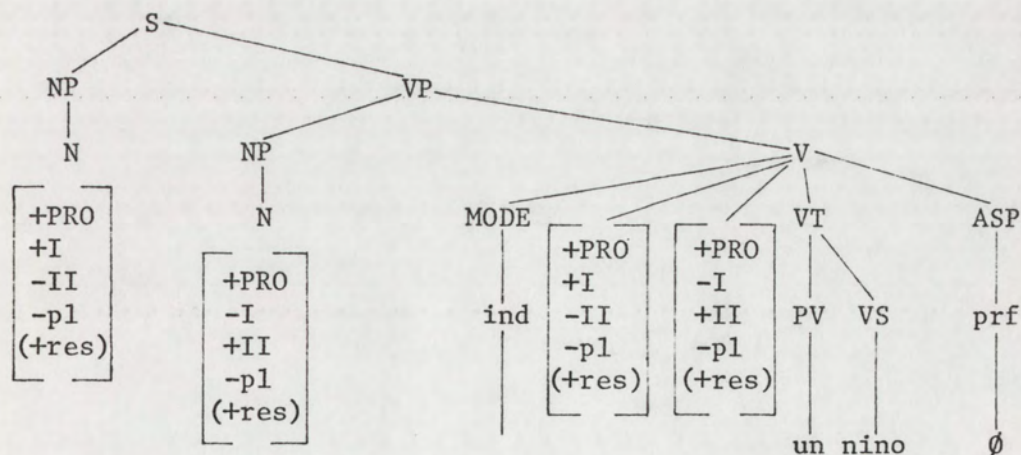
The rule of object agreement applies to this structure creating the structural change illustrated in (b).

(b)



Subsequently the rule of subject agreement applies, creating a second feature bundle to the left of the first, as in (c).

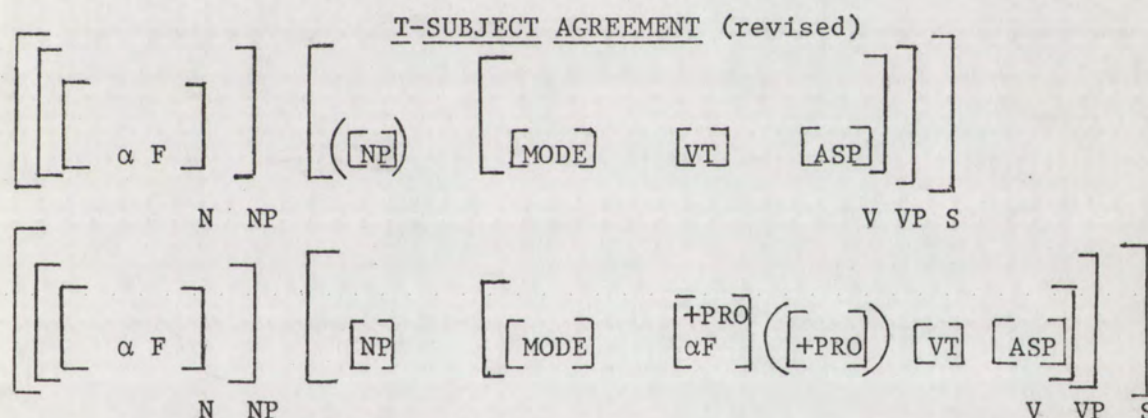
(c)



The rule of object agreement as formulated correctly copies the features of the object nominal in a position preceding the VT. The rule of subject agreement as it now stands, however, does not explicitly account for the copying of subject features in transi-

tive clauses in a position preceding the object feature bundle.

T-SUBJECT AGREEMENT must be modified slightly so that it copies features of the subject nominal in the appropriate position in both active intransitive and transitive clauses. The necessary modifications are made in the revised version of T-SUBJECT AGREEMENT below.



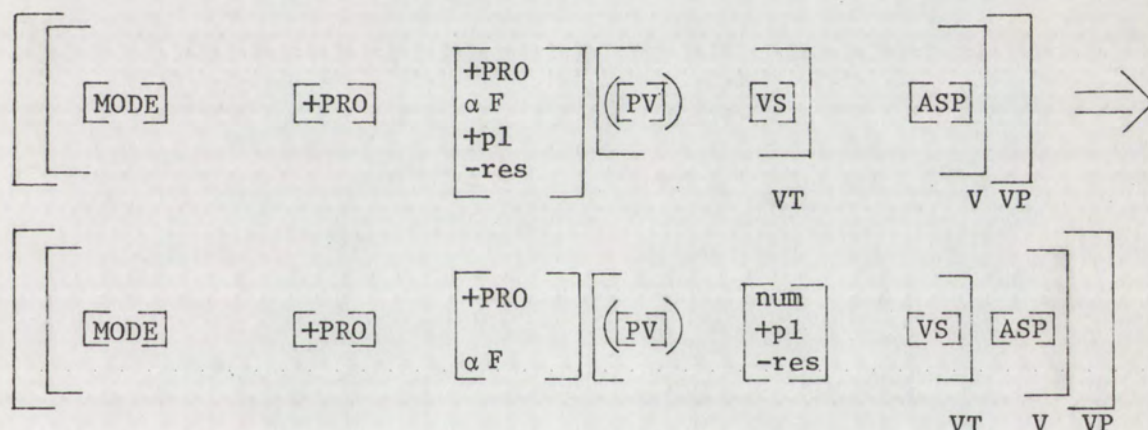
F=I, II, pl, res

This modification of the rule indicates that subject features are copied preceding the VT in intransitive clauses, and preceding the transformationally-created object feature bundle in transitive clauses.

Rules of number segmentalization are somewhat more complex in transitive clauses than in either of the two intransitive clause types. The transitive object pronominal forms are given in Chapter III (section 5). Number markers for all [+pl, -res] transitive objects occur in a position preceding the VS and following the PV, in complex themes. A generalized rule of number segmentalization is formulated which duplicates number features of all [+pl, -res]

bundles in the correct locus. (Phonological realization of number features will vary with person features, however).

T-[+PL, -RES] OBJECT NUMBER SEGMENTALIZATION IN
TRANSITIVE CLAUSES.



Singular object forms do not undergo number segmentalization. Number of dual object forms, with the exception of the first person inclusive dual, is marked by the prefix ši. Number segmentalization in dual object forms is as in intransitive clauses, except where the transitive subject is nonsingular.

In the transitive subject forms (see p. 73) the distinction between dual and plural number is neutralized, and it is the dual that is marked. We expect the transitive subject to be represented by the same forms employed to mark plural subject forms in active intransitive clauses, as follows:

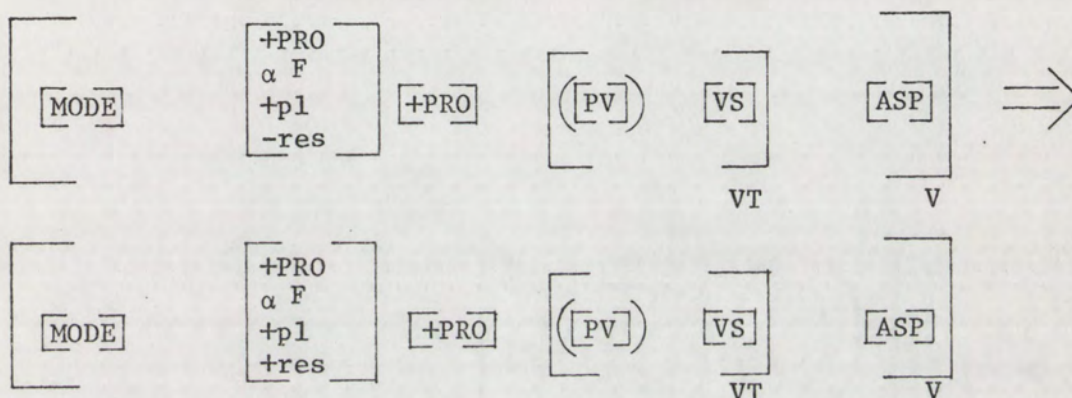
1 incl pl	<u>ta...nak</u>
1 excl pl	<u>t...nak</u>
2 pl	<u>x...nak</u>
3 pl	<u>in...∅</u>

Instead, in transitive clauses these forms are realized as follows:

1 incl pl	<u>ši...sin</u>
1 excl pl	<u>ši...t</u>
2 pl	<u>ši...x</u>
3 pl	<u>ši...∅</u> (first and second person objects)
	<u>ši...in</u> (third person objects)

In transitive clauses, nak is only employed to specify object number. The number marker ši, on the other hand, can be construed to mark dual object number, dual subject number, or plural subject number. In addition, the element ši appears only once in any surface form, so that if the transitive object is dual, and the transitive subject non-singular, it is impossible to determine (without context) whether the ši in a transitive form is marking dual object number or non-singular subject number. Because of this, transitive surface forms involving ši may be interpreted in several different ways. Ambiguous pronominal sequences are listed in Table 4.4, with possible underlying associated feature bundles for each sequence.

To account for number marking of the transitive subject we must formulate a rule which operates on any subject feature bundle within the V (intransitive clauses) specified as [+pl, -res] and changes the feature value of [res] from (-) to (+). The rule is formulated as T-NUMBER NEUTRALIZATION. The rule applies following object and subject agreement, and preceding number segmentalization.

T-NUMBER NEUTRALIZATION

We must also account for the fact that in any surface form the number marker ši may occur only once, even though the object be dual and the subject non-singular. Formulated as T-ŠI DELETION, the rule specifies that when two feature bundles, both specified as [+pl, +res] occur on a phrase marker, the number features in the second bundle are deleted. (This rule could actually be formulated as a sub-part of a more complex rule of T-NUMBER NEUTRALIZATION. For purposes of clarity, however, it is presented as a separate rule).

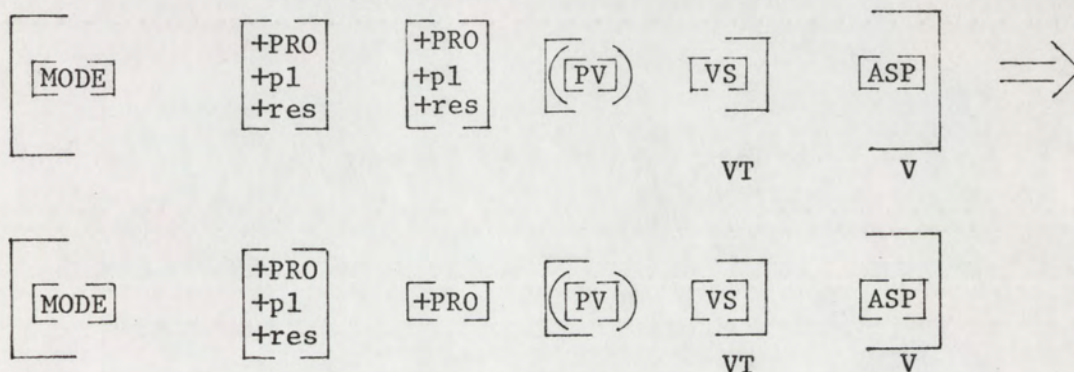
T-ŠI-DELETION

Table 4.4

Ambiguous Pronoun Sequences in
Transitive Clauses

Si-t-a

NP 1

NP 2

+ I
- II
+ pl
+ res

- I
+ II
- pl
+ res

1 excl du-2 sg

+ I
- II
- pl
+ res

- I
+ II
+ pl
+ res

1 sg-2 sg

- I
- II
+ pl
- res

- I
+ II
- pl
+ res

1 excl pl-2 sg

+ I
- II
+ pl
- res

- I
+ II
+ pl
+ res

1 excl pl-2 du

+ I
- II
+ pl
+ res

- I
+ II
+ pl
+ res

1 excl du-2 du

Si-t-ø

+ I
- II
- pl
+ res

- I
- II
+ pl
+ res

1 sg-3 du

+ I
- II
+ pl
- res

- I
- II
- pl
+ res

1 excl pl-3 sg

+ I
- II
+ pl
+ res

- I
- II
- pl
+ res

1 excl du-3 sg

Table 4.4 (cont)

	NP 1	NP 2	
	$\begin{bmatrix} + I \\ - II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} - I \\ - II \\ + pl \\ + res \end{bmatrix}$	1 excl du-3 du
	$\begin{bmatrix} + I \\ - II \\ + pl \\ - res \end{bmatrix}$	$\begin{bmatrix} - I \\ - II \\ + pl \\ + res \end{bmatrix}$	1 excl pl-3 du
Si-x-ku	$\begin{bmatrix} - I \\ + II \\ - pl \\ + res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ + pl \\ + res \end{bmatrix}$	2 sg-1 excl du
	$\begin{bmatrix} - I \\ + II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ - pl \\ + res \end{bmatrix}$	2 du-1 sg
	$\begin{bmatrix} - I \\ + II \\ + pl \\ - res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ - pl \\ + res \end{bmatrix}$	2 pl-1 sg
	$\begin{bmatrix} - I \\ + II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ + pl \\ + res \end{bmatrix}$	2 du-1 excl du
	$\begin{bmatrix} - I \\ + II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ + pl \\ + res \end{bmatrix}$	2 pl-1 excl du
Si-x-ø	$\begin{bmatrix} - I \\ + II \\ - pl \\ + res \end{bmatrix}$	$\begin{bmatrix} - I \\ - II \\ + pl \\ + res \end{bmatrix}$	2 sg-3 du
	$\begin{bmatrix} - I \\ + II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} - I \\ - II \\ - pl \\ + res \end{bmatrix}$	2 du-3 sg
	$\begin{bmatrix} - I \\ + II \\ + pl \\ - res \end{bmatrix}$	$\begin{bmatrix} - I \\ - II \\ - pl \\ + res \end{bmatrix}$	2 pl-3 sg

Table 4.4 (cont)

	<u>NP 1</u>	<u>NP 2</u>	
	$\begin{bmatrix} - I \\ + II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} - I \\ - II \\ + pl \\ + res \end{bmatrix}$	2 du-3 du
	$\begin{bmatrix} - I \\ + II \\ + pl \\ - res \end{bmatrix}$	$\begin{bmatrix} - I \\ - II \\ + pl \\ + res \end{bmatrix}$	2 pl-3 du
Si-x-ku	$\begin{bmatrix} - I \\ + II \\ - pl \\ + res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ + pl \\ + res \end{bmatrix}$	2 sg-1 excl du
	$\begin{bmatrix} - I \\ + II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ - pl \\ + res \end{bmatrix}$	2 du-1 sg
	$\begin{bmatrix} - I \\ + II \\ + pl \\ - res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ - pl \\ + res \end{bmatrix}$	2 pl-1 sg
	$\begin{bmatrix} - I \\ + II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ + pl \\ + res \end{bmatrix}$	2 du-1 excl du
	$\begin{bmatrix} - I \\ + II \\ + pl \\ - res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ + pl \\ + res \end{bmatrix}$	2 pl-1 excl du
Si-x-ø	$\begin{bmatrix} - I \\ + II \\ - pl \\ + res \end{bmatrix}$	$\begin{bmatrix} - I \\ - II \\ + pl \\ + res \end{bmatrix}$	2 sg-3 du
	$\begin{bmatrix} - I \\ + II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} - I \\ - II \\ - pl \\ + res \end{bmatrix}$	2 du-3 sg
	$\begin{bmatrix} - I \\ + II \\ + pl \\ - res \end{bmatrix}$	$\begin{bmatrix} - I \\ - II \\ - pl \\ + res \end{bmatrix}$	2 pl-3 sg

Table 4.4 (cont)

	<u>NP 1</u>	<u>NP 2</u>	
	$\begin{bmatrix} - I \\ + II \\ - pl \\ + res \end{bmatrix}$	$\begin{bmatrix} - I \\ - II \\ + pl \\ + res \end{bmatrix}$	2 du-3 du
	$\begin{bmatrix} - I \\ + II \\ + pl \\ - res \end{bmatrix}$	$\begin{bmatrix} - I \\ - II \\ + pl \\ + res \end{bmatrix}$	2 pl-3 du
Si-Ø-ku	$\begin{bmatrix} - I \\ - II \\ - pl \\ + res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ + pl \\ + res \end{bmatrix}$	3 sg-1 excl du
	$\begin{bmatrix} - I \\ - II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ - pl \\ + res \end{bmatrix}$	3 du-1 sg
	$\begin{bmatrix} - I \\ - II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ + pl \\ + res \end{bmatrix}$	3 du-1 excl du
	$\begin{bmatrix} - I \\ - II \\ + pl \\ - res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ - pl \\ + res \end{bmatrix}$	3 pl-1 sg
	$\begin{bmatrix} - I \\ - II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} + I \\ - II \\ + pl \\ + res \end{bmatrix}$	3 pl-1 excl du
Si-Ø-a	$\begin{bmatrix} - I \\ - II \\ - pl \\ + res \end{bmatrix}$	$\begin{bmatrix} - I \\ + II \\ + pl \\ + res \end{bmatrix}$	3 sg-2 du
	$\begin{bmatrix} - I \\ - II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} - I \\ + II \\ - pl \\ + res \end{bmatrix}$	3 du-3 sg
	$\begin{bmatrix} - I \\ + II \\ + pl \\ + res \end{bmatrix}$	$\begin{bmatrix} - I \\ + II \\ + pl \\ + res \end{bmatrix}$	3 du-2 du

Table 4.4 (cont)

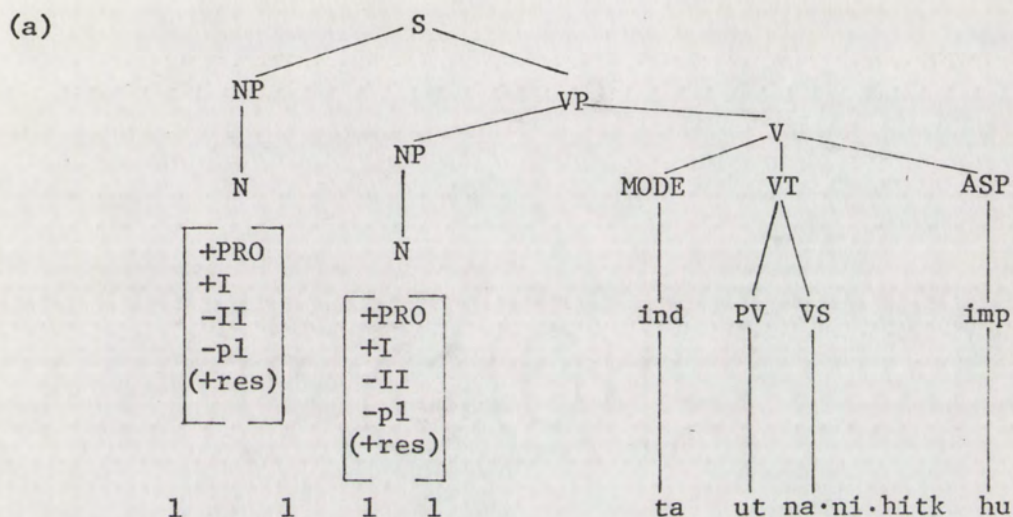
	NP 1	NP 2	
	<div>- I</div> <div>- II</div> <div>+ pl</div> <div>- res</div>	<div>- I</div> <div>+ II</div> <div>+ pl</div> <div>+ res</div>	3 pl-2 sg
	<div>- I</div> <div>- II</div> <div>+ pl</div> <div>+ res</div>	<div>- I</div> <div>+ II</div> <div>+ pl</div> <div>+ res</div>	3 pl-2 du
Si-Ø-Ø	<div>- I</div> <div>- II</div> <div>+ pl</div> <div>+ res</div>	<div>- I</div> <div>- II</div> <div>+ pl</div> <div>+ res</div>	3 sg-3 du
	<div>- I</div> <div>- II</div> <div>+ pl</div> <div>+ res</div>	<div>- I</div> <div>- II</div> <div>+ pl</div> <div>+ res</div>	3 du-3 sg
	<div>- I</div> <div>- II</div> <div>+ pl</div> <div>+ res</div>	<div>- I</div> <div>- II</div> <div>+ pl</div> <div>+ res</div>	3 du-3 du
Si-sin-Ø	<div>+ I</div> <div>+ II</div> <div>+ pl</div> <div>- res</div>	<div>- I</div> <div>- II</div> <div>- pl</div> <div>+ res</div>	1 incl pl-3 sg
	<div>+ I</div> <div>+ II</div> <div>+ pl</div> <div>- res</div>	<div>- I</div> <div>- II</div> <div>- pl</div> <div>+ res</div>	1 incl pl-3 du
Si-in-Ø	<div>- I</div> <div>- II</div> <div>+ pl</div> <div>- res</div>	<div>- I</div> <div>- II</div> <div>- pl</div> <div>+ res</div>	3 pl-3 sg
	<div>- I</div> <div>- II</div> <div>+ pl</div> <div>- res</div>	<div>- I</div> <div>- II</div> <div>+ pl</div> <div>+ res</div>	3 pl-3 du

Number segmentalization now applies to only one of the two feature bundles in the transitive construction. The actual rules are not formalized here, because they operate in the same way as do rules of number segmentalization in intransitive clauses. Number segmentalization in transitive clauses applies after T-OBJECT AGREEMENT, T-SUBJECT AGREEMENT, T-NUMBER NEUTRALIZATION, and T-ŠI DELETION. Spelling rules then replace specific feature bundles with the appropriate pronominal forms.

4.9 Reflexivization

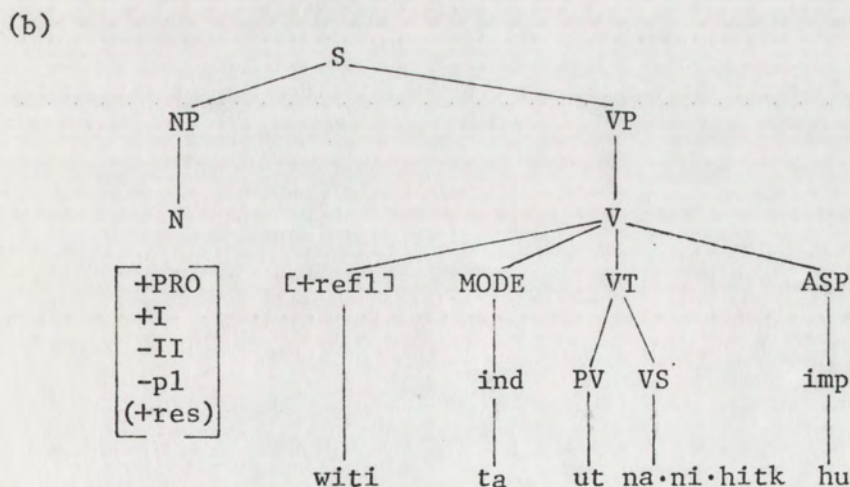
An Arikara verbal form is inflected with the reflexive prefix witi- when the (direct or indirect) object nominal of a sentence is identical to a preceding subject nominal within the same simple sentence structure. All nominals are specified as [-refl] in deep structure. In simple transitive, ditransitive, and intransitive clauses, a rule of reflexivization creates the feature [+refl] within the verb subject to identity of the direct or indirect object nominal with the subject nominal, and deletes the identical external object nominal. The series of operations that results in reflexivization is more complex in intransitive and ditransitive clauses than it is in simple transitive clauses, however.

We consider first reflexivization in transitive clauses. The phrase marker underlying the sentence wititatuḥna·ni·hitku? "I am smudging myself" is represented in (a).



Subnumerals (₁ ₁) mark identity of the noun phrases.

Reflexivization introduces the feature [+refl] into the verb subject to identity of the two noun phrases, and deletes the external object nominal, as in (b).



Since the resulting structure is in effect intransitivized, subject agreement now applies as in intransitive clauses.

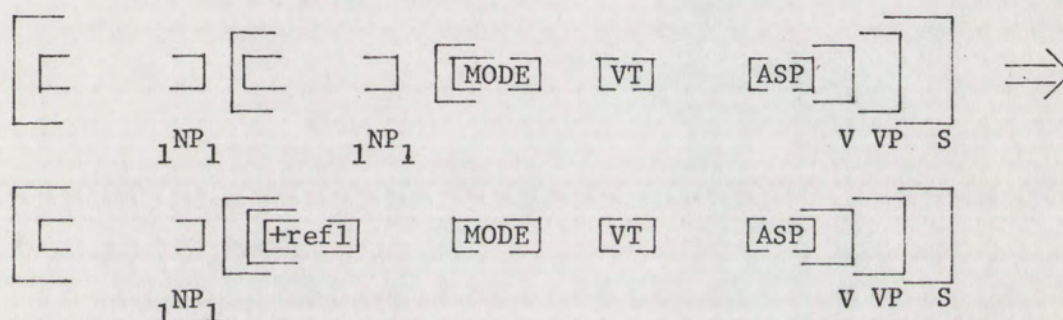
In ditransitive and intransitive constructions, on the other hand, the indirect object is specified as identical to the under-

lying subject. Where the subject and indirect object are identical, the indirect object is defined in deep structure as a benefactive nominal, containing the feature [+ben] (benefactive). Before reflexivization applies in ditransitive and intransitive clauses, (and following T-OBJECT AGREEMENT in ditransitive clauses) T-BENEFACTIVE operates, introducing the feature [+ben] into the verb (see section 4.12). Reflexivization applies to the derived structure, introducing the feature [+refl] into the verb and deleting the external indirect object nominal. Subject agreement follows reflexivization.

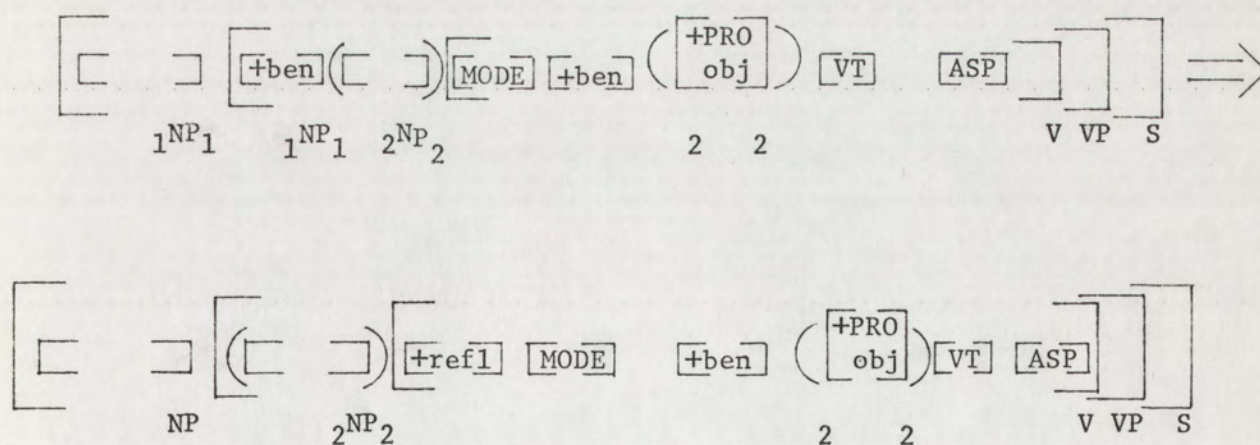
T-REFLEXIVE is formulated as a set of two rules. Sub-part (a) accounts for reflexivization in simple transitive clauses containing only subject and direct object nominals; (b) accounts for reflexivization in intransitive and ditransitive clauses, following T-BENEFACTIVE. Although separate rules are required to clearly specify the structural descriptions on which reflexivization operates, nevertheless the effect of T-REFLEXIVE is the same in both (a) and (b). Reflexivization creates the feature [+refl] in the verb subject to identity of an object nominal with the subject nominal on an underlying tree, and deletes the identical external (direct or indirect) object nominal.

T-REFLEXIVE

(a) Transitive Clauses (identical direct object nominal)



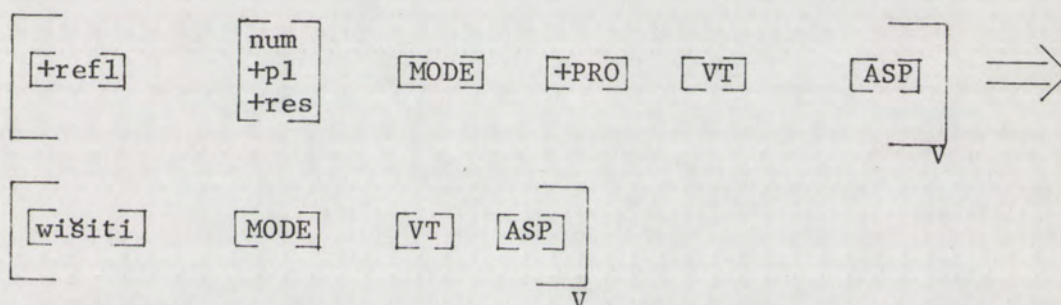
(b) Ditransitive and Intransitive Clauses (identical indirect object nominal)



A spelling readjustment is required to account for correct reflexive surface forms. We observed in Chapter III (section 6) that the reflexive prefix witi- is discontinuous in dual forms containing *ši*. Following T-REFLEXIVE, person agreement, and NUMBER

SEGMENTALIZATION, the rule of Dual Reflexive Spelling (abbreviated here to show only relevant information) makes the necessary spelling adjustments.

Dual Reflexive Spelling

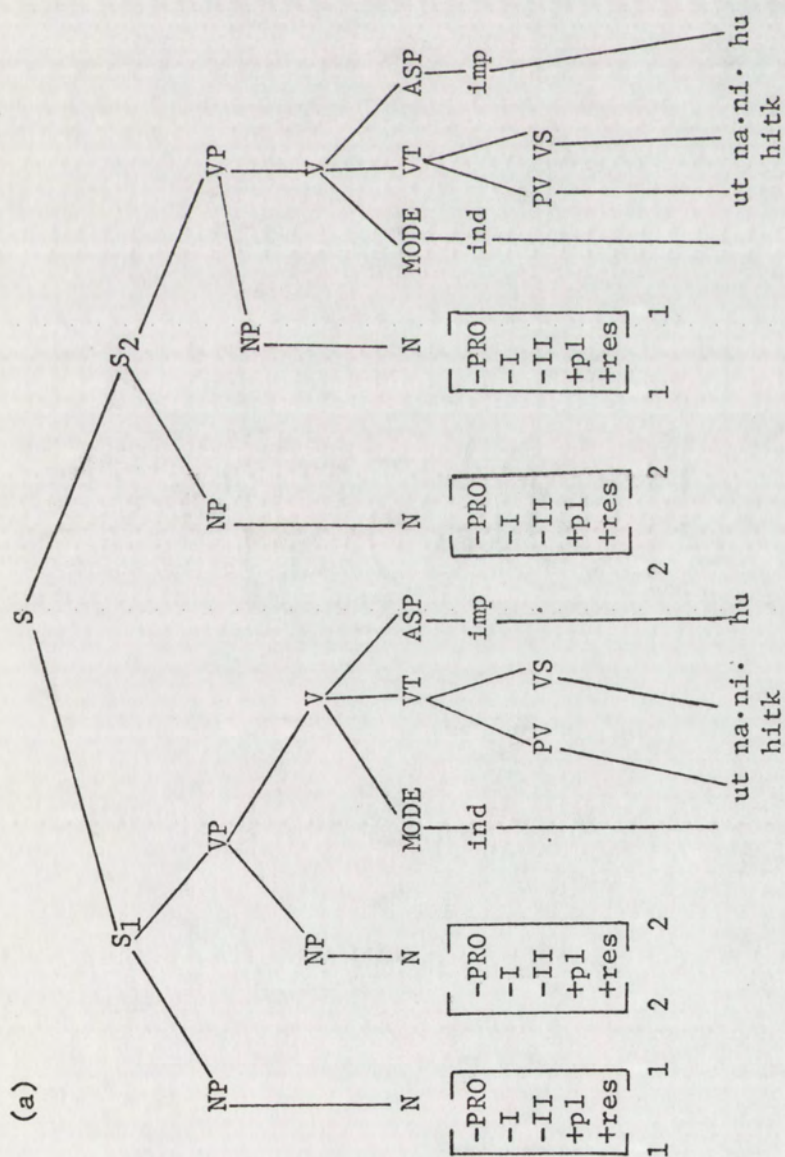


4.10 Reciprocals

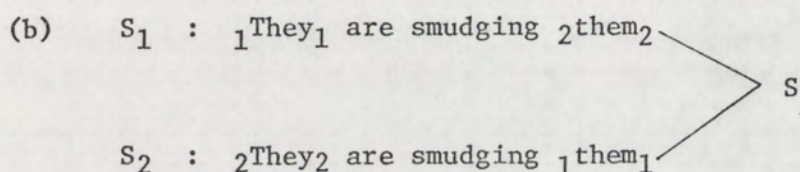
In Chapter III (section 7) we observed that constructions inflected with witi- permit the interpretation of reciprocal action, or action on "each other", when the subject nominal in transitive clauses is non-singular. Although reflexive and reciprocal constructions are identical in surface form, the meaning is different in each case. Consequently, sentences interpreted as action on "each other" are derived from an underlying source different from that of reflexives.

In keeping with the standard analysis (cf. Lees and Klima 1963:26-28) we suggest that reciprocal sentences such as wišitituhna.ni.hitku? "they(du) are smudging each other" are derived from an underlying phrase marker containing two conjoined sentences in which the subject nominal of S_1 is coreferential with the object nominal of S_2 , and the object nominal of S_1 is coreferential with

the subject nominal S_2 . The (abbreviated phrase marker underlying wiʃitituhna.ni.hitkuʔ in its reciprocal interpretation is represented in (a).



The phrase marker may be "glossed" in English as in (b).

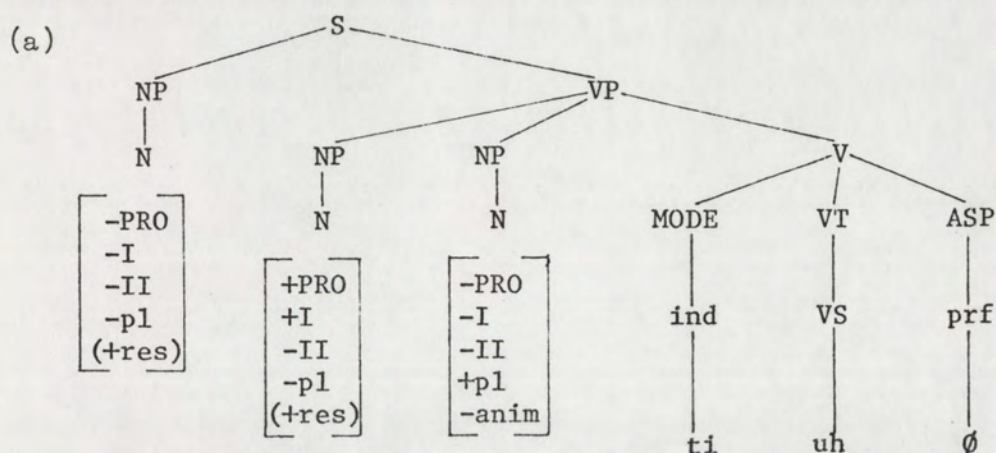


The complex conjunction rules needed to derive correct surface forms are not examined here.

4.11 Ditransitive Constructions

The surface order of nominal constituents in ditransitive constructions is always subject-indirect object-direct object. In deep structure the VP in ditransitive constructions contains two NP's, the first the indirect object nominal, the second the direct object nominal. As noted in Chapter III (section 8), the plural direct object in ditransitive constructions is always realized as nan (inanimate), while the third person plural indirect object in ditransitive clauses is always realized as ak (animate).

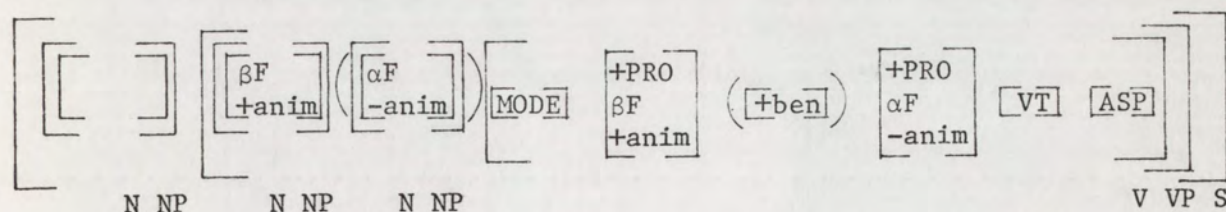
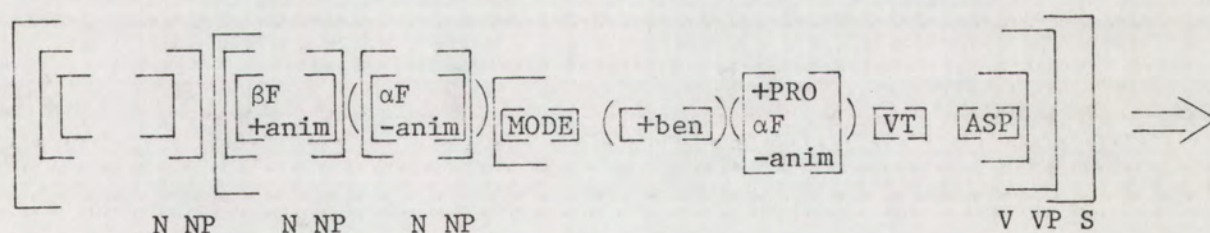
The deep structure of tikura.nu "he gave them to me" is represented in (a).



In order to derive correct surface forms, we must order transformations so that the rule of object agreement precedes a rule of indirect object agreement; subject agreement follows both of these.

Indirect object agreement is formulated below as T-INDIRECT OBJECT AGREEMENT. Note that this rule operates both on ditransitive structures to which T-OBJECT AGREEMENT has applied, and on intransitive structures. Indirect object agreement in intransitive structures follows T-BENEFACTIVE, however (see 4.12).

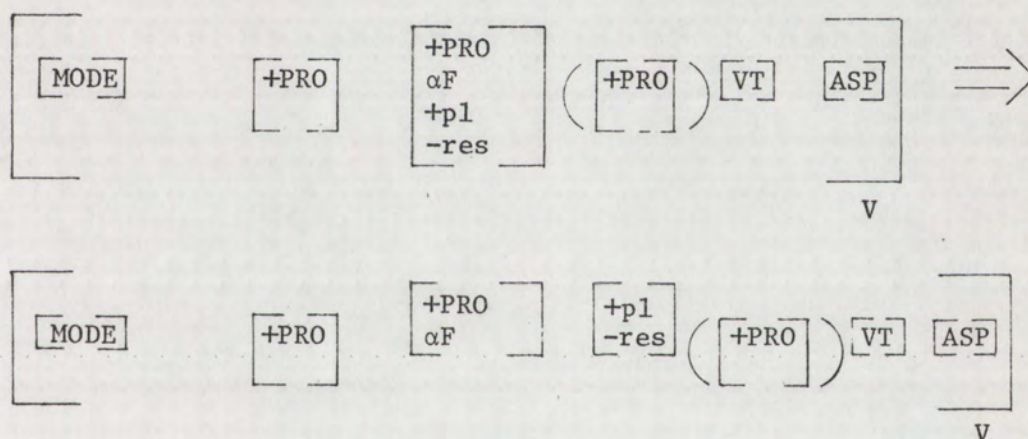
T-INDIRECT OBJECT AGREEMENT



Following T-SUBJECT AGREEMENT, number segmentalization rules operate on transformationally-created indirect object [+pl, -res] feature bundles, creating a separate bundle containing number features immediately following the bundles of person features. The operation of number segmentalization on [+pl, -res] feature bundles is repre-

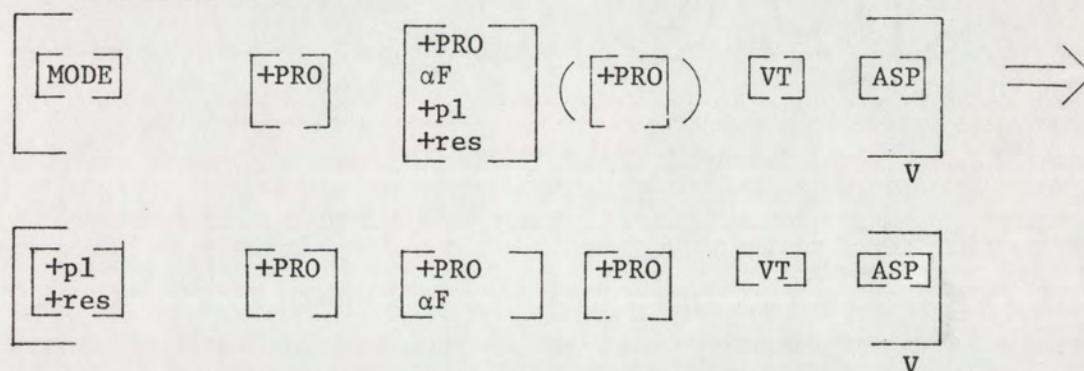
sented below with all irrelevant details omitted from a structural description.

T-NUMBER SEGMENTALIZATION OF [+PL, -RES] INDIRECT OBJECT BUNDLES



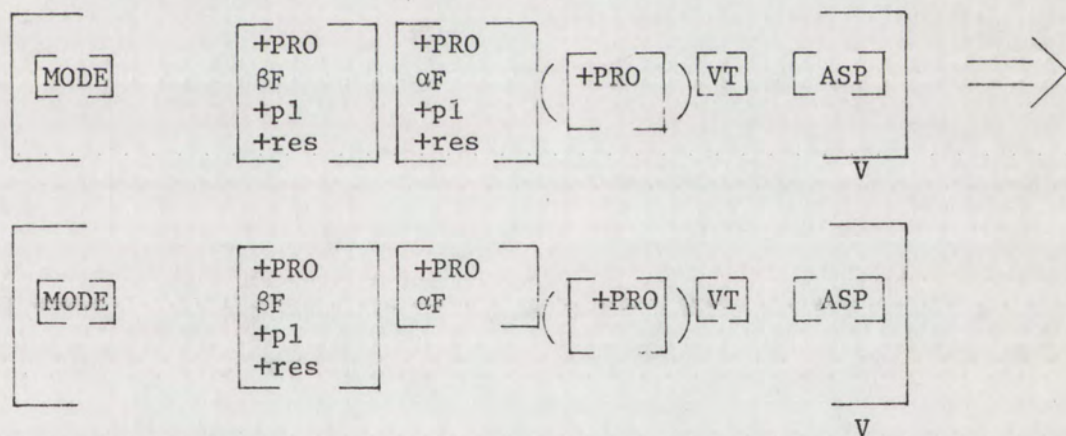
Number segmentalization in feature bundles marked [+pl, +res] (with the exception of the bundles marked [+I, +II] creates separate bundles containing number features in a position preceding the modal prefix. Number segmentalization of dual indirect object forms is not spelled out separately for each form, but is given as a general rule below.

T-NUMBER SEGMENTALIZATION OF [+PL, +RES] INDIRECT OBJECT BUNDLES



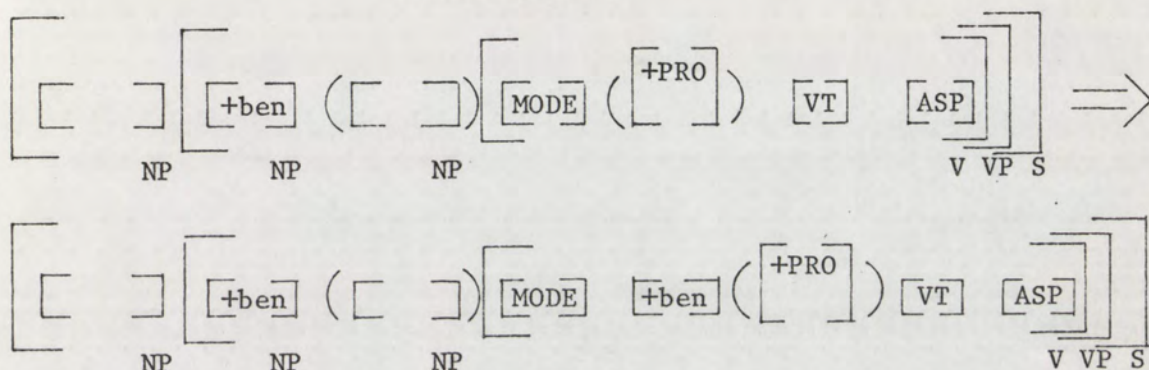
T-SI DELETION precedes number segmentalization in ditransitive clauses, however, as well as in transitive clauses. When two consecutive bundles marked [+pl, +res] occur in a phrase marker underlying a ditransitive construction, the right-most number features (those of the indirect object) are deleted before number segmentalization operates.

T-SI DELETION IN DITRANSITIVE CONSTRUCTIONS

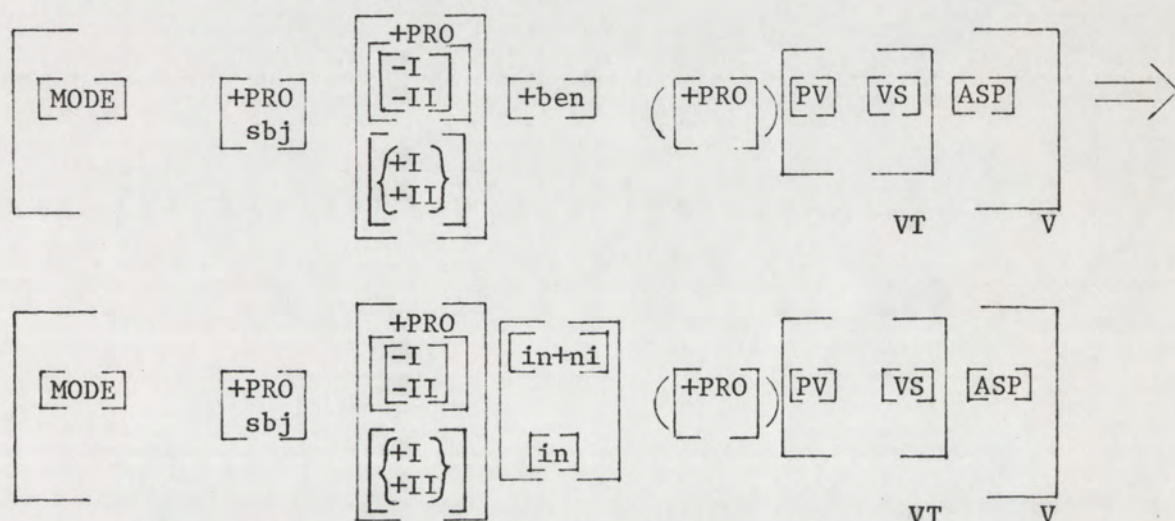


4.12 Benefactives

Benefactive nominals in transitive and intransitive constructions are marked with the feature [+ben] in deep structure. The person and number features of any nominal marked [+ben] are introduced into the verb by a transformational rule T-BENEFACTIVE. T-BENEFACTIVE follows T-OBJECT AGREEMENT in transitive clauses, and precedes T-INDIRECT OBJECT AGREEMENT in all clause types. T-BENEFACTIVE introduces the feature [+ben] into the verb in a position immediately to the left of the VT in intransitive clauses, and to the left of the pronominal object copy in ditransitive clauses.

T-BENEFACTIVE

The feature [+ben] is realized as ut if the verb theme is simple. If the verb theme contains the preverbs ut or un, however, [+ben] is realized as in if the person features of the benefactive nominal (introduced by T-INDIRECT OBJECT AGREEMENT, following T-BENEFACTIVE) are non-third, and as in+ni if the features of the benefactive nominal are third person. The rule of benefactive spelling below indicates how the category [+ben], once it is transformationally introduced into the verb, is realized under the conditions specified in the rule's structural description; elsewhere, it is ut.

Benefactive Spelling

FOOTNOTE

- 1 It is significant that languages of the Siouan and Iroquoian families also exhibit split-intransitive case-marking, since work has been done recently (cf. Chafe 1973) to support the notion that Caddoan, Siouan, and Iroquoian may be genetically related at great time depths.

Chapter V

5.1 Ergative-Accusative Syntactic Typology

On the basis of the description presented in Chapter III, and the analysis presented in Chapter IV, we now consider the question of syntactic "type" in Arikara. The claim has been made that the Caddoan languages are of "ergative" syntactic type. We claim instead that Arikara is a language of "accusative" type. The following discussion examines the notions of "ergativity" and "accusativity," and establishes the applicability of the latter to the Arikara case.

We must first comment on the notion of syntactic "type" as it is used here. The particular typology with which we are dealing is based on the syntactic treatment of noun phrases in three primary functions. All languages have transitive and intransitive clause types. Verbs in transitive clauses have at least two primary noun phrases associated with them, referred to by the relational or functional labels "transitive subject" and "transitive object." Verbs in intransitive clauses have associated with them only one primary noun phrase, to which the functional label "intransitive subject" is applied.

The distinction between "ergative" and "accusative" systems is based on the syntactic treatment and identification of noun phrase constituents in active declarative surface sentences. In ergative languages the object of the transitive and the subject of the intransitive verb are syntactically identified, while the subject of the

transitive verb is distinguished syntactically from the two other verbal functions. In languages with morphological case-marking systems, the unique treatment of the transitive subject is in terms of a case-marking formative termed "ergative case" for which (at least) the noun constituent of the subject noun phrase is inflected. The intransitive subject and transitive object receive no overt case-formative, and are said to be in the "nominative" case.

Accusative systems, by a minimal definition, are those in which transitive and intransitive subjects are syntactically identified, while the transitive object is distinguished syntactically from both of these. In languages with nominal case-marking, the unique treatment of the transitive object is in terms of a case-marking formative termed "accusative case" which is attached to at least the head noun of the object noun phrase, while transitive and intransitive subjects are in the unmarked, or "nominative," case.

Thus, in ergative systems there is one surface morphological form-class, intransitive subject-transitive object. This suggests that at the time of structure-dependent transformations, noun phrases in these two functions are in identical positions on a phrase marker. That is, there is no cause to distinguish intransitive subjects from transitive objects in terms of the transformational rules which apply to noun phrases in these two functions, indicating that the relations of the noun phrases in these functions to the verb are identical. In accusative systems, on the other hand, there is a single surface form-class, transitive subject-intransitive subject,

suggesting that noun phrases in these two functions are in identical positions on an underlying tree. In ergative systems the asymmetric function is that of the transitive subject, while in accusative systems the asymmetric function is that of the transitive object.

Clearly, not all grammatical systems of either type have morphological case-marking. The functional relationships of noun phrases to verbs are indicated at the surface in languages by different sorts of syntactic mechanisms, including agreement in the verb by pronominal cross-reference, affixation of pronominal formatives, and word order, as well as affixation of case-marking formatives to noun phrase constituents. The various syntactic mechanisms employed in languages express the same kind of information, namely the syntactic relations between noun phrases and verb, which we may term "case-relations." In this broad sense we may speak of "case-marking" in all grammatical systems, regardless of the actual surface manifestation. In Arikara, the surface morphology of nouns is quite simple; no case-marking formatives are attached to noun phrase constituents themselves. Instead, case-marking is in terms of pronominals obligatorily incorporated in the verb, as described in Chapters III and IV.

5.2 Markedness of Functions in Ergative and Accusative Systems

The difference between accusative and ergative systems is usually defined in the following terms: if the transitive subject is in case A, and the transitive object is in case B, a language

is accusative if the intransitive subject is in case A, and ergative if the intransitive subject is in case B. This definition ignores the case-marking of the transitive functions by simply assuming the opposition of transitive subject and transitive object, and focuses on the case-marking of the intransitive subject. Thus, the treatment of the intransitive subject is considered diagnostic of syntactic type. Actually, the treatment of the intransitive subject is entirely predictable in both ergative and accusative systems on the basis of assignment of markedness values to the two transitive functions.

In accusative systems such as Latin, the transitive object is morphologically marked and the transitive subject morphologically unmarked (e.g., Caesar-em, accusative; Caesar- \emptyset , nominative). In ergative systems such as Walbiri, markedness values of the two transitive functions are reversed: the transitive subject is morphologically marked, while the transitive object is unmarked (Walbiri, - η ku, ergative case; - \emptyset , nominative case). In both types of systems the intransitive subject is identified with the unmarked member of the pair of transitive functions. The intransitive subject is therefore always unmarked. Greenberg (1966:95) points this out in the formulation of his thirty-eighth universal: "Where there is a case system, the only case which ever has only zero allomorphs is the one which includes among its meanings that of the subject of the intransitive verb." Thus, while the identification of the intransitive subject with one or the other of the transitive func-

tions may be considered diagnostic of syntactic type, it is important to remember that the variation in case-marking which distinguishes accusative from ergative systems occurs within the transitive functions.

5.3 Split-Ergative Systems

In thoroughly ergative systems all nouns and pronouns are consistently case-marked on the basis of syntactic function. All transitive subjects are in the ergative case, and all intransitive subjects and transitive objects are in the nominative case. In addition to fully ergative systems, however, there is another kind of surface case-marking system, attested in the Dyirbal language of North Queensland and other Australian languages, as well as in Chinook of the Pacific Northwest, in which some nominal categories are case-marked in accordance with the principle described above for ergative systems, while others are case-marked according to the principle described for accusative systems. The distinction developed in section 5.2 between ergative and accusative systems in terms of differential assignment of markedness values to the two transitive functions is necessary to the understanding of case-marking in these so-called "split-ergative" systems.

In Dyirbal, first and second person pronouns are accusatively case-marked, while third person pronouns and all nouns are ergatively case-marked. Sentences (1)-(7) (taken from Dixon 1972) illustrate this system. When first and second person pronouns occur in the same sentence with nouns, the pronouns are still accusatively

case-marked, and the nouns ergatively case-marked.

- | | | |
|-----|-----------------------------------|---------------------------------|
| (1) | pada miyandanu | <u>I am laughing.</u> |
| | sbj-nom laugh-intrans | |
| (2) | pinda miyandanu | <u>Thou art laughing.</u> |
| | sbj-nom laugh-intrans | |
| (3) | pada ninuna buṛan | <u>I look at thee.</u> |
| | sbj-nom dir obj-acc look at-trans | |
| (4) | pinda nayguna buṛan | <u>Thou lookest at me.</u> |
| | sbj-nom dir obj-acc look at-trans | |
| (5) | pada bayi yara buṛan | <u>I am looking at the man.</u> |
| | sbj-nom dir obj-nom look at-trans | |
| (6) | nayguna bangul yarangu buṛan | <u>Man is looking at me.</u> |
| | dir obj-acc sbj-erg look at-trans | |
| (7) | bayi yara bangun dugumbiru buṛan | <u>Woman is looking at man.</u> |
| | dir obj-nom sbj-erg look at-trans | |

Silverstein provides an interpretation of this type of case-system in his unpublished paper "Feature Hierarchy and Ergativity," in which he demonstrates the direct role played by nominal and pronominal features in morpho-syntax.¹ In the following discussion, Silverstein's ideas are freely rendered and adapted.

In split-ergative systems a consistent relationship can be demonstrated between semantic classes on the one hand and surface morphological patterning on the other. Semantic classes are groupings or sets of nouns and pronouns which pattern alike with respect to some morphological or syntactic function. The classes

are established on the basis of features which represent surface-coded semantic distinctions. For pronouns, the set of features includes such values as [\pm participant], [\pm human], [\pm animate], and [\pm plural]. The feature [\pm participant] refers to the speech situation, and distinguishes first and second persons from all third person categories. In some systems the feature [\pm non-speaker], which differentiates first from second persons, also plays a role in the feature set.²

Many of the same features apply to nouns, with the exception of [\pm participant] and [\pm non-speaker] categories. Other features, including [\pm proper] and [\pm concrete], are relevant to nominal but not pronominal systems.

Clearly, the lexical feature specification of a noun phrase is not unrelated to its syntactic privileges of occurrence and the syntactic functions it can fill. Noun phrases that are positively specified for categories of [\pm participant], [\pm human], and [\pm animate] serve more frequently and more acceptably in the function of transitive subject than do noun phrases negatively specified for these features. (Clearly, too, noun phrases positively specified for these categories have real-world referents that are consistently more animate than those of noun phrases negatively specified for these values). Most transitive verbs have selectional restrictions which favor human and animate subjects and disfavor nonhuman, inanimate subjects. The features in languages indicative of naturalness as transitive subject presumably are composed of values as indicated

in (1)-(6). These features are probably largely universal, although particular systems may exhibit language-specific variation.

- (1) [±NP]
- (2) [±participant]
- (3) [±human]
- (4) [±animate]
- (5) [±proper]
- (6) [±concrete]

Positive specification of a noun for these features points towards naturalness or greater statistical acceptability as transitive subject, negative specification towards naturalness as object.

The features operative in a given grammatical system can only be identified if they receive some sort of surface-coding. The split in case-marking in Dyirbal which distinguishes first and second person categories from all others provides clear evidence for the postulation of the feature [±participant]. The split in Dyirbal recapitulates our independent notion of the semantic markedness of lexical features of noun phrases. The feature [-participant] distinguishes true personal indices, whose referents are concretely definable in terms of the speech situation from anaphoric forms not so definable. The feature [±participant] is shared by traditional "third person" categories as well as all nouns.

In Dyirbal, case-marking is not assigned on the basis of the syntactic function that a noun phrase fills. Rather, the assign-

ment of surface case-marking is mediated by lexical feature specifications of noun phrases. High-ranking categories (e.g., referentially well-defined [+participant] categories) are the most natural transitive subjects. By a principle of maximal differentiation, or polarity, high-ranking categories are defined as unnatural transitive objects within the grammatical system. Thus, high-ranking categories are case-marked in Dyirbal according to an accusative system, which distinguishes the transitive object as the specialized transitive category. That is, when a high-ranking category occurs in the unnatural object function, it is morphologically marked. On the other hand, low-ranking categories in Dyirbal (i.e., all [-participant] categories) are ergatively case-marked. In an ergative system, the transitive subject is the highly-marked, specialized transitive function. When a low-ranking category occurs as transitive subject, it receives a special mark of ergativity reflecting its unnaturalness in this function.

In summary, case-marking in Dyirbal expresses a hierarchy of semantic classes with respect to the transitive functions. High-ranking categories are accusatively case-marked, and low-ranking categories are ergatively case-marked. The split in case-marking indexes on the one hand the naturalness of high-ranking categories in the function of transitive subject, and on the other hand the unnaturalness of low-ranking categories in the transitive subject function. Thus, there is a consistent relationship between semantic classes and morphological case-marking, iconically expressed by the

potential in languages for an opposition between marked and unmarked categories.

It should be mentioned in passing that Dixon demonstrates at some length that the split operative in Dyirbal is morphological, and not syntactic. In syntactic patterning (under transformations), both nouns and pronouns conform to an ergative syntactic system. Although the details of the proof are not of immediate concern here, Dixon shows (1972:132) that the split represents a variation on a basically ergative system. Of concern here are the dynamics behind the split in case-marking. The nature of the split underscores the fact that accusative systems focus on and mark the patientive status of transitive objects, while ergative systems focus on and mark the agentive status of transitive subjects. The discovery of languages exhibiting the opposite split (i.e., ergative marking for high-ranking categories, accusative marking for low-ranking ones) would provide evidence against this generalization, but so far, no languages of this description have been documented. In an unpublished paper, Heath (1974) provides evidence that the split in case-marking in Murngin and other Australian languages may occur at lower levels in the nominal hierarchy, but the principle operative in the Murngin split is the same as that operative in Dyirbal.

5.4 Caddoan: Ergative or Accusative?

With this introduction, we turn to the arguments of Parks and Rood in support of the idea that South Band and Wichita are ergative systems.

Parks (1972) is primarily concerned with the description of surface phonology and morphology in South Band. He does, however, assert that South Band is of ergative syntactic type.

Parks makes a distinction in South Band between active and passive verbs:

Active verbs designate acts or processes...Active verbs are, in turn, divided into two subclasses, a transitive and intransitive. Members of both of these subclasses take noun subjects and are inflected with the same subject pronoun forms. Transitive verbs, however, differ from intransitive ones in that they take noun objects and are inflected for object pronouns...Passive verbs differ from active verbs by being objectively inflected; that is, what is interpretively a pronominal subject is inflectionally a pronominal object. In passive verbs, then, an action befalls or happens to a patient, or grammatical object (Parks 1972:141-142).

The passive verbs of Park's description are equivalent to the stative intransitives of Arikara. It is misleading and incorrect to refer to the South Band verbs as passive. In accusative languages, passivization refers to a transformational operation of topicization which changes the subject-object relations to the verb of the two primary noun phrases in a transitive construction. In passivization the node dominated by VP becomes the node dominated by S; thus, the direct object becomes a surface subject, or topic. In ergative languages, a parallel antipassive transformation inverts the primary noun phrases in a transitive clause, so that the node dominated by S becomes dominated by VP. In both passive and antipassive transformation it is the asymmetric, marked transitive function that changes. The South Band constructions which Parks terms "passive" have only one associated noun phrase at both surface and underlying levels, and thus do not illus-

trate a passive relationship in any technical sense.

Parks claims that South Band is ergative on the basis of the system of plural number marking.

In marking number for subjects and objects among active verbs, the subjects of intransitive verbs and the objects of transitive verbs take the same forms for indicating plurality; while the subjects of transitive verbs take a different set of forms for indicating plurality. Pawnee is therefore a language of the ergative type; and in addition to distinguishing between subjects and objects, we may also distinguish between agents and patients. Agents are the subjects of transitive verbs and are in the ergative case; whereas patients are both the subjects of intransitive verbs and the objects of transitive verbs, and are in the non-ergative case (Parks 1972:142).

Plural number marking provides rather weak evidence upon which to base a claim of ergative syntactic type in South Band. Actually, plural number marking in South Band is entirely parallel to plural number marking in Arikara. In both Arikara and South Band, number marking for third person plural intransitive subjects and transitive objects is not equivalent. Furthermore, South Band rak (Arikara nak) pluralizes first and second persons of active intransitive verbs, first and second person objects of transitive verbs, and all persons of stative intransitive verbs. With the exception of its use for all persons in stative intransitive constructions, rak signals that non-third forms are plural. As in Arikara, South Band nonsingular transitive subjects exhibit neutralization of dual and plural number, and dual number is marked. For this reason, rak is never employed to pluralize transitive subjects. The use of rak to pluralize intransitive subjects and transitive objects, and not transitive subjects, is the result of

neutralization of the dual-plural distinction in the nonsingular transitive subject. It does not provide evidence for the syntactic identification of intransitive subject and transitive object functions.

The application of the term "ergative" to South Band appears to be based on a misunderstanding of the term. As defined in section 5.2, ergative systems are those in which the transitive subject is the asymmetric, marked function of three primary verbal functions, while the intransitive subject and transitive object are syntactically identified. In South Band, as in Arikara, transitive subjects and objects are marked by distinct sets of pronouns. Most intransitive subjects are case-marked with the subject pronouns; these are the subjects of active intransitive verbs. In addition, a much smaller number of intransitive verbs require that their subjects be objectively case-marked; these are the subjects of stative intransitive verbs. Thus, in the Pawnee languages, it is case-marking within the intransitive paradigm that requires explanation. We cannot claim that the intransitive subject is invariably case-marked in the same way as the transitive object. Rather, we are dealing with two different kinds of intransitive verbs, active and stative.

Rood (1971) approaches the active-stative intransitive split in Wichita from a different point of view. He writes with the intent of establishing the primacy of Chafe-style "agent" and "patient" relationships over traditional notions of "subject"

and "object".

Transformationalists generally assume that the primary relationships are "subject" and "object". Fillmore (1968) and Chafe (1970) prefer several kinds of relationships ("agent", "patient", "instrumental", beneficiary", etc.) which appear in the surface structure as subjects and objects in English (Fillmore 1968) and as agents and patients in Onondaga (Chafe 1970). But no description that I have seen discusses the co-occurrence of both subject and patient in the same language at the same time (Rood 1971:100).

Although he uses the term "ergative" only once (Rood 1971:105), Rood appears to claim that Wichita exhibits a split system in which first and second person categories are syntactically treated in one way, and third person categories and nouns in another. He states that first and second person subject and object forms are fundamentally distinct, so that there is no problem in describing these categories in terms of the traditional subject-object dichotomy. The subject-object case-system "separates the objects of transitive verbs from the subjects of all verbs" (Rood 1971:100). Further on, however, he remarks that "the objective case of the pronouns is used to express the only nominal in construction with stative verbs" (Rood 1971:101). Because of this, a contrast between agent and patient case forms must be defined in order to separate "the subject of a transitive verb (the 'agent') from the other subjects ('patients')" (Rood 1971:101).

Rood states that third person forms exhibit no distinctive subject-object contrast. We are to understand by this that third person forms (with the exception of obviative forms) receive no concrete phonological representation. (Plural number of non-

singular third person forms is overtly marked, however.) He concludes, therefore, that the forms of the third person pronouns provide no indication of whether they follow a subject-object or an agent-patient case system. Other evidence, however, indicates that third person forms follow an agent-patient case-marking system.³

Rood summarizes the facts of Wichita by saying that "non-third persons show in the surface structure a subject-object case distinction, whereas third person forms use an agent-patient system" (Rood 1971:104). His analysis recognizes three different kinds of verbs: transitives, intransitives, and statives. An early rule of Wichita grammar specifies all verbs as having an associated patient noun. By a second rule, transitive verbs are specified as having an associated agent noun. Underlying agents are later realized as transitive subjects, while patient nouns associated with transitive and stative verbs are later specified as surface structure objects. The underlying patient nouns associated with intransitive verbs, however, are later marked as surface subjects.

Rood's major theoretical assertion is that "subject" and "object" are surface notions, and that underlying noun-verb relationships are better characterized by the more universal notions of "agent" and "patient". The surface realization of the universal semantic relationships may vary from language to language. In the Wichita case, some deep structure patients are realized as subjects and others as objects. Presumably, some underlying patient nouns

are marked as surface structure objects because Wichita has a syntactic rule requiring that underlying nouns associated with stative verbs be realized as surface objects. Another rule specifies that underlying patient nouns associated with intransitive verbs be marked as surface structure subjects.

Seemingly, the terms "agent" and "patient" are employed to indicate that certain types of verbs have associated nouns which stand in a particular semantic relationship to them. In this case, however, the notions of agent and patient are so broad as to be practically meaningless. It is difficult to claim that the single noun phrase associated with Wichita intransitive verbs is inherently patientive, especially since in surface structure these noun phrases are cross-referenced by the subject pronouns. The use of the term "patient" is the result of a particular theoretical stance which, in this case, obscures the facts of the language to be described. Indeed, the use of the term "subject" to refer to the single noun phrase associated with intransitives seems more neutral and less subject to question. Furthermore, no constraints are placed by the analysis on the transformational relationships between underlying agents and patients and surface structure subjects and objects. Unless constraints on these relationships can be motivated, any underlying categories may be transformed into any surface structure categories, and thus the search for relationships between semantic classes and surface morpho-syntactic patterning must be abandoned entirely. Methodologically, we are justified in

postulating underlying semantic categories only when formal evidence can be produced to motivate them.

5.5 Split-Intransitivity in Arikara

Arikara maintains a surface distinction between two types of intransitive clauses. The subjects of active intransitive verbs are explicitly agentive on the surface, and the subjects of stative intransitive verbs, explicitly patientive. Both types of surface constructions are derived from the same abstract underlying structure. The difference in surface case-marking in Arikara is motivated by the inherent verb feature [\pm stative]. The presence of the feature in deep structure triggers the transformation T-STATIVE formulated in Chapter IV (section 5).

Split-intransitive case-marking is widely distributed in North America. It is found in Iroquois (Boas 1909:438), Dakota (Boas and Deloria 1941:1), Haida (Swanton 1911:217), Hidatsa (Matthews 1965:62), and Choctaw (Heath 1974), as well as in Caddoan. Split-intransitive systems are distinguished from unitary intransitive systems like that of English, in which the intransitive subject is always represented by the subject pronouns.

The nature of the split in these languages deserves further study. Perhaps the relationship of underlying semantic classes to surface morphological patterning is governed by principles which operate to a greater or lesser extent, but in parallel ways, in the various languages. The following remarks are offered as a tentative formulation of the semantics behind the split in Arikara.

In Arikara, by far the majority of intransitive verbs are active. Active intransitive verbs designate actions and processes ("to run"), as well as conditions and state ("to know," "to be lying down," "to be good," "to want"). For the most part, stative intransitives designate conditions ("to be hungry"), but also processes ("to die"). There appears to be no a priori way of determining which intransitive verbs will be active, and which stative. A distinction in terms of verbs designating activities versus verbs designating lack of activity appears inadequate. However, the stative verbs in Arikara constitute a semantic class. All stative verbs designate states or processes of which the subject is not the active agent; rather, the subject of the stative verb is affected by the state or process denoted by the predicate. The participation of the subject in the verbal activity is non-intentional. Perhaps more important is the fact that all stative verbs in Arikara require animate subjects. In terms of a nominal feature hierarchy, all stative verbs in Arikara (e.g., "to be cold," "to be hungry," "to need," "to itch," "to be sick," "to be tired," "to ache or hurt," "to be afraid," and "to wake up") require high-ranking subjects positively specified for the feature [animate]. Just as the split in split-ergative systems indexes the unnaturalness of low-ranking categories in the agentive transitive subject function, the split in the Arikara intransitive system appears to index the unnaturalness of high-ranking categories in a non-agentive function (i.e., as subjects of stative verbs). High-ranking cate-

gories associated with stative verbs receive a special mark of their unnaturalness in the non-agentive function by objective surface case-marking.

It is premature to suggest that this principle or some variant of it is operative in all the split-intransitive systems named above. However, we appear to be dealing with a four-fold stable surface case-marking typology. On the one hand, we have ergative systems and split-ergative variants of them, and on the other hand, accusative systems and split-intransitive variants of these. Further study of split-intransitive systems must involve rigorous definition of lexical verb features within each language, and selectional restrictions of verbs, in order to establish a basis for cross-linguistic comparison.

FOOTNOTES

- 1 The role played by lexical features of noun phrases in Algonkian direct and inverse theme-marking is widely known. In The Algonkian languages, transitive verbs involving action by [+participant]first and second persons on third, and proximate on obviative third, receive no special mark, and are said to be "direct" themes. Transitive verbs involving action by [-participant]third persons on first and second, and obviative on proximate third, receive a special mark of the "abnormal" subject-object relationship, the "inverse" theme-sign -ekw.

Another interesting study of the role of feature hierarchies in syntax is Hale's paper (1974), A Note on Subject-Object Inversion in Navajo, in which it is shown that passivization in Navajo is governed by lexical features of subject-object pairs.

- 2 The feature [+non-speaker] is operative in Algonkian person-marking and privilege of occurrence rules. The naturalness-coding of subject-object pairs by theme-marking in Algonkian is supplemented by an ordering principle which selects second person markers in preference to first person markers in transitive sentences involving these two persons.
- 3 Part of Rood's evidence for this involves plural marking. The following passage is intended by Rood to establish as fact that third person forms follow an agent-patient case-marking system:

One set of allomorphs pluralizes patients; another is used for agents. In (5), forms (a-d) are patient plurals, marked by ak or r, depending on the verb. Forms (e) and (f) are agent plurals, marked by the hi- prefix.

(5)

(a) ti- ak-hisha	taʔakhish	<u>They went</u>
(b) ti- ak- i:ys	taʔakʔi:ys	<u>He saw them</u>
(c) ti- r-tacka as-s	tickackaʔass	<u>They burst</u> <u>open</u>
(d) ti-r-tacka as-k causative -s	ticackaʔasks	<u>He burst them</u> <u>open</u>
(e) hi-ti i:y-s	hitiʔi:ys	<u>They saw him</u>
(f) hi-ti-tacka as-k-s	hititackaʔasks	<u>They burst it</u> <u>open</u>

(Rood 1971:102)

From sentences (e) and (f) it appears that in Wichita, as in South Band and Arikara, the dual-plural opposition is neutralized in nonsingular transitive subjects. Rood's evidence does not satisfactorily establish the syntactic identification of transitive object and intransitive subject. In the examples cited, intransitive subjects appear to be marked for plurality in two different ways, one of which is indeed equivalent to number-marking for the third person transitive object.

Chapter VI

6.1 Introduction

This chapter examines possession in Arikara. There is a diverse array of constructions in Arikara which may be grouped together under the general term "possessive." Two type of independent possessive predications are described, followed by the description of clausal constructions of subject and object possession. Tentative analyses are suggested for the possessive constructions.

6.2 Predication of "Having"

In Arikara, an independent possessive construction expresses the notion of "having," or simple possession, without any implication of ownership. The construction may be used to express possession of inanimate objects, animate creatures (e.g., horses, dogs) as well as body parts and products.

The construction is formed with the verb theme nanah "to have." The possessor is indexed in the verb by the subject pronouns employed in active intransitive constructions (see 3.2); that is, there is no neutralization of dual-plural subject number. The possessed nominal is represented by a noun which may be either independent or incorporated in the verb.

Table 6.1 presents a paradigm of the construction of "having." The possessed body product "tears" is expressed by the obligatorily-incorporated noun ȳirits- "eye water," a compound of ȳiri.k "eye" and

Table 6.1

Independent Possessive Predication of "Having"

1 sg	/ta+t+χirts+nanah+∅/	tAhχiritstana	<u>I have tears</u>
2 sg	/ta+x+χirts+nanah+∅/	tAxχiritstana	<u>You (sg) have tears</u>
3 sg	/ti+∅+χirts+nanah+∅/	tiχiritstana	<u>He has tears</u>
1 excl du	/ʒi=ta+t+χirts+nanah+∅/	ʒitAhχiritstana	<u>We (excl du) have tears</u>
1 incl du	/ta+sin+χirts+nanah+∅/	tsihχiritstana	<u>We (incl du) have tears</u>
2 du	/ʒi=ta+x+χirts+nanah+∅/	ʒitAxχiritstana	<u>You (du) have tears</u>
3 du	/ʒi=ti+∅+χirts+nanah+∅/	ʒitiχiritstana	<u>They (du) have tears</u>
1 excl pl	/ta+t+nak+χirts+nanah+∅/	tAhmaχiritstana	<u>We (excl pl) have tears</u>
1 incl pl	/ta+ta+nak+χirts+nanah+∅/	tataraxχiritstana	<u>We (incl pl) have tears</u>
2 pl	/ta+x+nak+χirts+nanah+∅/	tAxtaχiritstana	<u>You (pl) have tears</u>
3 pl	/ti+in+χirts+nanah+∅/	tihχiritstana	<u>They (pl) have tears</u>

Table 6.2

Independent Possessive Predication of "Having"

<u>Mixed Paradigm</u>			
1 sg	/ta+t+ \emptyset +nanah+ \emptyset karu.x+u/	tahnana karu.xu?	<u>I have a bundle</u>
2 sg	/ta+x+ \emptyset +nanah+ \emptyset karu.x+u/	tAxtana karu.xu?	<u>You (sg) have a bundle</u>
3 sg	/ti+ \emptyset + \emptyset +nanah+ \emptyset karu.x+u/	tirana karu.xu?	<u>He has a bundle</u>
1 excl du	/ʒi=ta+t+ \emptyset +nanah karu.x+u/	ʒitahnana karu.xu?	<u>We (excl du) have a bundle</u>
1 incl du	/ta+sin+karu.x+nanah+ \emptyset /	tsihkaruxtana	<u>We (incl du) have a bundle</u>
2 du	/ʒi=ta+x+ \emptyset +nanah+ \emptyset karu.x+u/	ʒitAxtana karu.xu?	<u>You (du) have a bundle</u>
3 du	/ʒi=ti+ \emptyset + \emptyset +nanah+ \emptyset karu.x+u/	ʒitirana karu.xu?	<u>They (du) have a bundle</u>
1 excl pl	/ta+t+tnak+karu.x+nanah+ \emptyset /	tahnakaruxtana	<u>We (excl pl) have a bundle</u>
1 incl pl	/ta+ta+tnak+karu.x+nanah+ \emptyset /	tatarakaruxtana	<u>We (incl pl) have a bundle</u>
2 pl	/ta+x+tnak+karu.x+nanah+ \emptyset /	tAxtakaruxtana	<u>You (pl) have a bundle</u>
3 pl	/ti+in+karu.x+nanah+ \emptyset /	tihkaruxtana	<u>They (pl) have a bundle</u>

ts-, a bound form of "water," morphologically related to the independent noun stem tsto.h- "water."

The possession of an inanimate object is illustrated in the mixed paradigm in Table 6.2. In some forms the possessed nominal karu.x- "medicine bundle" is incorporated in the verb, while in others it is expressed as an independent noun outside the verb. The paradigm is presented with incorporated possessed nominal in some forms, and independent possessed nominal in others, to illustrate the fact that some nouns may or may not be incorporated, at the option of the speaker. The noun stem karu.x- "medicine bundle" is one of a number of nouns whose incorporation seems to be optional. Informants assert that there is no difference in meaning between the incorporated and unincorporated forms. The independent noun karu.xu is composed of the noun stem karu.x- and the absolutive noun suffix -u. Only the noun stem, and not the noun suffix, is incorporated.

6.3 Predication of Ownership

A second type of possessive construction expressed the notion of ownership, as in (1).

- (1) /ku=ta+t+in+aka+BE+Ø/ kutati·naka.?A I own a/the
 house.

poss-ind-sbj-poss-sbj-BE-prf
proc poss pre asp

The surface constituents of the ownership construction are as follows: the possessive proclitic ku,¹ a subject pronoun of the set found in transitive constructions (exhibiting neutralized dual-plural number) expressing the possessor (sbj poss), a possessive prefix

which agrees with the possessor (poss pfx), the incorporated noun stem aka- "house," and a lengthened and reduplicated final vowel of the noun stem representing the underlying formative BE.²

Table 6.3 presents a complete paradigm of the ownership construction. The possessed nominal is the incorporated noun stem aka- "house." One or more possessive prefixes immediately follow and agree with the subject pronominal possessor. The forms of the possessive prefixes for each person are as follows:

1 sg	<u>in</u>
2 sg	<u>in</u>
3 sg	<u>a</u>
1 excl du	<u>in</u>
1 incl du	<u>a+in</u>
2 du	<u>in</u>
3 du	<u>a</u>
1 excl pl	<u>in</u>
1 incl pl	<u>a+in</u>
2 pl	<u>in</u>
3 pl	<u>a+in</u>

The possessive prefix in occurs in all forms with the exception of all third person and first person inclusive forms.

When the ownership construction is used to express possession of nouns that do not incorporate, the vowel of the possessive prefix is lengthened and reduplicated, as in (2)-(4).

Table 6.3

Possessive Construction of Ownership

1 sg	/ku=ta+t+int+aka+BE+ \emptyset /	kutati·naka·ʔA	<u>I own a house</u>
2 sg	/ku=ta+x+int+aka+BE+ \emptyset /	kuʔAxi·naka·ʔA	<u>You (sg) own a house</u>
3 sg	/ku=ti+ \emptyset +a+aka+BE+ \emptyset /	kuta·ka·ʔA	<u>He owns a house</u>
1 excl du	/ku=ʔi=ta+t+int+aka+BE+ \emptyset /	kuʔitati·naka·ʔA	<u>We (excl du) own a house</u>
1 incl du	/ku=ta+sin+ta+int+aka+BE+ \emptyset /	kutse·naka·ʔA	<u>We (incl du) own a house</u>
2 du	/ku=ʔi=ta+x+int+aka+BE+ \emptyset /	kusitAxi·naka·ʔA	<u>You (du) own a house</u>
3 du	/ku=ʔi=ti+ \emptyset +a+aka+BE+ \emptyset /	kuʔita·ka·ʔA	<u>They (du) own a house</u>
1 excl pl	/ku=ʔi=ta+t+int+aka+BE+ \emptyset /	kuʔitati·naka·ʔA	<u>We (excl pl) own a house</u>
1 incl pl	/ku=ʔi=ta+sin+ta+int+aka+BE+ \emptyset /	kuʔitse·naka·ʔA	<u>We (incl pl) own a house</u>
2 pl	/ku=ʔi=ta+x+int+aka+BE+ \emptyset /	kuʔitAxi·naka·ʔA	<u>You (pl) own a house</u>
3 pl	/ku=ʔi=ti+ \emptyset +a+int+aka+BE+ \emptyset /	kuʔite·naka·ʔA	<u>They (pl) own a house</u>

- | | |
|---|--|
| (2) /ku=ta+t+in+BE+Ø kataro·piiš/ | [kutati.ʔ I kataro·
piʔiš] ³ |
| poss-ind-sbj-poss-BE-prf
proc poss pre asp | <u>I own a/the car.</u> |
| (3) /ku=ta+x+in+BE+Ø kataro·piiš/ | [kutAxi.ʔI kataro·
piʔiš] |
| poss-ind-sbj-poss-BE-prf
proc poss pre asp | <u>You(sg) own a/the car.</u> |
| (4) /ku=ti+Ø+a+BE+Ø kataro·piiš/ | [kuta.ʔ A kataro·
piʔiš] |
| poss-ind-sbj-poss-BE-prf
proc poss pre asp | <u>He owns a/the car.</u> |

6.4 Subject Possession

This section discusses two types of constructions in Arikara in which the possessed nominal is the subject of the sentence. The two are referred to as constructions of subject possession. In the first type, possession is expressed by means of the independent possessive pronouns. In the second type, possession is expressed by means of one or more possessive prefixes within the verb.

The complete paradigm of the independent possessive pronouns is presented in Table 6.4. Constituents of the independent pronouns are: the possessive proclitic ku; the subordinating prefix na; the set of subject pronouns (expressing the possessor) employed in transitive constructions (exhibiting neutralization of dual-plural number); one or more possessive prefixes which agree with the possessor; the subordinate form u of the verb "to be." The possessive prefixes within the independent possessive pronouns are the same for each person as the possessive prefixes found in the ownership construction (i.e.,

Table 6.4

Independent Possessive Pronouns

1 sg	/ku=na+t+t+intu/	kunati.nu	<u>Mine</u>
2 sg	/ku=na+x+t+intu/	kunAxi.nu	<u>Yours (sg)</u>
3 sg	/ku=na+Ø+t+u/	kuna.u	<u>His</u>
1 excl du	/ku=ʃi=na+t+t+intu/	kuʃinati.nu	<u>Ours (excl du)</u>
1 incl du	/ku=na+sin+a+intu/	kunse.nu	<u>Ours (incl du)</u>
2 du	/ku=ʃi=na+x+t+intu/	kuʃinAxi.nu	<u>Yours (du)</u>
3 du	/ku=ʃi=na+x+t+intu/	kuʃina.u	<u>Theirs (du)</u>
1 excl pl	/ku=ʃi=na+t+t+intu/	kuʃinati.nu	<u>Ours (excl pl)</u>
1 incl pl	/ku=ʃi=na+sin+a+intu/	kuʃinse.nu	<u>Ours (incl pl)</u>
2 pl	/ku=ʃi=na+x+t+intu/	kuʃinAxi.nu	<u>Yours (pl)</u>
3 pl	/ku=ʃi=na+Ø+t+intu/	kuʃine.nu	<u>Theirs (pl)</u>

first person singular, in; second person singular, in; third person singular, a; and so forth).

The independent possessive pronouns preferentially precede the possessed nominal, as in (1)-(3).

- (1) [kunati·nu xa·wa·ruxti? tičistA] My horse is lame.
 1 sg horse 3 sg
 ind poss pro lame
- (2) [kunxi·nu xa·wa·ruxti? tičistA] Your(sg) horse is lame.
 2 sg horse 3 sg
 ind poss pro lame
- (3) [kuna·u xa·wa·ruxti? tičistA] His horse is lame.
 3 sg horse 3 sg
 ind poss pro lame

The independent possessive pronouns are also used where the possessed head of the noun phrase has been deleted, as in (4)-(6).

- (4) [kunati·nu tičistA] Mine is lame.
 1 sg 3 sg
 ind poss pro lame
- (5) [kunxi·nu tičistA] Yours(sg) is lame.
 2 sg 3 sg
 ind poss pro lame
- (6) [kuna·u tičistA] His is lame.
 3 sg 3 sg
 ind poss pro lame

Of importance syntactically is the fact that the independent possessive pronouns are used to express possession of nouns such as xa·wa·ruxti? "horse," and xa·ŧ "dog" that function as subjects of active intransitive or transitive sentences. In terms of the nominal

feature hierarchy, these nouns are high-ranking [+animate] categories. They are also nouns which may never incorporate.

On the other hand, possession of nouns such as huna·nuʔ "land" and aka- "house" functioning as subjects of active intransitive sentences⁴ must be expressed by the second type of subject possession involving one or more possessive prefixes with the verb. Nouns like "land" and "house" are low-ranking [-animate] categories. They are among the nouns that regularly incorporate in both transitive and intransitive constructions.

For convenience, this second type of subject possession is referred to as prefixal subject possession. Table 6.5 presents a complete paradigm of prefixal subject possession. The possessor is expressed by the set of subject pronouns employed in active intransitive constructions. The possessive prefixes within the verb agree with the possessor, as follows:

1 sg	<u>in+ni+un</u>
2 sg	<u>in+ni+un</u>
3 sg	<u>a+in+un</u>
1 excl du	<u>in+ni+un</u>
1 incl du	<u>a+in+un</u>
2 du	<u>in+ni+un</u>
3 du	<u>a+in+un</u>
1 excl pl	<u>in+ni+un</u>
1 incl pl	<u>in+un</u>
2 pl	<u>in+ni+un</u>

Table 6.5

Prefixal Subject Possession

1 sg	/ta+t+int+ni+unt+aka+ʔi.ʔA	tatni.nakAʔi.sawata.ʔA	<u>My house is white</u>
2 sg	/ta+x+int+ni+unt+aka+ʔi.ʔA	tAxini.nakAʔi.ʔA	<u>Your (sg) house is white</u>
3 sg	/ti+0+ta+int+ni+unt+aka+ʔi.ʔA	tanu.nakAʔi.ʔA	<u>His house is white</u>
1 excl du	/ʔi=ta+t+int+ni+unt+aka+ʔi.ʔA	ʔitatni.nakAʔi.ʔA	<u>Our (excl du) house is white</u>
1 incl du	/ta+s+int+ni+unt+aka+ʔi.ʔA	tse.nununakAʔi.ʔA	<u>Our (incl du) house is white</u>
2 du	/ʔi=ta+x+int+ni+unt+aka+ʔi.ʔA	ʔitAxini.nakAʔi.ʔA	<u>Your (du) house is white</u>
3 du	/ʔi=ti+0+ta+int+ni+unt+aka+ʔi.ʔA	ʔitanu.nakAʔi.ʔA	<u>Their (du) house is white</u>
1 excl pl	/ta+t+int+ni+unt+nak+aka+ʔi.ʔA	tatni.na.kakAʔi.ʔA	<u>Our (excl pl) house is white</u>

Table 6.5 (cont)

1 incl pl	/ta+ta+int+unt+nak+aka+ʔi.ʔawata.+BE+Ø/	tatanu.na.kakAʔi.ʔawata.ʔA	<u>Our (incl pl) house is white</u>
2 pl	/ta+x+int+ni+unt+nak+aka+ʔi.ʔawata.n+BE+Ø/	tAxini.na.kakAʔi.ʔawata.ʔA	<u>Your (pl) house is white</u>
3 pl	/ti+Ø+a+int+unt+unt+nak+aka+ʔi.ʔawata.n+BE+Ø/	te.nunu.nakAʔi.ʔawata.ʔA	<u>Their (pl) house is white</u>

3 pl

a+in+un+un

The series of prefixes in+ni+un is employed with all persons of the possessor except all third person and first person inclusive forms. The final prefix in the series for all persons is un. In Table 6.5, the possessed incorporated noun stem aka- "house" is the subject of the predicate či.šawata.n+BE "to be white."

Table 6.6 presents a paradigm of prefixal subject possession where the predicate is the complex verb theme un...he.r "to be good". When the predicate is a complex verb theme containing the preverbs ut or un, the final prefix un of the possessive prefixes within the verb does not occur in addition to the preverb; rather, the preverb takes its place. The possessed nominal in Table 6.6 is the incorporated noun stem huna.n- "land."

Both Tables 6.5 and 6.6 illustrate possession of an incorporated subject nominal. The prefixal construction is also employed to express possession of a low-ranking inanimate subject nominal that does not incorporate, as in (7)-(9).

- (7) /ta+t+in+ni+un+čipiri.n+BE+Ø kataro.piiš/
 ind-sbj-poss-vs-BE-prf sbj My car is new.
 asp
 [tatnihčipiri.ʔI kataro.piʔiš]
- (8) /ta+x+in+ni+un+čipiri.n+BE+Ø kataro.piiš/
 ind-sbj-poss-vs-BE-prf sbj Your(sg) car is new.
 asp
 [txinihčipiri.ʔI kataropiʔiš]
- (9) /John ti+Ø+a+in+un+čipiri.n+BE+Ø kataro.piiš/
 sub-ind-sbj-poss-vs-BE-prf sbj John's car is new.
 asp

Table 6.6

Prefixal Subject Possession

1 sg	/tatt+int+ni+un+thuna.n+he.r+Ø/	tatnihnunane	<u>My land is good</u>
2 sg	/tat+x+int+ni+un+thuna.n+he.r+Ø/	tAxinihnunane	<u>Your (sg) land is good</u>
3 sg	/ti+Ø+at+int+un+thuna.n+he.r+Ø/	tanuhnunane	<u>His land is good</u>
1 excl du	/ʒi=tatt+int+ni+un+thuna.n+he.r+Ø/	ʒitatihnunane	<u>Our (excl du) land is good</u>
1 incl du	/tatsint+at+int+un+thuna.n+he.r+Ø/	tse.nunuhnunane	<u>Our (incl du) land is good</u>
2 du	/ʒi=tat+x+int+ni+un+thuna.n+he.r+Ø/	ʒitAxinihnunane	<u>Your (du) land is good</u>
3 du	/ʒi=ti+Ø+at+int+un+thuna.n+he.r+Ø/	ʒitanuhnunane	<u>Their (du) land is good</u>
1 excl pl	/tatt+int+ni+un+tnak+thuna.n+he.r+Ø/	tatni.na.kunane	<u>Our (excl pl) land is good</u>
1 incl pl	/tattat+int+un+tnak+thuna.n+he.r+Ø/	tatanu.na.kunane	<u>Our (incl pl) land is good</u>
2 pl	/tat+x+int+ni+un+tnak+thuna.n+he.r+Ø/	tAxini.na.kunane	<u>Your (pl) land is good</u>
3 pl	/ti+Ø+at+int+un+thuna.n+he.r+Ø/	te.nunuhnunane	<u>Their (pl) land is good</u>

[John tanuhčipiri.ʔI kataro.piʔiš]

Sentence (10) illustrates prefixal subject possession where the possessed head of the noun phrase has been deleted.

(10) /ta+ti+in+ni+un+čipiri.n+BE+Ø/ [tatnihčipiri.ʔI]

ind-sbj-poss-vs-BE-prf
poss pre asp

Mine is new.

The understood, deleted head of (10) may only be a low-ranking noun such as "car" or "house." Sentence (11) would be used where the deleted head is an animate, high-ranking noun such as xa.č "dog."

(11) [kunati.nu tičistA] Mine is lame.

1 sg 3 sg
ind poss pro lame

6.5 Object Possession

Possession of a nominal functioning as the object of a transitive sentence is referred to as object possession. The expression of object possession requires that the prefix un be introduced into the verb immediately preceding the verb stem, or preceding the possessed object noun stem if the object is incorporated, and that the possessor of the object be expressed by the object pronouns.

Table 6.7 presents a paradigm illustrating object possession. The possessed nominal in the paradigm is the incorporated noun stem huna.n- "land," functioning as the object of the predicate tau.t "to steal." The prefix un (obj pfx) immediately precedes the incorporated object. The possessor of the object (obj poss) is expressed by the

Table 6.7

Object Possession

1 sg-2 sg	/ta+t+at+un+huna.n+tau.t+Ø/	tatohnunahtaʔut	<u>I stole your (sg) land</u>
1 sg-3 sg	/ta+t+Ø+un+huna.n+tau.t+Ø/	tatuhnunahtaʔut	<u>I stole his land</u>
1 sg-2 du	/ʔi=ta+t+at+un+huna.n+tau.t+Ø/	ʔitatohnunahtaʔut	<u>I stole your (du) land</u>
1 sg-2 pl	/ta+t+at+un+nak+huna.n+tau.t+Ø/	tato.nakunahtaʔut	<u>I stole your (pl) land</u>
1 sg-3 du	/ʔi=ta+t+Ø+un+huna.n+tau.t+Ø/	ʔitatuhnunahtaʔut	<u>I stole their (du) land</u>
1 sg-3 pl	/ta+t+Ø+un+ak+huna.n+tau.t+Ø/	tatu.nakunahtaʔut	<u>I stole their (pl) land</u>
2 sg-1 sg	/ta+x+ku+un+huna.n+tau.t+Ø/	tAxkuhnunahtaʔut	<u>You (sg) stole my land</u>
2 sg-3 sg	/ta+x+Ø+un+huna.n+tau.t+Ø/	tAxuhnunahtaʔut	<u>You (sg) stole his land</u>
2 sg-3 du	/ʔi=ta+x+Ø+un+huna.n+tau.t+Ø/	ʔitAxuhnunahtaʔut	<u>You (sg) stole their (du) land</u>
2 sg-3 pl	/ta+x+Ø+un+ak+huna.n+tau.t+Ø/	tAxu.nakuhnunahtaʔut	<u>You (sg) stole their (du) land</u>
3 sg-1 sg	/ti+Ø+ku+un+huna.n+tau.t+Ø/	tikuhnunahtaʔut	<u>He stole my land</u>
3 sg-2 sg	/ti+Ø+a+un+huna.n+tau.t+Ø/	tohnunahtaʔut	<u>He stole your (sg) land</u>
3 sg-3 sg	/ti+Ø+Ø+un+huna.n+tau.t+Ø/	tuhnunahtaʔut	<u>He stole his land</u>

Table 6.7 (cont)

3 sg-1 excl du	/ʒi=ti+Ø+ku+un+huna.n+tau.t+Ø/	ʒitikuɲunahtaʔut	<u>He stole our (excl du) land</u>
3 sg-1 incl du	/ti+Ø+saku+un+huna.n+tau.t+Ø/	tsakuɲunahtaʔut	<u>He stole our (incl du) land</u>
3 sg-1 incl pl	/ti+Ø+ataku+un+nak+huna.n+tau.t+Ø/	tataku.na.kunahtaʔut	<u>He stole our (incl pl) land</u>
3 sg-2 du	/ʒi=ti+Ø+a+un+huna.n+tau.t+Ø/	ʒitohɲunahtaʔut	<u>He stole your (du) land</u>
3 sg-3 du	/ʒi=ti+Ø+Ø+un+huna.n+tau.t+Ø/	ʒituhɲunahtaʔut	<u>He stole their (du) land</u>
3 sg-3 pl	/ti+Ø+Ø+un+ak+huna.n+tau.t+Ø/	tu.nakunahtaʔut	<u>He stole their (pl) land</u>
3 pl-1 sg	/ʒi=ti+Ø+ku+un+huna.n+tau.t+Ø/	ʒitikuɲunahtaʔut	<u>They (pl) stole my land</u>
3 pl-1 excl pl	/ʒi=ti+Ø+ku+un+nak+huna.n+tau.t+Ø/	ʒitiku.nakunahtaʔut	<u>They stole our (excl pl) land</u>
3 pl-1 incl pl	/ʒi=ti+Ø+ataku+un+nak+huna.n+tau.t+Ø/	ʒitataku.na.kunahtaʔut	<u>They (pl) stole our (excl pl) land</u>
3 pl-2 sg	/ʒi=ti+Ø+a+un+huna.n+tau.t+Ø/	ʒitohɲunahtaʔut	<u>They (pl) stole your (sg) land</u>
3 pl-2 pl	/ʒi=ti+Ø+a+un+nak+huna.n+tau.t+Ø/	ʒito.na.kunahtaʔut	<u>They (pl) stole your (pl) land</u>
3 pl-3 pl	/ʒi=ti+Ø+Ø+un+ak+huna.n+tau.t+Ø/	ʒiti.nakunahtaʔut	<u>They (pl) stole their (pl) land</u>

- (2) /na+t+a.n+wi/ [na.tahwi] my tooth

sub-sbj-bp-sub
pfx suf

The fact that certain body parts naturally occur in pairs is indicated by the prefixation of the dual marker ši, as in (3). The plurality of body parts is expressed by the distributive suffix wa., as in (4).

- (3) /š=na+t+wi.n+ta+wi/ [šinatwihtawi] my (two) arms

du-sub-sbj-bp-loc-sub
pfx suf

- (4) /na+t+a.n+wa.+wi/ [na.tahwa.wi] my teeth

sub-sbj-bp-dis-sub
pfx suf

However, wa may also be used to express non-singularity of body parts that naturally occur in pairs, as in (5).

- (5) /na+t+iš+ta+wi.wi/ [na.tštawa.wi] my hands

sub-sbj-bp-loc-dis-sub

Table 6.8 presents a paradigm of the possessed body part stem iš- "hand."

The body part affixes are employed only to create independent possessed body part nouns. Body parts functioning as subjects or objects of transitive and intransitive clauses always incorporate. Possession of incorporated body parts is not expressed by means of the affixes described above. Instead, sentential possession of body parts and products is simply expressed by pronouns case-marked in accordance with the surface syntactic function of the body part.

Table 6.8

Possession of Body Parts

1 sg	/nat+tiʃ+tatwi/	na.tʃtawi	<u>My hand</u>
1 sg	/nat+tiʃ+tatwa.+twi/	na.tʃtawa.wi	<u>My hands</u>
2 sg	/natx+tiʃ+tatwi/	na.xʃtawi	<u>Your (sg) hand</u>
2 sg	/natx+tiʃ+tatwa.+twi/	na.xʃtawa.wi	<u>Your (sg) hands</u>
3 sg	/na+Ø+tiʃ+tatwi/	neʃtawi	<u>His hand</u>
3 sg	/na+Ø+tiʃ+tatwa.+twi/	neʃtawa.wi	<u>His hands</u>
1 excl du	/ʃi=nat+tiʃ+tatwa.+twi/	ʃina.tʃtawa.wi	<u>Our (excl du) hands</u>
1 incl du	/tatsin+tiʃ+tatwa.+twi/	tsi.nʃtawa.wi	<u>Our (incl du) hands</u>
2 du	/ʃi=natx+tiʃ+tatwa.+twi/	ʃina.xʃtawa.wi	<u>Your (du) hands</u>
3 du	/ʃi=nat+Ø+tiʃ+tatwa.+twi/	ʃineʃtawa.wi	<u>Their (du) hands</u>
1 excl pl	/tatt+tnak+tiʃ+tatwa.+twi/	tAhna.kʃtawa.wi	<u>Our (excl pl) hands</u>
1 incl pl	/nattatnak+tiʃ+tatwa.+twi/	nataara.kʃtawa.wi	<u>Our (incl pl) hands</u>
2 pl	/tatx+tnak+tiʃ+tatwa.+twi/	tAxta.kʃtawa.wi	<u>Your (pl) hands</u>
3 pl	/ni+in+tiʃ+tatwa.+twi/	ni.nʃtawa.wi	<u>Their (pl) hands</u>

That is, possession of body parts functioning as subjects of active intransitive clauses is expressed by subject pronouns which immediately precede the incorporated body part stem in surface structure. Possession of body parts functioning as transitive objects and subjects of stative intransitive verbs is expressed by the object pronouns.⁵ Sentences (6) and (7) illustrate the possessed body part stem pax- "head" and wi.n- "arm" functioning as the subjects of the stative intransitive verb theme naa.n "to ache." The possessor is expressed simply by the first person object pronoun ku.

- (6) /ti+ku+pax+naa.n+hu/ [tikupAxta?a.nu?] My head aches.

ind-poss-bp-vs-imp
asp

- (7) /ti+ku+wi.n+naa.+hu/ [tikuwi.na?a.nu?] My arm hurts.

ind-poss-bp-vs-imp
asp

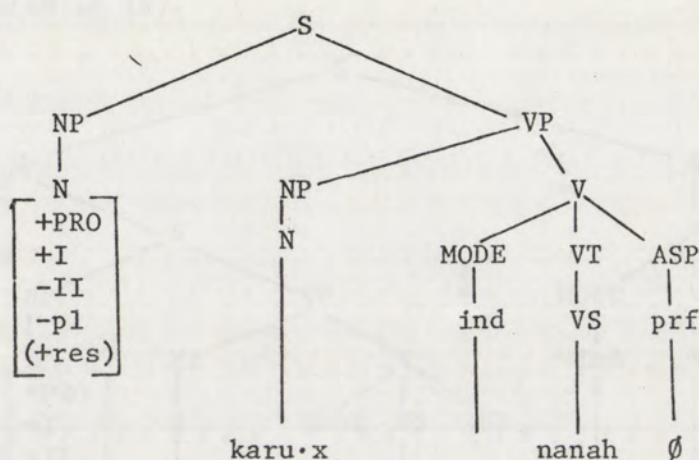
6.7 Analysis of the Predication of "Having"

The following analyses of the possessive constructions are extremely tentative. Because the syntax of possessives involves many peculiarities, we simply propose deep structures for the possessive constructions and suggest the sorts of transformational operations required to derive surface forms, rather than attempt to formalize the rules involved. The difficulties posed by possessive constructions are not peculiar to Arikara. The syntax of possessives in a number of languages indicates that there are little-understood linguistic relationships holding among such notions as existence, possession, and identity.

In languages all over the world sentences involving "have" and "be" have distinctive and sometimes perplexing grammatical properties. Among the notions commonly expressed by these predicates are existence, identity, possession, and location, as well as notions of tense and aspect. However, the way these and related notions are manifested varies widely from language to language; a given notion may be expressed with "have" in one language; with "be" in another, and with no verb at all in another (Langacker 1972:183).

In Arikara, the predication of "having" clearly involves two noun phrases in a possessed-possessor relationship. As noted in section 6.2, the nonsingular pronominal subject expressing the possessor is marked with the set of subjective pronouns employed in active intransitive constructions, not by the neutralized dual-plural forms employed in transitive constructions. Nevertheless, the construction otherwise exhibits all the properties of an ordinary transitive construction. In contradistinction to the other types of possessive constructions, it has an overtly-represented predicate nanah "have." We therefore tentatively suggest that the construction of "having" is derived from an underlying transitive structure. The possessor is derived from an underlying subject noun phrase, and the possessed from an underlying object noun phrase. Underlying the sentence tAhnana karu·xu? "I have a bundle" is a structure of the form represented in (a).

(a)



Rules of object and then subject agreement must apply to this structure. In this case, object agreement results in a zero pronominal copy in the verb. After agreement rules have applied, a movement rule is required to move the unincorporated noun object to the right of the verb. The movement rule required in cases where incorporation does not occur is formulated in Chapter VII.

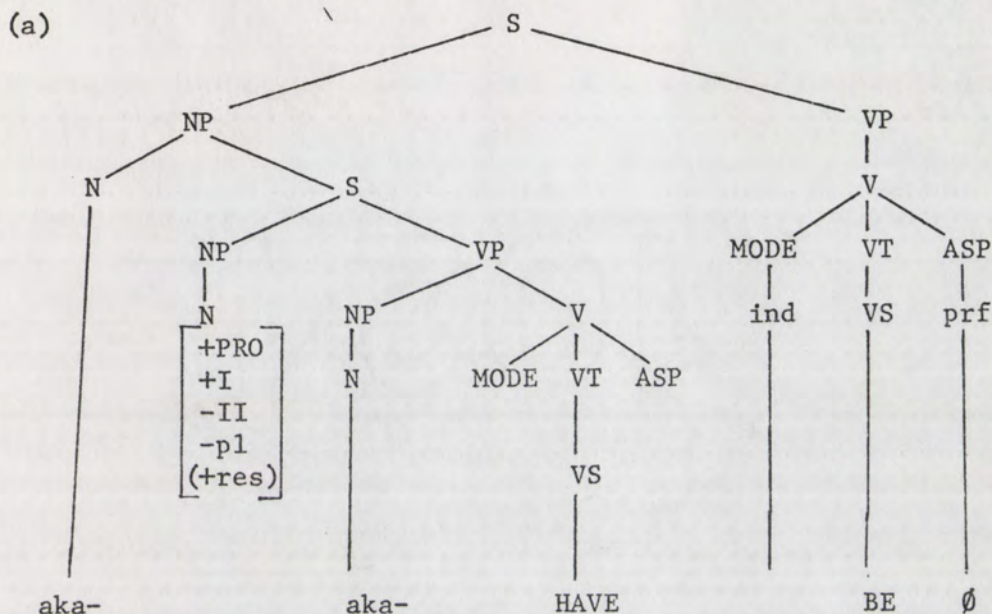
6.8 Analysis of the Predication of Ownership

The presence of the abstract underlying formative BE in ownership constructions suggests that the possessed nominal is the underlying sentence subject. What requires explanation is the presence in surface structures of the subject pronouns representing the possessor, and the agreement of the modal prefix with the possessor.

We propose that ownership constructions derive from underlying intransitive structures in which the possessed nominal is the head of the subject noun phrase of a main sentence. The possessor is derived from a transitive sentence structure embedded in the noun phrase of which the possessed noun is the head.

The structure underlying kutati·naka·?A "I own the house"

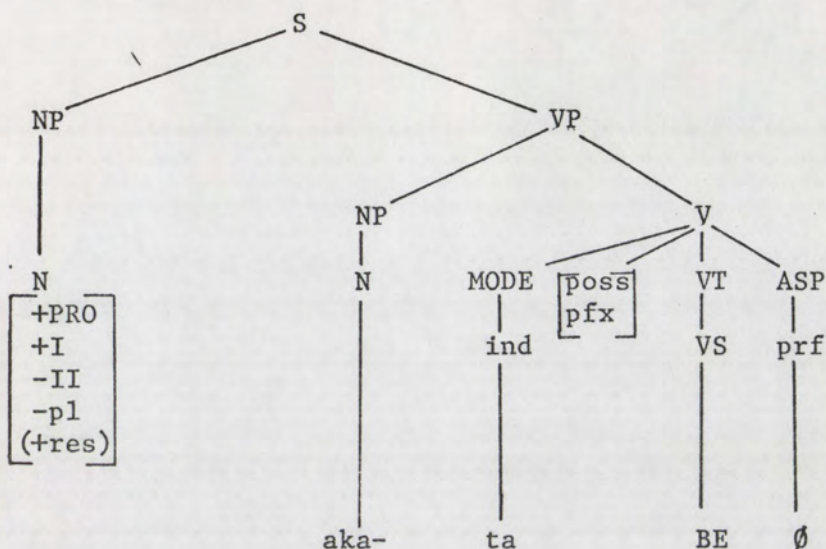
is represented in (a).



The verb of the embedded sentence is represented as HAVE; this verb receives overt phonological representation only when it is the predicate of a non-subordinate sentence, as in 6.7.

In the derivation of surface forms, the animate possessor of the embedded sentence is topicalized⁶ and is thereby promoted to subject position within the main sentence. The underlying subject of the main sentence aka- is moved in intermediate structure under the domination of VP, and thereby becomes a surface object. The shared NP of the embedded sentence is deleted, as in all relative clause constructions (see 7.6), as is the verb HAVE of the embedded sentence. The syntactic rules which deletes the verb of the embedded sentence inserts a feature [poss pfx] (possessive prefix) within the verb of the main sentence. These transformational operations result in the structure (b).

(b)



Thus, we suggest that the surface ownership construction is the result of a topicization transformation that alters the underlying configuration of noun-verb relationships by topicizing the possessor and moving the underlying subject into object position.

Object agreement in this sentence results in the incorporation of aka- "house" (see Chapter VII). In other cases, object agreement results in a zero pronominal copy in the verb. Following object agreement, subject agreement produces a zero pronominal copy in the verb. A feature [poss proc] realized by the possessive proclitic ku is created leftmost in the verb. The feature [poss pfx] agrees with the possessor, and is replaced by affixes as follows:

1 sg	<div style="border-left: 1px solid black; border-right: 1px solid black; padding: 5px; display: inline-block;"> +I -II -pl (+res) </div>	<u>in</u>
2 sg	<div style="border-left: 1px solid black; border-right: 1px solid black; padding: 5px; display: inline-block;"> -I +II -pl (+res) </div>	<u>in</u>

3 sg	$\begin{bmatrix} -I \\ -II \\ -pl \\ (+res) \end{bmatrix}$	<u>a</u>
1 excl du	$\begin{bmatrix} +I \\ -II \\ +pl \\ (+res) \end{bmatrix}$	<u>in</u>
1 incl du	$\begin{bmatrix} +I \\ +II \\ +pl \\ +res \end{bmatrix}$	<u>in</u>
2 du	$\begin{bmatrix} -I \\ +II \\ +pl \\ +res \end{bmatrix}$	<u>in</u>
3 du	$\begin{bmatrix} -I \\ -II \\ +pl \\ +res \end{bmatrix}$	<u>a</u>
1 excl pl	$\begin{bmatrix} +I \\ -II \\ +pl \\ -res \end{bmatrix}$	<u>in</u>
1 incl pl	$\begin{bmatrix} +I \\ +II \\ +pl \\ -res \end{bmatrix}$	<u>a+in</u>
2 pl	$\begin{bmatrix} -I \\ +II \\ +pl \\ -res \end{bmatrix}$	<u>in</u>
3 pl	$\begin{bmatrix} -I \\ -II \\ +pl \\ -res \end{bmatrix}$	<u>a+in</u>

6.9 Analysis of Subject Possession

The two types of subject possession described in 6.4 differ from each other formally. In the first type, possession is expressed

by means of the independent possessive pronouns. The modal prefix of the surface sentence agrees with the possessed subject nominal, and not the possessor. The possessed subject is never incorporated.

In the second, prefixal construction, possession is expressed in surface structures by prefixes within the verb which agree with the pronominal subject possessor. The modal prefix of the surface sentence agrees with the possessor, and not the possessed underlying subject of the sentence. The subject nominal is often incorporated.

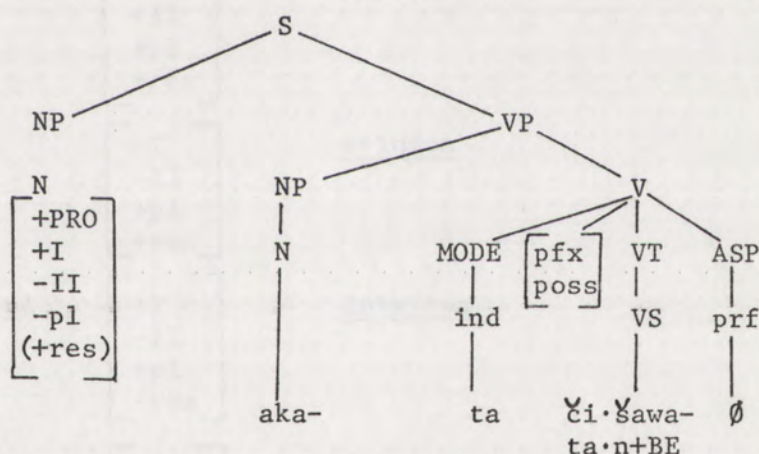
The nouns with which the two constructions are used differ in their lexical feature composition. Subjects whose possession is expressed by means of the independent possessive pronouns are those whose lexical feature composition points towards their naturalness as transitive subjects. They are nouns which never incorporate. Subjects possessed by the prefixal construction are those whose feature composition points to their unnaturalness as transitive subjects. Many of these nouns may incorporate.

These observations suggest that the two types of subject possession constitute a syntactic "minimal pair." The expression of subject possession with the independent possessive pronouns or by means of the prefixal construction is determined by the lexical feature composition of the possessed noun. In view of this, we propose that both types of constructions are derived from a common abstract source. The transformational operations required to derive the two types of surface constructions differ slightly.

Possessive phrases of both types are embedded as sentences

If the possessed nominal is a low-ranking [-animate] category, the possessor within the embedded sentence is topicized, and the underlying subject of the main sentence is moved under the domination of VP, as in the ownership construction. As in all relative constructions, the shared NP is deleted. The underlying possessive verb HAVE is deleted, leaving its trace only in the creation of the feature [pfx poss] (prefixal possession) within the verb. These operations result in the (abbreviated) structure (c).

(c)



Object agreement in (c) results in the incorporation of aka- in the verb. Subject agreement results in the copying of the features of the possessor in the verb. Modal prefix agreement is determined by the features of the topicized possessor. [Pfx poss] is spelled out as the appropriate set of possessive prefixes which agree with the possessor, as follows:

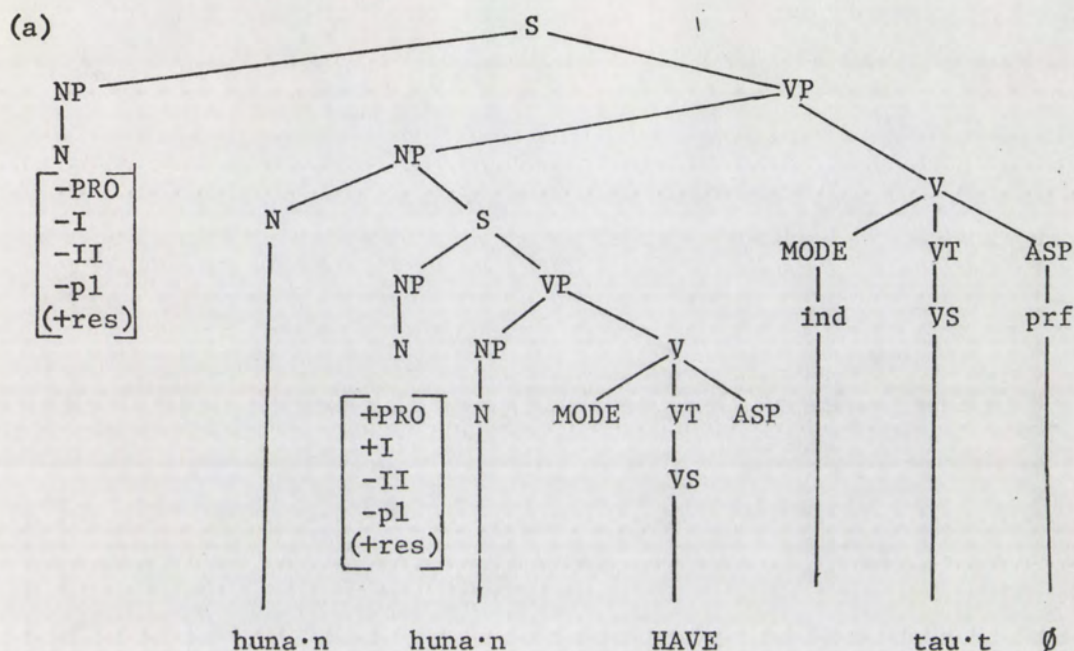
1 sg	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> +I -II -pl (+res) </div>	<u>in+ni+un</u>
2 sg	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> -I +II -pl (+res) </div>	<u>in+ni+un</u>

3 sg	$\begin{bmatrix} -I \\ -II \\ -pl \\ (+res) \end{bmatrix}$	<u>a+in+un</u>
1 excl du	$\begin{bmatrix} +I \\ -II \\ +pl \\ +res \end{bmatrix}$	<u>in+ni+un</u>
1 incl du	$\begin{bmatrix} +I \\ +II \\ +pl \\ +res \end{bmatrix}$	<u>a+in+un</u>
2 du	$\begin{bmatrix} -I \\ +II \\ +pl \\ +res \end{bmatrix}$	<u>in+ni+un</u>
3 du	$\begin{bmatrix} -I \\ -II \\ +pl \\ +res \end{bmatrix}$	<u>a+in+un</u>
1 excl pl	$\begin{bmatrix} +I \\ -II \\ +pl \\ -res \end{bmatrix}$	<u>in+ni+un</u>
1 incl pl	$\begin{bmatrix} +I \\ +II \\ +pl \\ -res \end{bmatrix}$	<u>in+un</u>
2 pl	$\begin{bmatrix} -I \\ +II \\ +pl \\ -res \end{bmatrix}$	<u>in+ni+un</u>
3 pl	$\begin{bmatrix} -I \\ -II \\ +pl \\ -res \end{bmatrix}$	<u>a+in+un+un</u>

6.10 Analysis of Object Possession

Object possessors are similarly derived from sentence modifiers of head nouns functioning as objects of transitive clauses.

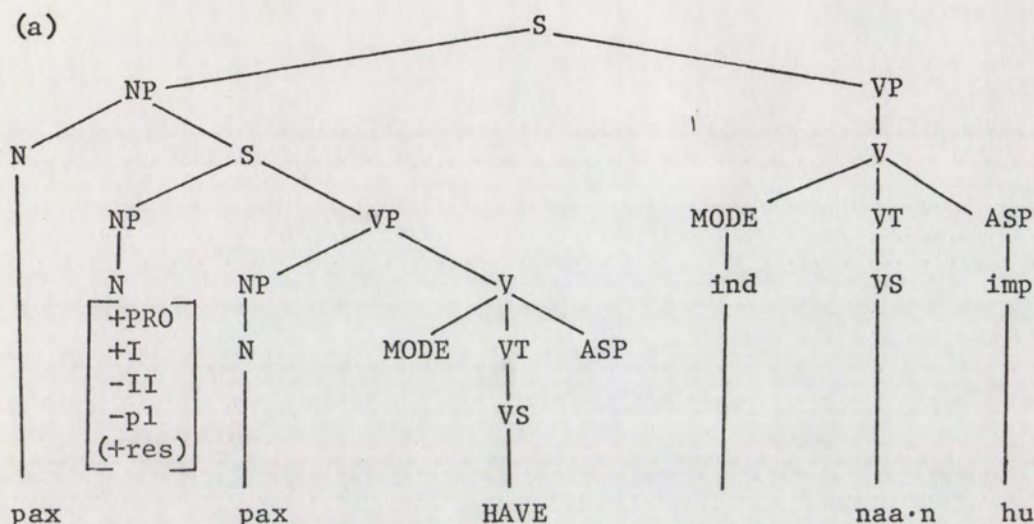
Underlying tikuhnunahta?ut "He stole my land" is the structure (a).



In this instance, object agreement produces a nominal copy of the possessed nominal in the verb. The features of the possessor are copied in the verb. Deletion of the verb HAVE of the subordinate sentence is accompanied by the creation of the feature [obj pfx] in the verb of the main sentence. [Obj pfx] is invariably realized as the prefix un.

6.11 Analysis of Body Part Possession

Sentential possessors of body part nouns functioning as intransitive subjects are similarly derived from sentences embedded within noun phrases. Underlying tikupAxta?a.nu? "My head aches" is the structure (a).



T-STATIVE moves the subject noun phrase and all it dominates into the verb phrase. Object incorporation invariably results in the incorporation of the body part stem, and possessive formation is accomplished by copying of the features of the possessor in the verb.

The transformational rules required to account for subject and object possession in 6.9-6.11 are fairly complex. Instead of precisely formulating the rules involved, the analysis informally suggests how possessive constructions are derived. We have proposed that subordinated clausal subject and object possessive constructions arise from sentence modifiers. The operation of transformational rules in the two constructions of subject possession is determined by feature values of the possessed nominal. Possession of nouns functioning as direct objects is expressed by a single surface construction.

6.12 Kinship Terminology

Ten primary consanguineal kin terms always occur in possessed form. They are marked for inalienable possession by a special set of affixes, and exhibit the most complex morphology of any subclass of nouns.

Table 6.9 presents the ten inalienably possessed kin terms in underlying and phonetic form. The forms are glossed with the traditional kin-labels of English, "uncle," "brother," and so forth. These glosses, however, are simply supplied for convenience, and do not reflect the usage of the linguistic forms (for a discussion of "Crow" terminological systems, *cf.*, Lounsbury 1956).

Person of the possessor is expressed by prefixation in first and second person forms of the kin terms, and by prefixation and suffixation in third person forms. The kin terms involve two-place relations equivalent to possessor and possessed, and thus may be said to share the syntactic properties of transitive verbs. The affixes marking person of the possessor are as follows:

1 sg	<u>ati-</u>	"my"
2 sg	<u>a-</u>	"your"
3 sg	<u>i...ni</u>	"his"

The stem forms of the ten kin terms are the following:

<u>pat</u>	"grandfather"
<u>ka</u>	"grandmother"
<u>ax</u>	"father"
<u>xax</u>	"mother"

<u>wat</u>	"niece/nephew"
<u>wasiš</u>	"uncle"
<u>na·n</u>	"sibling" (same sex as speaker)
<u>nas</u>	"brother" (female speaker)
<u>tat</u>	"sister" (male speaker)
<u>nač</u>	"grandchild"

The kin term "mother" has the morphologically conditioned alternate stem forms na- (first person possessor) and šax- (third person possessor); the term "uncle" has the third person alternate form wa·ni·š.

FOOTNOTES

- 1 The proclitic ku is found in a number of other constructions. Since it occurs in the independent pronouns as well as in the ownership construction, it is referred to here as a "possessive proclitic."
- 2 The formative BE conditions the lengthening and reduplication of the stem-final vowel of descriptive stems (see 2.7).
- 3 The final n of the possessive prefix in is lost by the regular phonological rule which deletes the resonants r and n in word-final position.
- 4 These nouns cannot function as subjects of stative intransitives (see Chapter V).
- 5 In Chapter V it was stated that stative verbs require animate subjects. Possessed body part stems (whose possessor is, of course, animate) constitute the only exception to this statement.
- 6 Topicization is distinguished here from topicalization. Topicization transformations are those that alter underlying grammatical relationships, whereas topicalization involves alteration of focus and other surface relationships, without necessarily changing grammatical configurations.
- 7 Kin terms are, of course, [+animate]. The possession of ten primary consanguineal kin types is discussed in 6.12. Possession of other, non-primary kin types is more complex, and is not discussed in 6.12.

Chapter VII

7.1 Introduction

Noun incorporation is one of the most salient typological features of Arikara. Preceding chapters show that information derived from external noun constituents is introduced transformationally into the Arikara verb, resulting in complex surface verbal forms. In noun incorporation, the structure of the verb is further augmented by the introduction into the verb of a noun whose lexical properties are preserved. This chapter describes various aspects of noun incorporation, and analyzes the evidence that noun incorporation provides for the understanding of noun-verb relationships in the language.

7.2 Studies of Noun Incorporation in North American Languages

Although it is a topic of great theoretical interest, noun incorporation in American Indian languages has received relatively little attention. The papers of Kroeber (1909) and Sapir (1913) constitute the major theoretical discussions of noun incorporation in North America.

In "Noun Incorporation in American Languages," Kroeber (1909:569) asserts that noun incorporation, which he defines as "the combination into one word of the noun object and the verb functioning as the predicate of a sentence," has mistakenly been alleged to exist in North America. Kroeber is sceptical of the existence of noun incorporation for two reasons. First, he says that "the principal cause contributing to the belief in objective

noun incorporation has been the existence in many American languages of pronominal incorporation" (Kroeber 1909:570). He observes that the term pronominal incorporation has been frequently misunderstood. He points out that in many American languages, pronominal incorporation is not the introduction into the verb of independent pronouns, but is rather an inflectional process, which he describes as

combination with the verb of pronominal elements which are essentially syntactical and unimportant elements, and therefore not words. Whatever their first origin...these elements...are shown in a number of languages...to be certainly not abbreviations of originally independent pronominal words, equivalent to English I and him. In the present state of these languages these elements are the older, and the independent words superficially resembling to Indo-European minds our I and him are clearly derivations from these elements by process of composition. Such being the case, the combination of pronominal elements with the verb in these and similarly constituted languages is not really a case of incorporation. As long as pronominal incorporation is regarded as incorporation of an actual pronoun into the verb, it seems natural that the noun also should at times be incorporated, for the Indo-European pronoun is syntactically the equivalent of a noun, as its name and grammar-school definition teach. It is precisely this point of view that is responsible for the still-existing belief in noun incorporation. The erroneous conception of pronominal incorporation caused the belief that nominal incorporation must exist, and this supposition found food in the little-understood compositional processes common in American languages as well as in certain prevalent vague notions of polysynthesis as the fundamentally characteristic feature of these languages (Kroeber 1909:570-571).

Kroeber's second argument against the existence of noun incorporation is "the fact that no one has affirmed incorporation of the subject. And yet, there is no more reason why the object should be fused with the verb than the subject, and if objective incorporation is found in many languages, subjective incorporation should at least occur sometimes" (Kroeber 1909:573). Kroeber asserts, however, that the very notion of incorporation of both subject and object is

implausible, since if this were to occur,

all elements of the sentence, or at least of the clause, would be contained in the verb, and the syntactical word would be not only in scheme but in fact identical with the sentence...A word enlarged until it comprised a sentence would be a sentence and as such would break up into separate words (Kroeber 1909:574).

The common use of body part affixes in American languages forces Kroeber to conclude that body part terms occupy a distinctive place among noun classes, and that "even the direct objective use of independent noun stems denoting parts of the body in single-word verb complexes seems dependent on the unique character of these stems" (Kroeber 1909:572).

Refuting Kroeber's negative claims, Sapir (1913) provides evidence of noun incorporation in several language families, including Penutian (Tsimshian and Takelma), Hokan (Yana), Uto-Aztecan (Nahuatl and Southern Paiute), Iroquoian, and Caddoan (Pawnee).

Sapir (1913:250) agrees with Kroeber that "so-called pronominal incorporation and noun incorporation stand in no necessary relation to each other." He (1913:251-252) further restricts the definition of noun incorporation by observing that

verbal affixes that refer to noun, in other words, convey a substantival idea, are not instances of noun incorporation if they are etymologically unrelated to the independent nouns or noun stems with which they seem logically connected...As long as they are lexically distinct from noun stems proper, they must be looked upon as grammatical elements pure and simple, however concrete their signification may seem. They are logically related to independent nouns of the same or allied meaning as are tense affixes to independent adverbs of time.

Sapir also excludes as evidence of noun incorporation the formation of denominative verbs from noun stems by means of various

derivative affixes of verbal, generally transitive, meaning.

Thus, from Paiute qani- "house" are formed qanintcu "to build a house," and qanixYai "to have a house," from Yana hauyauba "deer fat" is formed hauyauba ?iniqui?a "to contain nothing but deer fat." In these derivative verbs the nouns "house" and "deer fat" cannot be considered as incorporated, for the verbal elements -ntcu, -xYai and ?iniqui?a are not verb-stems but verb-forming affixes, morphologically comparable to -ize in verbs of the type materialize, pauperize (Sapir 1913:254).

Sapir finds objectionable Kroeber's definition of noun incorporation as "the compounding into one word of the noun object and the verb functioning as the predicate of a sentence." Kroeber's definition makes two separate requirements:

...a noun must combine with a verb predicate into a word-unit, and the noun so combined must function as the object of the verb. The first requirement is morphologic in character, the second purely syntactic; in other words, the first calls for a certain type of word formation, while the second demands that a particular logical relation subsist between the two independent elements that enter into word formation. Noun incorporation is primarily either a morphologic or a syntactic process; the attempt to put it under two rubrics at the same time leads to a certain amount of artificiality of treatment (Sapir 1913:255).

Sapir (1913:257) proposes instead to define noun incorporation as "the process of compounding a noun stem with a verb...no matter what the function of the noun logically is." There is no need to regard body part terms as a separate or peculiar class of nouns; body part terms may be accepted as evidence of noun incorporation, provided that the incorporated stem is morphologically related to the independent noun.

The main point to be determined in any particular case as far as noun incorporation is concerned, is not whether instrumental, local, objective, or other substantival affixes do or do not refer to parts of the body, but whether or not they are identical with or closely related to independent nouns (Sapir 1913:253).

Although all the languages that Sapir cites may be classed as "noun incorporating," Sapir (1913:258) cautions that they "often differ materially among themselves, each traveling more or less its separate way." Languages may differ with respect to the position of the incorporated stem, the degree of coalescence of the noun stem with the verb, and the types of syntactic relationships that are expressed by noun incorporation.

In Iroquois, Pawnee, Shoshonean, and Takelma, the incorporated noun precedes the verb stem; in Yana and Tsimshian, it follows the verb. This distinction is not of fundamental importance, except that it is significant to note with what group of affixes the incorporated noun is affiliated; this may provide evidence of the essential nature of the incorporative process.

When in Paiute, for instance, the incorporated noun is prefixed to the verb stem, and it is further noted that practically all relational elements, including the pronominal affixes, are suffixes, it becomes fairly evident that the incorporated noun is, from its morphological treatment, not so much of syntactic as of compositional value: "to rabbit-kill" is not morphologically comparable to "to kill-him," but rather to "to quickly-kill" (Sapir 1913:259-260).

In Takelma, the incorporated noun and verb stem exhibit a relatively loose coalescence, while in Iroquois and Pawnee, the noun is tightly integrated into the verb.

The most common relationships that subsist between noun and verb stem include instrumental, locative, and objective ones. Refuting Kroeber's claim that incorporation of the subject is not found, Sapir illustrates subjective incorporation in Nahuatl, Southern Paiute, Yana, Takelma, Pawnee, and Iroquois.

Another way in which noun-incorporating languages may differ is in the tendency of some to use the incorporative process to express permanent or general activity, while others freely employ incorporation to express particular or single acts.

Thus "I meat-eat" may be understood to mean either "I eat meat, I am a meat-eater" or "I eat the meat" (at one point in time); in its former sense it may be termed a verb of general application, in its latter sense one of particular application...This distinction between a general and particular type of verb is of significance in so far as in some American languages verbs with incorporated noun always belong or tend to belong to the former type, single activities being expressed by the syntactic method that we are familiar with in Indo-Germanic or by one more nearly resembling it. On the whole, general verbs with incorporated object are more often met with, or, at any rate, met with in more languages, than those of the particular class, and this fact is in striking and significant analogy with the prevailingly general character of compound nouns (Sapir 1913:259).

In this regard, Sapir (1913:281) comments that Pawnee and Iroquois, which share some formal characteristics of noun incorporation, also have in common the fact that "verbs with incorporated nouns are freely used to refer to particular activities."

Recent documentation of noun incorporation in individual languages includes Haas' (1941) paper on Muskogean, Wolfart's (1968) study of noun incorporation in Plains Cree, Postal's (1962) dissertation on Mohawk, and Rood's (1971) comments on noun incorporation in Wichita. The task of comparing noun incorporation and its significance in the various languages has not yet been undertaken. In some language families, notably Iroquoian, Caddoan, and Algonkian, noun incorporation is highly productive. In Muskogean, noun incorporation is reportedly a relic process only, no longer productive in any of the languages within the family (Haas 1941).

7.3 Noun Incorporation in Arikara

In Arikara, both the noun subject of the intransitive verb (active and stative) and the noun object of the transitive verb may incorporate. Discussion of incorporation in this chapter is limited to active intransitive and transitive verbs. Incorporation of the "intransitive subject" in the following sections refers to incorporation of the noun subject of active intransitive verbs.

The incorporated intransitive subject or transitive object immediately precedes the verb stem in surface forms. Where the verb theme is complex, the incorporated noun stem is inserted between the preverb and verb stem. In this respect noun incorporation differs from pronominal agreement in the verb, for pronominal copies are inserted directly into the verb preceding both preverb and verb stem.

Independent lexical nouns consist of a noun stem and absolutive noun suffix. The absolutive noun suffixes are -u (huna·n+u "land"), -č (tsas+č "meat"), and ∅ (sapat+∅ "woman"). In incorporation, only the noun stem appears in surface forms within the verb.

In Arikara, the morphological relatedness between independent and incorporated noun stems is quite clear. Most incorporated stems are identical to their independent counterparts. A few nouns, however, have phonologically reduced stem forms that occur in noun compounds as well as in incorporation. The independent stem form "water" is tsto·h-, while the form of the stem that appears in noun compounds and in noun incorporation is ts-. Similarly, the independent stem

aka.n- "house" has the compound stem form aka-.²

Incorporation of the active intransitive subject is illustrated in (1) and (2); (3) and (4) illustrate incorporation of the transitive object.

- (1) /ti+un+huna.n+he.r+ Ø/ [tuhnunane] The land is good.
ind-pv-sbj-vs-prf asp
- (2) /ti+aka+či.šawata.n+BE+Ø/ [te.kAči.šawata.ʔA]
ind-sbj-vs-prf asp The house is white.
- (3) /ta+t+aka+karauk+hu+u.ku/ [ta.takAkaro.khu.kuʔ]
ind-sbj-dir-vs-imp-hab
obj asp I build houses.
- (4) /ta+t+huna.n+na.pih+Ø/ [tatuna.na.pi] I bought land.
ind-sbj-dir-vs-prf
obj asp

The incorporated intransitive subject and transitive object occupy the same surface structural position between preverb and verb stem. Nouns in these functions, however, occupy distinct positions on trees in deep structure. In surface sentences with independent nouns in these functions the intransitive subject ordinarily precedes the verb and the transitive object follows it, as in (5) and (6).

- (5) [wi.ta tiwa.waʔa] The man is eating.
sbj 3 sg
eat
- (6) [wi.naxč tsakuhtaʔut xa.č] The boy stole our
sbj dir obj (incl du) dog.

While the intransitive subject and transitive object may incorporate, nouns in the transitive subject function never do so.

The following section shows that potential for incorporation is not inherent in the syntactic function that a noun fulfills in any given sentence, but rather is mediated by lexical feature specification of nouns.

7.4 The Role of Nominal Features in Noun Incorporation

Not all nouns functioning as intransitive subjects or transitive objects may incorporate. In Arikara, some intransitive subjects incorporate while others do not, and the same is true of transitive objects. Thus, rules of noun incorporation may not be phrased in terms of syntactic function alone.

It is conceivable that noun incorporation might be due to some characteristic of particular verbs. That is, there may be verbs that permit incorporation and others that do not. That incorporation is not determined by the verb is demonstrated by the fact that both incorporated and independent intransitive subjects and transitive objects are found with the same verb. The noun object is incorporated in (1) below, but not (2); the complex verb theme ut...te "to like" is the predicate of both (1) and (2). Similarly, the noun object is incorporated in (3) but not (4), while the predicate in both sentences is the simple theme tau.t "to steal."

- | | | |
|-----|-------------------------------|--------------------------|
| (1) | /ta+t+in+ni+ut+aka+te+Ø/ | [tatnitakAte?] |
| | ind-sbj-pfx-pv-dir-vs-prf | <u>I like the house.</u> |
| (2) | /ta+t+Ø+in+ni+ut+te+Ø wi.ta/ | [tatniste? wi.ta] |
| | ind-sbj-dir-pfx-pv-vs-prf dir | <u>I like the man.</u> |
| | obj asp obj | |

- (3) /ti+Ø+saku+un+huna·n+tau·t+Ø/ [tsakuhnunahtaʔut]
ind-sbj-obj-obj-dir-vs-prf He stole our (incl
poss pre obj asp du) land.
- (4) /ti+Ø+Ø+saku+un+tau·t+Ø xa·č/ [tsakuhtaʔut xa·č]
ind-sbj-dir-obj-obj-vs-prf dir He stole our (incl
obj poss pre asp obj du) dog.

Clearly, it is neither the verb itself that determines incorporation, nor is incorporation inherent in syntactic function, since all lexical nouns in (1)-(4) are grammatical objects, but only "house" and "land" may incorporate.

Although potential for incorporation may not be phrased in terms of syntactic function only, it is nevertheless true that there is a direct relationship between the nature of nouns (as defined by lexical feature specification) and their syntactic distribution. In Arikara, incorporating nouns are natural non-agents. That is, in terms of a hierarchy of pronominal and nominal features, incorporating nouns are characterized by negative specification for high-ranking features such as [+animate] and [+human]. Positive specification for these features is lexically distinctive of surface pronominal paradigms and nouns designating natural agents. Nouns negatively specified for these features normally function as objects but do not constitute natural or highly-acceptable transitive subjects. Almost all transitive verbs have selectional restrictions that favor [+animate] and [+human], or other agentive nouns in the transitive subject function. That transitive subjects never incorporate is not inherent in the transitive subject function, but is due to the fact

that transitive subjects are invariably characterized by positive specification for high-ranking nominal features.

In Arikara, lexical classes that do not incorporate include: all human nouns such as wi.ta "man," sapat "woman," wi.naxč "boy," and all nouns designating kinsmen; nouns designating animals and all living creatures that have the potential for action; proper names of persons, villages, tribes, and geographical locations.

On the other hand, body parts and products, and nouns designating closely allied phenomena such as sšū.nu? "soul," nano.kaʔa.tu? "shadow," and awiu? "image or picture," regularly incorporate, as do body products regularly associated with particular animals, as in (5).

(5) /nikus čirikohč ti+Ø+nipi.k+karauk+hu+u.ku/

sbj ind-sbj-dir-vs-imp-hab
obj asp asp

[nikus čirikohč tiripiri.karo.khu.ku?] The/a chicken lays eggs.

Nouns designating natural forces and large, often mass, natural phenomena, regularly incorporate, as in (6)-(8).

(6) /na.nit we=ti+tswi.n+ta+ka.a+Ø/

[na.nit wetitswihtaka.ʔA]

adv adv-ind-sbj-loc-vs-prf
proc asp

It's raining hard.

(7) /ti+wara.k+čipa.n+BE+Ø/

[tiwara.čipa.ʔA]

ind-sbj-vs-prf
asp

The wood is wet.

(8) /si.no ti+huna.n+čipa.n+BE+Ø/

[si.no? tyunačipa.ʔA]

adv ind-sbj-vs-prf asp

The ground is still wet.

Other nouns in this class that regularly incorporate include:

nawIška.nu? "smoke," hutu.nu? "wind," ho.ruhtu? "mud," huna.u? "snow," šaku.nu? "sun," hItka.nu? "dirt, earth," tsto.hu? "water," či.su? "liquid," hu.nu? "weeds," hanu.tu? "hay or grass," kata.nu? "green grass," ha.ku? "tree," ahkawikat "cut bank," hatawi "hole," hatu.nu? "path," and kanitč "rock."

Within a general class of nouns designating cultural products and artifacts, it is difficult to predict which may incorporate and which may not. Nouns which regularly incorporate designate the most basic and generic cultural phenomena such as itu.nu? "village," ačita.nu? "tribe or village," ta.kaxč "dried meat," tsasč "meat," kuna.u? "medicine," karu.xu? "medicine bundle," wa.psišu? "metal or money," haxč "rope," nawIškahč "pipe," and na.ka.wi "house."

Many other nouns designating items of material culture, such as ni.šu? "arrow," ne.sič "knife," and tina.ku? "rifle" do not incorporate. Such nouns, although they do not normally occur as transitive subjects, nevertheless designate referents that are ordinarily employed in a specific function or to accomplish a particular act. Thus, these nouns often stand in instrumental relationships to predicates with which they occur. Within the class of grammatical non-agents (i.e., nouns that are not natural or acceptable transitive subjects) we may distinguish nouns that are semantically agentive (Part of whose conceptual meaning involves the notion of use or activity with respect to predicates with which they ordinarily occur) from those that are semantically non-agentive.

Nouns like tina.ku? "gun" are semantically agentive even though they may not occur as transitive subjects, while nouns like ta.kaxʃ "dried meat" are non-agentive both grammatically and semantically. Semantically agentive nouns do not incorporate, while semantically non-agentive nouns may do so.³

Within lexical domains, nouns of generic reference may incorporate, while taxonomically-subordinate nouns of specific reference may not. That is, superordinate nouns in a taxonomic classification often incorporate, while hyponyms (words whose componential meanings contain all the features present in the definition of the superordinate term, plus some additional features) do not. Thus, ha.ku? "tree" regularly incorporates but nouns designating specific subclasses of trees such as tawIsa.ku? "cedar" never incorporate. Similarly, superordinate terms like tsto.hu "water" and ʃi.su? "liquid" incorporate, while nouns designating specific types of liquids such as tska.tit "coffee" (ts-, compound stem form of "water," and ka.ti.t "to be black") and etʃi.su "milk" (e.t "breast" and ʃi.su "liquid") do not.

Hyponyms stand in a relationship of meaning inclusion, but not referential inclusion, to the taxonomically-superordinate terms. A closely-allied distinction relevant to incorporation is that between nouns designating individuals and mass nouns that are referentially inclusive of the individuals or objects. Nouns denoting individual animals or objects such as tanaha? "buffalo" do not incorporate, but mass nouns referentially inclusive of the

individuals (e.g., kani·šur "herd") may do so.

The presence of any one of the features [+animate], [+human], or [+proper] in the lexical feature specification of nouns blocks incorporation. Since nouns normally employed as transitive subjects are almost invariably positively specified for the feature [+animate], they may never incorporate.

Only one exception is found to this otherwise absolute feature restriction on noun incorporation. Human nouns may optionally incorporate when they occur as predicate nominals of the active intransitive verb theme un...he·r "to be good or handsome" as in (9)-(11).

- | | | | |
|------|---------------------------|-------------------|--------------------------------|
| (9) | /ti+un+wi·ta+he·r+∅/ | [tuhwi·tane] | <u>He is a good man.</u> |
| | ind-pv-sbj-vs-prf
asp | | |
| (10) | /ti+un+wi·te·šur+hiwa·+∅/ | [tuhwi·te·šuniwa] | <u>The young men are good.</u> |
| | ind-pv-sbj-vs-prf
asp | | |
| (11) | /ti+un+su·na·xu+he·r+∅/ | [tunsu·na·xune] | <u>The girl is good.</u> |
| | ind-pv-sbj-vs-prf asp | | |

Human nouns never incorporate in other predicate nominal constructions.

At present, it is not possible to establish a scale of binary features which absolutely defines the potential of nouns for incorporation. Nouns negatively specified for the features [+animate], [+human], and [+proper] are more likely to incorporate if they are negatively specified for the feature [+count], probably

because [+count] objects may be more easily used to accomplish some end or activity, while [-count] nouns ordinarily stand in non-agentive relationships to predicates with which they occur. Further relative capacity for incorporation seems to depend in part on the internal structure of taxonomies. Within taxonomic groupings, superordinate [-specific] nouns may incorporate, while [+specific] hyponyms may not.

7.5 Obligatory and Optional Incorporation

The description of noun incorporation is complicated by the fact that some nouns obligatorily incorporate, while others do so optionally. In (1)-(4), (a) sentences with independent noun subjects and objects, and (b) sentences with incorporated subjects and objects, are considered equally acceptable.

- (1)a /wi·te·šuč ti+Ø+un+hiwa·+Ø/ [wi·te·šuč tuhniwa]
 sbj ind-sbj-pv-vs-prf asp The young men are good.

- b /ti+un+wi·te·šuč+hiwa·+Ø/ [tuhwi·te·šuniwa]

- (2)a /ati+nas ta+t+Ø+uh+Ø awi+u/ [atinas ta·tu awiu?]
 ind ind-sbj-ind-dir-vs-prf dir
 obj obj obj asp obj

I gave my brother a/the picture.

- b /ati+nas ta+t+Ø+awi+uh+Ø/ [atinas ta·tawiu]
 ind ind-sbj-ind-dir-vs-prf
 obj obj obj asp

- (3)a /ta+t+Ø+nanah+Ø karu·x+u/ [tAhnana karu·xu?]
 ind-sbj-dir-vs-prf dir
 asp obj I have a bundle.

b /ta+t+karu*x+nanah+Ø/ [tAhkaruxtana]

ind-sbj-dir-vs-prf
obj asp

(4)a /ta+t+Ø+in+ni+ut+te+Ø tsas+č/ [tatnisteʔ tsasč]

ind-sbj-dir-pfx-pv-vs-prf dir I like (the) meat.
obj asp obj

b /ta+t+in+ni+ut+tsas+te+Ø/ [tatnistsasteʔ]

ind-sbj-pfx-pv-dir-vs-prf
obj asp

The nouns in (1)-(4) are only weakly "attracted" into the verb. Among the nouns that obligatorily incorporate are the stems for "house," "land," "water," "tree," "hole," and all body parts. Within the class of nouns that may potentially incorporate, those that obligatorily do so, in addition to body parts, largely designate natural forces and phenomena, while nouns that optionally incorporate include many of the stems designating cultural products and artifacts.

7.6 Obligatory and Optional Deletion

In all preceding sample sentences, only the incorporated copy of the intransitive subject or transitive object appears in surface structures. The fact that there is no external noun suggests that the transformational operation by which incorporation is accomplished moves an actual noun constituent into the verb. This version of incorporation, although it would suffice to explain the instances of incorporation presented so far, cannot be accepted. In some cases the external noun which the incorporated copy cross-

references is optionally retained, a phenomenon which we term noun-doubling. The fact that external nouns may be retained under certain circumstances indicates that noun incorporation is accomplished by an agreement transformation which copies lexical features of nouns into the verb, and not by movement of an actual noun constituent. Thus, noun incorporation, or "nominal agreement," formally parallels pronominal agreement, except that copying is done in a different position within the verb. The fact that external nouns may be retained also raises the question whether feature-copying of the noun into the verb and deletion of the external noun occur in the same transformational operation. This section examines several instances of noun-doubling in order to determine whether incorporation and deletion may be accounted for by the same transformational rule.

Sentences (1)a and (2)a illustrate noun-doubling; (1)b and (2)b illustrate optional deletion of the external noun. Asterisked sentences (3) and (4) illustrate two instances in which retention of the external noun results in unacceptable surface sentences.

(1)a /huna.n+u [na+t+huna.n+na.pih+Ø+a]_S ti+un+huna.n+he.r+Ø/
 subj rel-sbj-dir-vs-prf-sub ind-pv-sbj-vs-prf
 obj asp suf asp

[huna.nu[?] natuna.na.pihA tuhnunane]

The land that I bought is good.

b [natuna.na.pihA tuhnunane]

(2)a /wi.ta+Ø ni+Ø+Ø+ux+č̣i.ka+Ø tsto.h+u

sbj rel-sbj-dir-pas-vs-prf dir
obj asp obj

[kana=ni+un+ts+he.r+Ø+a]_s ti+Ø+un+na.xih+hu/

neg-rel-pv-sbj-vs-prf-sub ind-sbj-pv-vs-imp
asp suf asp

[wi.ta nuxč̣i.ka[?] tsto.hu[?] kananuhtse.rA ti.na.xihu[?]]

The man who drank the bad water is sick.

b [wi.ta nuxč̣i.ka[?] kananuhtse.rA ti.na.xihu[?]]

*(3) /huna.n+u ti+un+huna.n+he.r+Ø/ [huna.nu[?] tuhnunane]

sbj ind-pv-sbj-vs-prf asp The land is good.

*(4) /tsto.h+u ti+un+ts+he.r+Ø/ [tsto.hu[?] tuhtse]

sbj ind-pv-sbj-prf asp The water is good.

Sentences (1) and (2) are complex. Sentence (1)a consists of a main sentence and a relative clause embedded in the noun phrase of which huna.nu[?] is the head. Comparison of (1)a and (1)b with (3) shows that retention of the external noun huna.nu[?] is optional when the relative clause is present, while the external noun in (3) must be deleted when there is no relative clause in order for the surface sentence to be well-formed.

In (2)a, the external head noun tsto.hu[?] "water" is optionally retained when the noun phrase of which it is the head contains an embedded relative clause. Comparison of (2)a and (2)b with (4) shows that deletion of the external noun is obligatory when the noun phrase of which it is the head does not contain a relative clause.

Relative clause formation in (1) and (2) provides some evidence of how deletion of external nouns must be formulated. Since the topic of relative clause formation is otherwise outside the scope of this chapter, it is touched on only briefly here.

Relative clauses in Arikara derive from sentences embedded within noun phrases. In order for a relative clause to be well-formed, the embedded sentence must contain a noun phrase (the "shared" NP) identical to its head in the main sentence. Embedded relatives are mapped into surface structures by deletion of the shared NP, and modification of structure within the verb of the embedded sentence.

Sentence (5) illustrates relative clause formation in an instance where noun incorporation does not occur.

(5) /ta+tt+Ø+tut+e.rik+Ø pi.ra+tu [ši=ni+in+Ø+wa.waiš+a]_S /

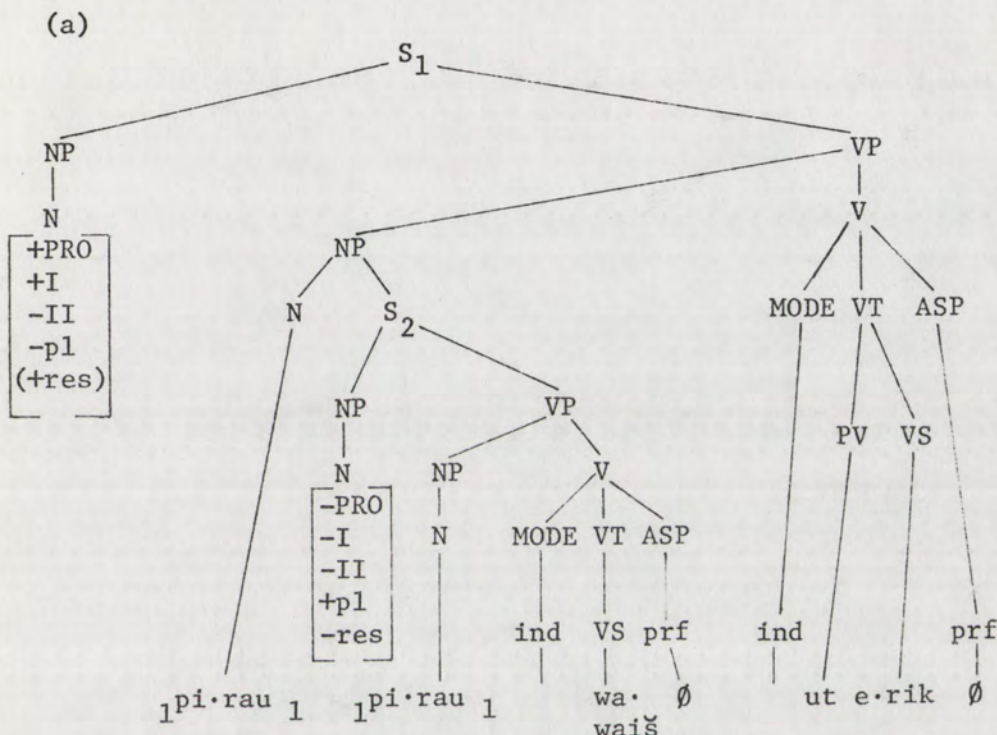
ind-sbj-dir-pv-vs-prf	dir	sbj-rel-sbj-dir-vs-sub
obj	asp obj	num obj suf

[tatu.te.rit pi.rau? šinihwa.we.šA]

I saw the child that they hit

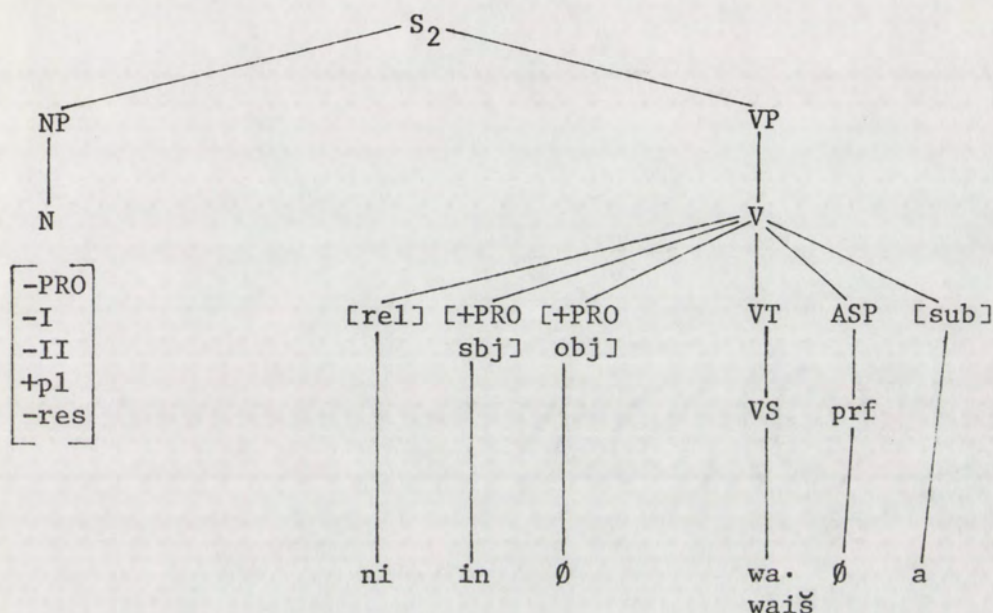
The surface sentence is comprised of a main sentence ("I saw the child") and a relative clause embedded as a sentence within the object noun phrase of which pi.rau? "child" is the head ("They hit the child"). The relativizer (rel) which occurs in the modal prefix position in the embedded sentence agrees with person features of the subject of the embedded sentence (ni-- third person subject; na-- non-third subject). The verb of the embedded sentence is marked for subordination by the subordinating

suffix -a. Underlying (5) is the structure (a).



Since relativization deletes the shared NP in the lower sentence, clearly object and subject agreement must precede relativization. Object agreement operates cyclically in the lower and then the higher sentence, producing a pronominal copy in the verbs of each sentence. Subject agreement then operates cyclically in both sentences. Relativization occurs in the lower sentence, subject to identity (indicated by subnumerals) of the shared NP with its head. Relativization deletes [MODE] and introduces [rel] in its place, creates the verb feature [sub] (subordination) rightmost in the verb, and deletes the shared NP. Following object and subject agreement, relative clause formation produces the derived structure (b) in the lower sentence.

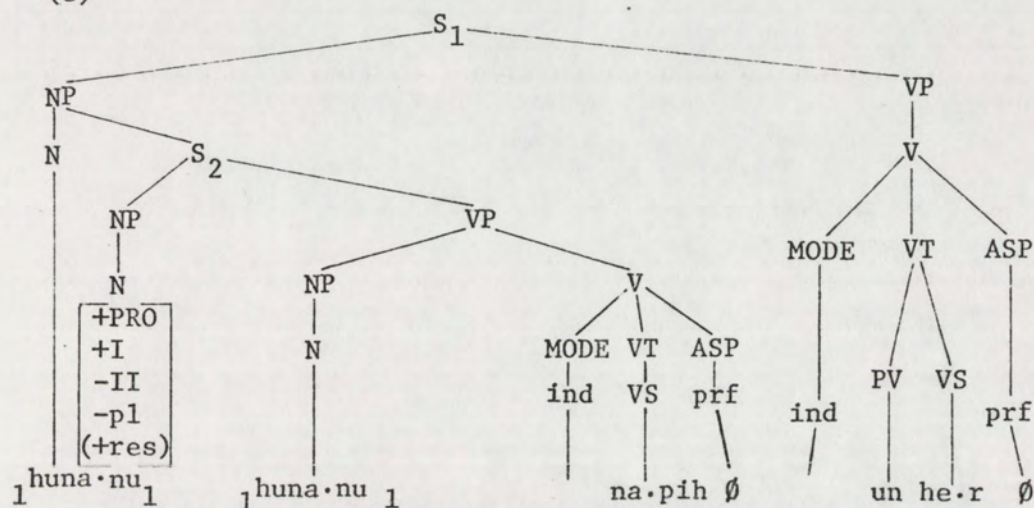
(b)



Since relativization in Arikara deletes the shared NP, clearly all operations of object and subject agreement must precede relativization. Because in some sentences object and/or subject agreement results in incorporation, it follows that incorporation must precede relativization.

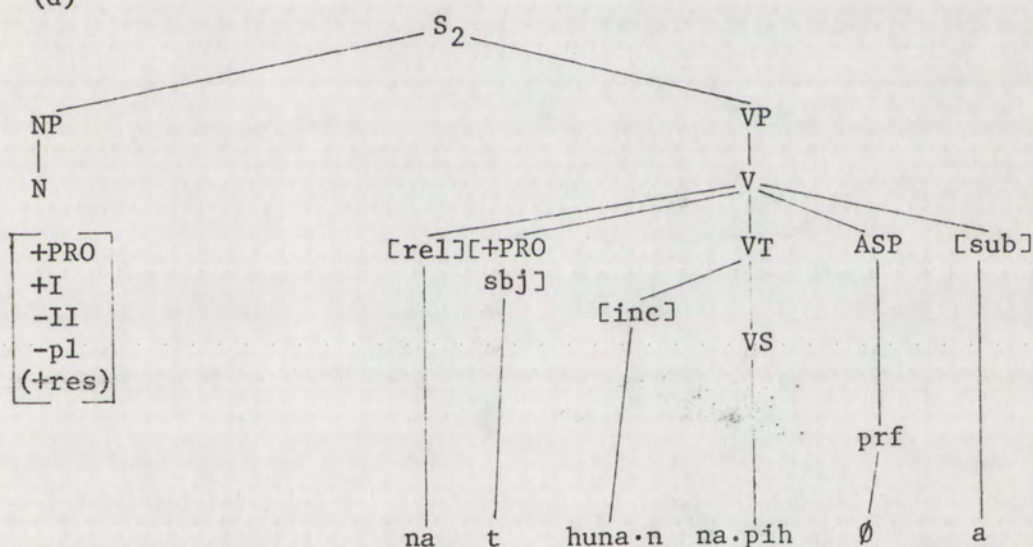
Underlying the sentence *huna·nu? natuna·na·pihA tuhnunane* "The land that I bought is good" is the structure (c).

(c)



Object agreement in the lower sentence obligatorily results in the incorporation of the lexical features of huna·n- "land" into the verb theme. Cyclical subject agreement results in the copying of pronominal features in the verb of the lower sentence, and copying of nominal features in the verb theme of the main sentence. Relativization occurs in the lower sentence, producing the (abbreviated) derived structure (d).

(d)



The fact that the shared NP huna·nu? must remain following noun incorporation in order for relativization to take place indicates that incorporation and deletion should be formulated as two separate operations.

7.7 Rules of Noun Incorporation

Noun incorporation operates by copying lexical features of appropriate external nouns in the verb theme. The incorporated feature bundle is realized by the appropriate entry in the lexicon

on a second lexical pass. Subentries for noun stems that have special compound stem forms must be included in the lexicon.

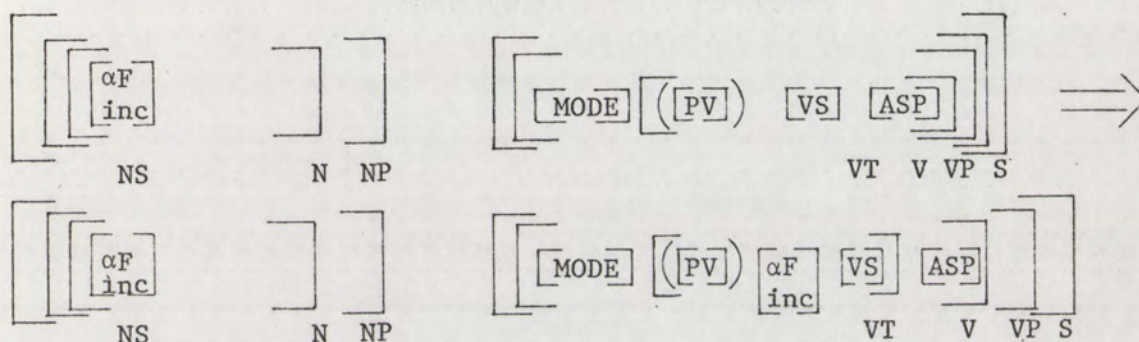
The phrase structure rules are revised in (i)-(viii) to specify the possible expansions of NP discussed in Chapters IV and VI, and the expansion of the category tense.

- (i) $S \longrightarrow NP \ VP$
- (ii) $NP \longrightarrow \left\{ \begin{array}{l} S \\ (DET) \ N \ (S) \end{array} \right\}$
- (iii) $N \longrightarrow NS$
- (iv) $VP \longrightarrow (NP) \ (NP) \ V$
- (v) $V \longrightarrow MODE \ (TNS) \ VT$
- (vi) $VT \longrightarrow (PV) \ VS$
- (vii) $MODE \longrightarrow \left\{ \begin{array}{l} ind \\ pot \\ \dots \end{array} \right\}$
- (viii) $TNS \longrightarrow \left\{ \begin{array}{l} pas \\ non-pas \end{array} \right\}$

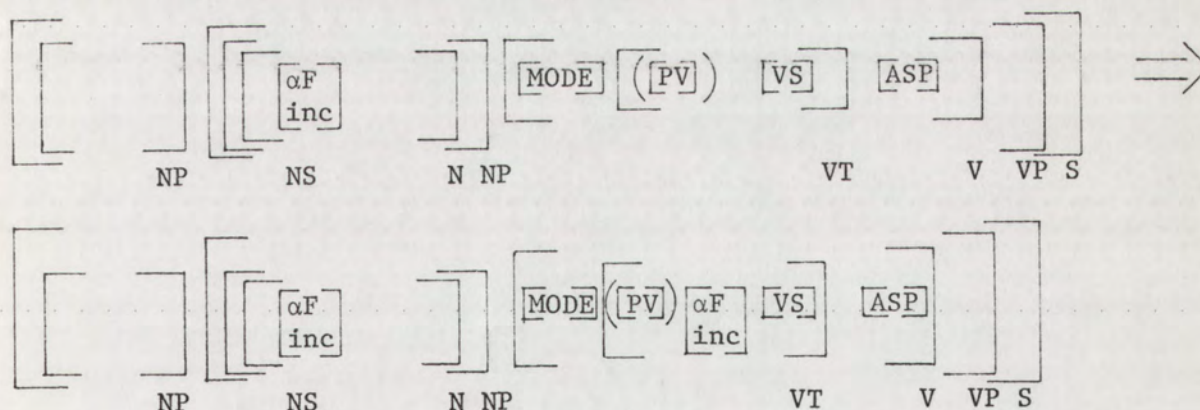
Since noun incorporation is an agreement transformation formally parallel to pronominal agreement, we refer to incorporation of the subject as "nominal subject agreement," and to incorporation of the object as "nominal object agreement." Nominal agreement operates on complex symbols containing appropriate lexical feature specification, including negative specification for [animate], [human], and [proper]. Since a complete statement of the lexical

features that determine potential for incorporation is not possible, potential of nouns for incorporation is indicated by the feature inc within the incorporating noun in the rules.

T-NOMINAL SUBJECT AGREEMENT



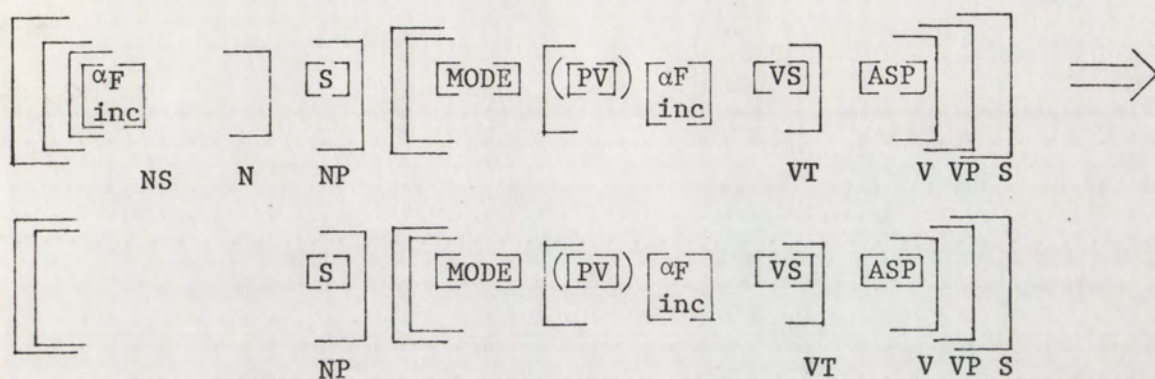
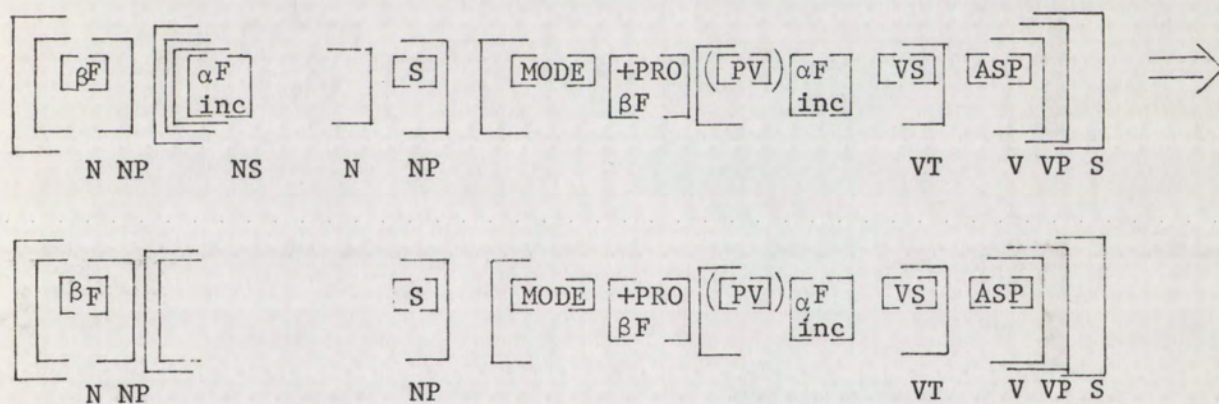
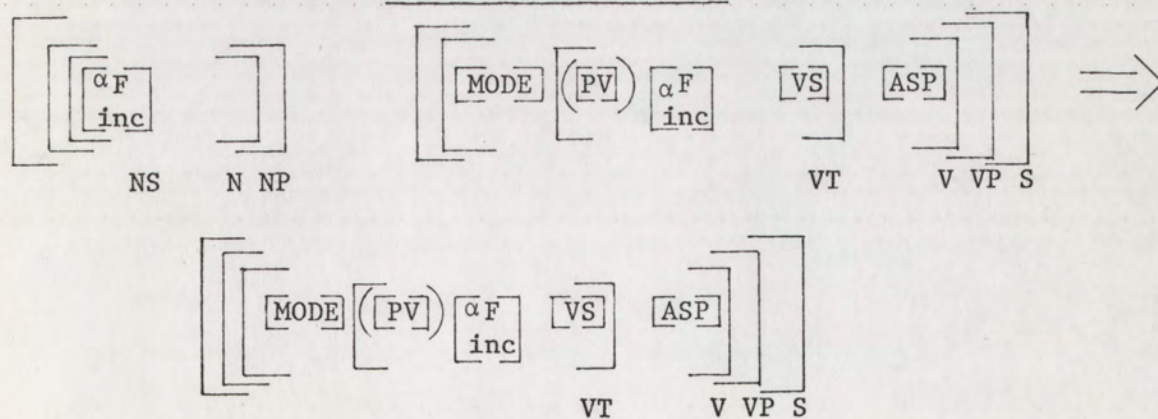
T-NOMINAL OBJECT AGREEMENT

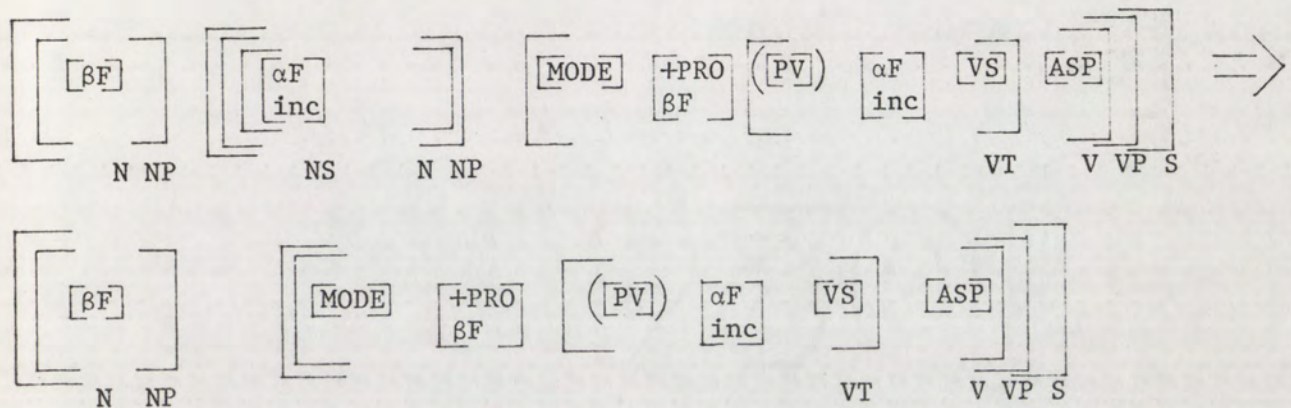


The agreement rules state that lexical features of appropriate nouns in the intransitive subject and transitive object functions are copied in the verb theme immediately preceding the verb stem.

In the derivation of surface structures from deep structures, deletion of noun phrases from which pronominal and nominal copies

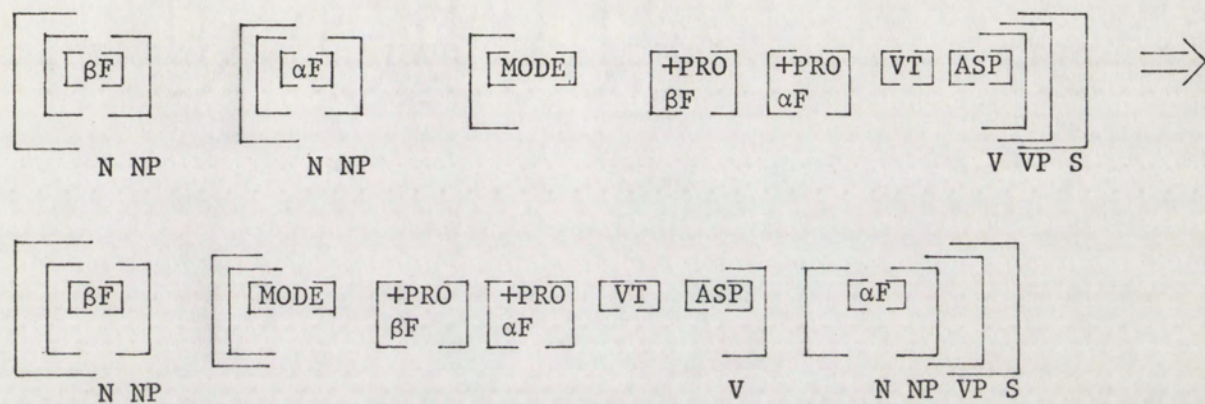
have been created in the verb follows all agreement transformations.⁵ Evidence from relative clause formation indicates that the deletion of the external noun whose lexical features are copied in noun incorporation depends upon the constituency of the noun phrase. If the incorporating head noun is the sole constituent of the noun phrase, the entire external noun phrase is deleted. If the noun phrase contains an embedded sentence, the head noun is optionally deleted but the noun phrase containing the embedded sentence remains. Since the conditions of deletion are difficult to display in a single rule, deletion is accounted for by a set of two optional deletion rules and a set of two obligatory ones. Deletion of the external head noun of noun phrases containing embedded sentences is accounted for by the two transformations T-SUBJECT DELETION-OP (optional), and T-OBJECT DELETION-OP. The two rules state that the external incorporating noun subject of active intransitive clauses and the external incorporating noun object of transitive clauses may be optionally retained when the noun phrase of which the incorporating noun is head contains an embedded sentence.⁶ T-SUBJECT DELETION-OB (obligatory) and T-OBJECT DELETION-OB state that when an external incorporating noun is the sole constituent of a noun phrase, the entire noun phrase is deleted.

T-SUBJECT DELETION-OPT-OBJECT DELETION-OPT-SUBJECT DELETION-OB

T-OBJECT DELETION-OB

Except where incorporation has occurred, deletion of external noun phrases from which pronominal copies have been created in the verb does not occur when the noun constituent contains lexical noun features. Since unincorporated transitive objects preferentially follow the verb when the subject noun phrase contains a lexical noun, a final transformational rule is needed to move the object noun phrase from its position to the left of the verb in deep and intermediate structure around to the right of the verb. The rule, formulated as T-OBJECT MOVEMENT, applies after all deletion rules. It states that the object noun phrase is moved to the right of the verb in cases where subject and object noun phrases have not been deleted by preceding rules.

T-OBJECT MOVEMENT



FOOTNOTES

- 1 In Chapter V it was noted that only animate nouns may function as subjects of stative intransitive verbs. There is only one exception to this statement: possessed body part nouns may function as underlying subjects of stative verbs. The possessor of the body part is always animate. Since the interaction of formation of possessive phrases with noun incorporation is not considered in this chapter, discussion of incorporation in stative verbs is omitted.
- 2 The independent noun stem aka·n- "house" occurs as a citation form, but "house" and a number of other stems always occur in actual speech as subordinated nouns. Subordination of nouns is expressed by the subordinating prefix na-, the noun stem, and the subordinating suffix -wi. The subordinated form of "house" is na·ka·wi.
- 3 One way in which semantically "agentive" nouns may be distinguished from "non-agentive" nouns is that the former may be inflected with the instrumental case-suffix -hini.
- 4 Incorporation is optional in this construction. The meaning "The young men are good/handsome" may also be expressed with unincorporated noun. The forms with incorporated noun differ semantically from other instances of incorporation, in that they presuppose that the individual or individuals are referentially defined. This requirement is not placed on instances of obligatory incorporation. For example, ta·takAkaro·ku? may mean "I am building a house" or "I am building the house." Incorporation of "house" is obligatory in either meaning.
- 5 The rules which delete external noun phrases following agreement are not explicitly formulated here, except in the case of noun incorporation. Elsewhere, a low-level [+PRO] deletion rule is needed which applies following all agreement transformations. The presence of a feature, perhaps [emph] (emphasis), positively specifiable for first and second persons in subject

position, would prevent the deletion of independent personal pronouns where they are used for emphasis.

- 6 It is possible that this statement should be expanded to read that deletion of the external noun is also optional when the noun phrase contains a determiner constituent. For example, retention of the external noun is optional in (a), where the noun is modified by the demonstrative determiner nawa·rič "those (standing)"; (b) is not considered good.

- | | | |
|-----|--------------------------------------|----------------------|
| (a) | [nawa·rič wi·te·šuč tuhwi·te·šuniwa] | <u>Those young</u> |
| (b) | [wi·te·šuč tuhwi·te·šuniwa] | <u>men are good.</u> |

Also, subordinated nouns are optionally retained outside the verb, as in (c).

- | | | |
|-----|-------------------------|---|
| (c) | [na·ka·wi ta·takana·pi] | <u>I bought a/</u>
<u>the house.</u> |
|-----|-------------------------|---|

The relationship among these phenomena is not well understood.

Chapter VIII

8.1 Conclusions

One purpose of this study has been to describe and analyze a small portion of the syntactic component of a transformational grammar of Arikara; a second, parallel purpose has been to show that a syntactic account of the language cannot be divorced from the study of underlying semantic structure. In this concluding chapter, we draw together and summarize these two aspects of the study.

Since our description and analysis concentrate on only one aspect of Arikara grammar--the relationships of nouns to verbs at deep and surface structure levels--it is certainly the case that many other rules will be required for an adequate account of Arikara syntax. We have shown that Arikara surface verbal forms are characterized by the presence of a number of formatives within the verb which derive from noun phrases external to the verb in deep structure. The transformational operations discussed in Chapters IV, VI, and VII augment the verb by introducing structure into it. With just the small set of rules proposed here, it is necessary to make explicit the sequences in which they may apply.

In stative intransitive constructions, T-VT RAISING, if applicable, must apply before T-STATIVE; both precede MODAL PREFIX AGREEMENT and T-OBJECT AGREEMENT.

Two rules, T-OBJECT AGREEMENT and T-NOMINAL OBJECT AGREEMENT,

copy features of direct object nominals in the verb. T-REFLEXIVE must be ordered to precede T-OBJECT AGREEMENT, for reflexivization eliminates one of the environments in which T-OBJECT AGREEMENT would otherwise apply. T-REFLEXIVE also precedes T-INDIRECT OBJECT AGREEMENT, since reflexivization in ditransitive and intransitive clauses deletes the indirect object nominal which would otherwise be indexed by pronominal copy in the verb. Where applicable, the rule T-BENEFACTIVE precedes T-INDIRECT OBJECT AGREEMENT.

Two rules, T-SUBJECT AGREEMENT and T-NOMINAL SUBJECT AGREEMENT, create pronominal and nominal subject copies, respectively, in the verb. Rules of subject agreement follow all rules of object agreement.

In all clauses, rules of number segmentalization follow agreement in the verb. In transitive clauses, T-NUMBER NEUTRALIZATION and T-SI DELETION precede segmentalization. Deletion of external noun phrases from which information has been copied in the verb, except in the case of reflexivization, is the last operation in the derivation of surface forms.

We have examined the claim of other investigators that the Caddoan languages are of ergative syntactic type. The notions of "ergativity" and "accusativity" have been discussed, and it has been shown that if Arikara and the other Caddoan languages were ergative, there should be no difference in the syntactic treatment of the intransitive subject and the transitive object. We have shown that in Arikara, the intransitive subject and transitive

object functions are not identified syntactically, but rather, that the underlying subject of stative intransitive verbs becomes identified in surface case-marking with the object of the transitive verb. The rule T-STATIVE- alters the configuration of underlying stress, moving the subject of the stative verb into a position on an intermediate phrase-marker where agreement in the verb is accomplished by T-OBJECT AGREEMENT. We have referred to the resulting system of surface case-marking as split-intransitive.

It has furthermore been shown that stative intransitive verbs have selectional restrictions such that the underlying subjects of these verbs must be animate, or body part nouns whose possessors are animate. Stative verbs are not comprehensively defined as designating "states" or "conditions" as opposed to "processes," although this is generally the case; rather, they are invariably verbs designating states, conditions, or processes of which the associated noun phrase is not the agent, but the patient. We have suggested that the objective surface case-marking of the stative intransitive subject indexes the unnaturalness of high-ranking categories in a semantically patientive function. This is the mirror-image of the split surface case-marking found in fundamentally ergative languages such as Dyirbal, for the essential feature of split-ergative systems is that lower-ranking categories in a nominal hierarchy become morphologically marked when they occur in the agentive transitive subject function.

Thus, we have argued that all intransitive constructions derive from a unitary underlying source, and that surface case functions are determined by underlying semantic structures whose configurations determine the applicability or non-applicability of transformations. We may think of T-STATIVE as a topicization transformation which alters the underlying foncfiguration of noun-verb relationships.

The number of stative verb themes in Arikara probably does not exceed thirty. It is to be hoped that our speculations regarding the nature of the split in Arikara will provide some material for comparison with other languages exhibiting split-intransitive case-marking, such as Iroquoian, and many of the Siouan languages in which the split in the intransitive paradigm is much more pervasive.

We have shown that cross-referencing of external subject and object nominals in the verb is accomplished by two formally parallel processes, pronominal and nominal agreement. Object agreement is determined under different conditions by a rule-set including T-REFLEXIVE, T-OBJECT AGREEMENT, and T-NOMINAL OBJECT AGREEMENT. The applicability of each rule is determined by underlying semantic configurations of noun phrases.

T-REFLEXIVE operates on structures in which the subject and direct object nominals are coreferential. Reflexivization deletes the second of two coreferential noun phrases, thus removing a number of transitive structures from the domain of application

of T-OBJECT AGREEMENT.

The applicability of T-NOMINAL OBJECT AGREEMENT is similarly determined by underlying semantic configurations of noun phrases. We have related the phenomenon of noun incorporation to the finding that certain nominal functions in a sentence are preferentially filled by constituents with different underlying configurations of feature values. In Arikara, incorporating nouns are low-ranking [-animate] categories. It has been shown that incorporation of the intransitive subject and transitive object is not determined by syntactic function per se, but is explicable rather in terms of the fact that nouns which preferentially fill these two case functions have, in many instances, similar configurations of lexical features.

It can be argued on several grounds that the process of noun incorporation is becoming increasingly marginal and less productive in Arikara. First, it is difficult to specify precisely the nominal feature-configurations that trigger incorporation. Although we can claim that incorporating nouns are characterized by negative specification for high-ranking features, we cannot make the stronger claim that we can predict in all cases which nouns may incorporate and which may not. Second, incorporation is optional in a number of cases. Third, older speakers tend to incorporate more frequently than do younger speakers. The tendency not to incorporate may be due to the influence of English, and is one indication that older patterns are not being maintained in the

rapidly dwindling speech community.

The effect of noun incorporation in cases of obligatory incorporation combined with obligatory deletion, is to reduce autonomous word-units to the status of unindependent elements, a phenomenon which we may consider one sort of grammaticalization. Incorporating nouns are removed from a position of relative syntactic independence and are inserted in the morphologically rigid structure of the verbal form. Thus, the sacrifice of syntax to morphology runs parallel with detopicization of incorporating nouns. In noun incorporation, syntactic process is inextricably bound up with semantic structure on a number of linguistic levels. We suggest that the further study of noun incorporation may provide interesting insights into change in structural type.

Although rules of possessive formation have not been integrated into the grammar, one point of especial interest has emerged from the discussion of possession. The two formally distinct constructions of subject possession have been related to different configurations of feature values of possessed noun. In prefixal subject possession, the possessed nominal is invariably lower-ranking than the possessor. Many of the nouns whose possession is expressed by this construction may incorporate, and we observe that the animate possessor is topicized, so that modal prefix agreement is determined by the possessor, and not the possessed nominal. The underlying possessed sentence-subject in effect becomes equated with a surface object.

Sentential possession of animate categories, on the other hand, is expressed with the independent possessive pronouns, and the modal prefix agrees with the possessed subject nominal. Thus, Arikara expressed syntactically a constant semantic opposition of animate and inanimate categories in split-intransitivity, noun incorporation, and possessive formation.

It is hoped that this study has made some small addition to our knowledge of Caddoan, and that further research will provide a fuller and more adequate account of the Caddoan languages and the people who speak them.

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Curriculum Vitae

Francesca C. Merlan was born January 23, 1949, in Taos, New Mexico. She attended primary and secondary schools in New York, Colorado, and Idaho, graduating from Moscow High School, Moscow, Idaho, in 1964. She attended the University of Idaho from 1964 to 1966, and San Francisco State College from 1966 to 1967, when she received the degree of Bachelor of Arts in Modern Languages. Ms. Merlan entered the University of New Mexico in 1970, and received the degree of Master of Arts in Anthropology in 1970, and the Doctor of Philosophy in Anthropology in 1975.

From 1967 to 1968, Ms. Merlan held a post-graduate Fulbright Fellowship in Pavia, Italy. She joined the staff of Tulane University in 1973, where she currently holds the rank of Instructor in the Department of Anthropology.

Ms. Merlan was elected to Phi Beta Kappa in 1966, and was awarded a National Science Foundation Fellowship in 1972.