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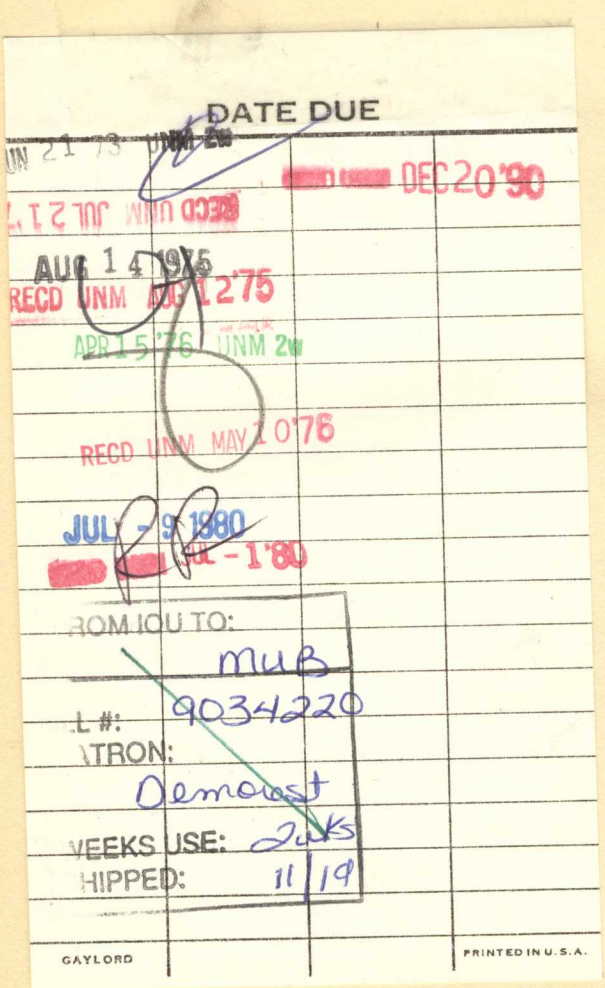

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THE DEVELOPMENT OF A CLINICAL SPEECHREADING TEST FOR HEARING HANDICAPPED CHILDREN OF PRE-READING LEVEL

By

Dolores Smith Butt

A Thesis

In Partial Fulfillment of the

Requirements for the Degree of

Master of Arts in Speech

The University of New Mexico

1958

This thesis, 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

MASTER OF ARTS

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CHAPTER I

INTRODUCTION

Speechreading as a language skill. Speechreading[1] is a valuable aid for the deaf and hard of hearing in maintaining communication with the hearing world. Success in school and society depends largely on an individual's ability to understand and use language, particularly spoken language.[2] Speechreading is used to supplement auditory cues for understanding speech even by those with normal hearing. It is advisable for individuals with mild hearing losses to study speechreading for their future benefit because of the progressive nature of many types of hearing impairment.[3] The Committee on the Conservation of Hearing of the American Academy of Opthalmology recommends that children whose better ear has an impairment of 25 decibels or more at 512, 1024, and 2048 cycles per second which does not improve under medical care within six months be given speechreading instruction.[4]

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[1]Speechreading as used in this paper is defined by Carl Aretz in Hearing and the School Child as ". . .the art of understanding the speaker's thoughts by watching the movements of his mouth and face." John Waldman, Francis A. Wade, and Carl Aretz, Hearing and the School Child: Hearing, School Progress, and Achievement of Public School Children, dissertation, Teachers College, Temple University, 1930, p. 177.

[2]Loraine A. Dahl. Public School Audiometry, Principles and Methods (Danville, Illinois: Interstate Printers and Publishers, 1949), p. 60.

[3]Waldman, et. al., op. cit., p. 126.

[4]Dahl, op. cit., p. 65.

The importance of a program of speechreading instruction in the schools can be seen by noting the large number of school children who, according to the above criteria, should be receiving instruction in speechreading. The number of school age children classified as hard of hearing is estimated at between two and three million.[5] Another 18,000 children of school age are classified as deaf.[6]

Although the group of deaf children is comparatively small, their problem is severe and their need for instruction in speechreading is great. For the person with a severe hearing loss, speechreading is an ability necessary for a normal life in the hearing world. Speechreading and other special learning techniques help the hearing handicapped to acquire language. Among the deaf, language development presents a very serious problem for the reason that the use of language for reception and expression is normally learned through hearing spoken language. The deaf must acquire language through other senses. The language handicap includes not only the comprehension and use of speech, but also the other language arts, reading and writing. Since the deaf cannot hear speech they must learn through visual, tactile, and kinesthetic means. The importance of speechreading is best understood as a part of the overall problem of language learning among the deaf, who are by definition those who lost their hearing before the

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[5]Hallowel Davis, Hearing and Deafness, A Guide for the Layman, (New York: Rhinehart, 1947), p. 175.

[6]Ibid.

acquisition of functional language.[7] The importance of speechreading in acquiring language is brought out by Mary New, an authority on language for the deaf. She states,

> Since a deaf child's ability to acquire language (both that which he uses and that which he understands) throughout all his years will depend to a great extent upon his ability to read lips, we cannot stress too strongly our belief that early lipreading experience with meaningful connected language is of greatest importance.[8]

Speechreading is considered by many educators of deaf children so important that it is not treated as a school subject, but rather as a basis for language learning. Mildred Groht explains, "Lipreading is not a subject to be learned. It is not a classroom trick to be used at certain periods of the day. . . . It is the casual or general lipreading that paves the way for the concepts of connected language."[9]

Children can begin to use the techniques of speechreading very early in life.[10] To encourage the early development of the skill, parents must provide opportunities for meaningful speechreading experiences. Mrs. John Tracy of the John Tracy Clinic, an oral school for deaf children, emphasizes the value of these early experiences in speechreading both at home and in the early years of nursery school for

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[7]Davis, loc. cit.

[8]Mary C. New," The Deaf Child's Speech Vocabulary," Volta Review, 56:106, 1954.

[9]Mildred A. Groht, "Language for the Deaf, A Summer Meeting Discussion, Volta Review, 51:243-244, 1953.

[10]Mrs. John Tracy, "Lipreading in Present Day Education, A Summer Meeting Discussion," Volta Review, 50:445, 1948.

deaf children. She makes the statement, ". . . . it would appear that general lipreading through real experiences would be among the most effective preventatives of language problems which might present themselves at a later date."[11]

Just how early ability to use speechreading is manifested varies from child to child, but for many deaf babies the ability can be trained from infancy. By beginning training early, the parents and teachers take advantage of the natural interest a child shows in watching faces and sharing the experiences of those close to him. This attention to the face of the mother and others who care for him contributes to early success in understanding some language by visual cues.[12] Demonstrable ability to use speechreading has been estimated by different teachers of the deaf as beginning about the time of a child's first birthday.[13] Eleanor Steed states her opinion to this in these words, "How early should a child be taught to speechread? The answer is, 'Just as soon as his parents learn that he is deaf.'"[14] Mildred Groht confirms this idea in her statement, "It is never too soon to start lipreading. . . ."[15]

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[11] Ibid.

[12] Irene Ewing, "Eleanor Has Made History, What Next?," Volta Review, 50:151, 1948.

[13] Ibid.

[14] Eleanor Leonard Steed, "Speechreading and How it Grows," Volta Review, 50:69, 1948.

[15] Groht, op. cit., p. 243.

Demonstrated ability to respond to speechreading among children under two years of age has been discussed in writings by two leading authorities on the education of the deaf, Irene Ewing and Josephone Timberlake. Miss Timberlake[16] cites the case of a child who first displayed speechreading responses at six months. Ewing discusses instances of speechreading ability among children at the ages of one year and five months, one year and six months, one year and eight months, and other children under two years of age.[17] Ewing recorded a demonstration of speechreading responsiveness of a one-year-old child who performed before a group of eighty witnesses, teachers of the deaf, at Manchester University.[18]

In a deaf child's early years, formal training is not emphasized. Speechreading is ". . .not taught, but given opportunity for growth." as Ewing expresses it.[19]

A leading school for the training of pre-school deaf children and their parents, the John Tracy Clinic, recommends general speechreading in the early years. Specific speechreading is then introduced

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[16]Josephine Timberlake, "A Lip Reader Less Than A Year Old," Volta Review, 51:32, 1949.

[17]Ewing, loc. cit.

[18]Ibid.

[19]Ibid.

paralleling general speechreading experiences and carried on as a means of vocabulary building.[20]

The natural acquisition of skill in speechreading will give a person some degree of ability, but beyond the earliest years, formal training is usually necessary for practical efficiency.[21] In the education of the aurally handicapped, speechreading is considered by many to be the most important subject taught.[22]

Training in speechreading helps a child in all his other school subjects. Ability to use speechreading helps to compensate for the educational retardation common to children with severe hearing handicaps.[23] Eisenson and Berry state, "We know from the results of several studies that lip reading instruction tends to raise the educational achievement of hard of hearing children."[24]

Testing for educational evaluation. Educational testing has developed since the beginning of the movement led by Professor Thorndike[25] fifty years ago into a strong interest in measuring educational achievement and aptitude in most school subjects. The growth of tests

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[21]Dahl, op. cit., p. 59.

[22]Heider, F., and G. Heider, An Experimental Investigation of Lip Reading (Psychological Monographs, Vol. 52, No. 232. Columbus, Ohio: Ohio State University Publications Office, 1940), p. 124.

[23]Dahl, loc. cit.

[24]Jon Eisenson and Mildred Berry, The Defective in Speech (New York: F. S. Crofts and Co., 1942), p. 330.

[25]Charles E. Skinner (ed.), Readings in Educational Psychology (New York: Farrar and Rinehart, Inc., 1937), p. 420.

and measurements has accompanied the increased interest in understanding individual differences among children. Rinsland shows the relationship between accurate, objective measurements and better knowledge of children. He states, ". . . we should be able to increase our knowledge of learning by making our measuring instruments more accurate. The problems of increasing our knowledge of boys and girls and what they learn are largely the problems of increasing the accuracy of measuring instruments."[26]

The importance of taking stock of the assets and liabilities of a child at an early age for more effective home training and re-education of special defects was pointed out as early as 1931 by Stutsman.[27] The young handicapped child has a right to a thorough evaluation to aid parents and teachers in the guidance and education of each child according to his needs and abilities.

In the case of the young deaf child, speechreading is one of the most important skills to be trained. A clinical tool for the evaluation of speechreading ability in the young deaf child can be an important part of the guidance program. However, such tests are few and limited

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[26]Skinner, op. cit., p. 230.

[27]Rachel Stutsman, Mental Measurement of Preschool Children (New York: World Book Company, 1931), p. 3.

in their application.[28]

The uses of tests for speechreading parallel the uses of other educational measurements. Ruch and Stoddard[29] point out the five principal directions in which educational and mental tests have proved useful:

I Supervision and administration of instruction
II Diagnosis of special difficulties
III Grading, promotions, and sectioning of classes
IV Research purposes
V Motivation of learning

All five categories are applicable to the use of testing in a program of speechreading education. One special reason for needing objective measures of speechreading ability and progress is noted by Grace Moore Heider, "In the teaching of lip reading, such objective measures are especially needed because of the great individual differences in lip reading ability."[30]

Any method which can improve the education of the deaf and hard

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[28]In the course of this writer's research on speechreading tests for children, no test was found which could be applied to hearing handicapped children at a pre-reading level. The tests of speechreading ability for older children which appear in the literature are of two types. One is a question type test requiring short written or spoken answers. The other is a type of test which consists of a series of words, phrases, sentences, or stories to be reproduced in writing by the children tested. Correspondence by the writer with schools for hearing handicapped children shows that assessment of speechreading ability and progress of young children is done in an informal manner and judgements are usually made intuitively by the classroom teacher.

[29]Skinner, op. cit., p. 428.

[30]Grace Moore Heider, "The Utley Lip-Reading Test," Volta Review, 49:457, 1947.

of hearing is worthy of consideration because of the seriousness of the language handicap which holds back this group. Deaf children tested in educational surveys have been found to be, on the average, five years educationally retarded. The average mental retardation is not great when the language factor is eliminated from the tests. The discrepancy between mental and educational development is due to language handicap.[31]

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[31] Stanley Berlinsky, "Measurement of the Intelligence and Personality of the Deaf: A Review of the Literature," The Journal of Speech and Hearing Disorders, 17:40, 1952.

I. THE PROBLEM

Statement of the Problem. It was the purpose of this study (1) to develop a clinical speechreading test for young children with a hearing handicap, and (2) to test a group of young deaf children ages three to nine years with the speechreading test and to compare their test scores with the teachers' ratings of the children's speechreading ability.

The test presented in this paper is intended as a clinical tool, not as a predictive or diagnostic test standardized on a representative group.

A test for a young child should not require knowledge of reading to understand the questions, nor a knowledge of writing to answer the questions, for such a test is directed at studying the child whose language development is at the pre-reading level. Testing the speechreading achievement of pre-reading hearing handicapped children imposes the following limitations on the type of test which would be practicable:

1. The test should not require oral answers. Young hearing handicapped children would be unfairly represented by this type of test because their oral language is often severely retarded when compared with normal children.

2. The test should not call for mere indications of yes or no by sign. The possibility of guessing answers would be greatly increased and adjusting the test for this possibility would lengthen the test.

3. The test items must be within the child's mental ability. The test is not meant to be a test of

intelligence, although a certain minimum of mental ability would be necessary for success on the test. Too difficult items would give advantage to the more intelligent child rather than the better speech reader.

4. The test items should be interesting, but not distracting. Speechreading requires careful attention to the speaker's face.

5. The vocabulary of the test must be very basic. The vocabulary development of hearing handicapped children is usually two or more years behind that of normal hearing children of the same age and intelligence development.[32]

6. All the lip movements used in speech should be represented. The use of vocabulary suited to the age level being tested will influence the phonemes most frequently used in the test and certain lip movements will naturally be more frequent than others.

Ability to use speechreading is dependent in part upon the child's level of language development. Among deaf and hard of hearing children, language retardation is common. It would be difficult to test speechreading ability without also indirectly testing language development. The difficulty of separating speechreading ability from other abilities, such as understanding language, need not be considered detrimental to the value of a speechreading test. To give a realistic picture of a child's actual speechreading performance, the factors which normally influence the speechreader's success or failure should be allowed to operate. These factors which may influence test performance, aside from speechreading skill, include language

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[32]Berlinsky, loc. cit.

development, intelligence, richness of environment, and personality characteristics such as distractibility and resistance to frustration. These factors will influence the test performance, but are not damaging to the usefulness of the test. They should be allowed to come into play insofar as is necessary. This is because speechreading is related to an individual's reaction to the whole situation. Speechreading is more than watching the movement's of a speaker's lips. Speechreading involves the reader's comprehension and judgement of the total situation. The speechreader takes the cues he receives and synthesizes them with the knowledge he has to understand the meaning intended by the speaker. It is because of this interpretation of the process of speechreading that the term "speechreading," rather than "lipreading" is used in this paper.

Summary of the Problem. The problem was to develop a test for hearing handicapped children which would give the clinical examiner some insight into the child's speechreading activity. The test was constructed with the limitations imposed by the age group tested, pre-reading children, and the limitations of their language development.

Delimitation of the Problem. This test is intended only as a clinical aid, not as an absolute measure. The test is not suitable for standardization in its present stage of development. The inherent difficulties in standardizing a speechreading test will probably make it impossible for test scores of children's speechreading to be more than an approximate indication of a child's ability. There are many uncontrolled variables in the administration of speechreading tests.

The most important variable is the behavior of the tester himself. The ease of speechreading varies greatly from speaker to speaker because of the differences in mobility of the face, the rate of speech, the distinctness of enunciation, selection of words, and other factors in the speaking situation. Motion picture presentation of speechreading material overcomes the variability of test administration, but motion pictures bring about other problems in rapport and obtaining suitable responses from young children. At the present stage of development, motion picture methods of speechreading testing do not seem suitable for deaf children at the pre-reading level.

Importance of the Problem. More than two million children of school age present extensive educational problems, particularly in the area of language teaching. Speechreading is one of the most important means of teaching language to this group of children. This speechreading test can be an aid to better understanding and improved education of the aurally handicapped through speechreading. The test can be useful in these situations:

(1) Placement of deaf children beginning their education at a new school or clinic.

(2) Evaluation of progress in the early years of a deaf child's training.

(3) Gathering information on the early development of speechreading skills. Very little is known about how this ability develops in an individual.

CHAPTER II

A REVIEW OF THE LITERATURE

A History of Speechreading

Speechreading in Europe. The history of speechreading training can be traced back to the fifteenth century in Europe. However, no record of speechreading tests appears in the literature until the twentieth century. Prior to the fifteenth century, the ability to read speech from facial movements was considered to be a supernatural gift.[1] The first systematic and successful teacher of the deaf was Pietro Ponce de Leon, a Spanish monk. He was considered to be a skilled teacher of speechreading.[2] The author of the first book on deaf education, Juan Pablo Bonet, was also from spain. Speechreading skill and education of the deaf have been closely associated from the earliest period.

Throughout the fifteenth, sixteenth, and seventeenth centuries in Europe, teachers of the deaf achieved prominence for their teaching skills and published works on the subject of deaf education. By the

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[1]Kenneth W. Hodgson, The Deaf and Their Problems, A Study in Special Education (New York: Philosophical Library, 1954), p. 59.

[2]Fred de Land, The Story of Lipreading, Its Genesis and Development. Revised and completed by Harriet Andrews Montague (Washington, D. C.: The Volta Bureau, 1931), p. 21.

eighteenth century, teaching methods were well developed, and two systems of education for the deaf had evolved, the oral and the manual.[3] These two systems and a combination of the two, known as the combined system,[4] form the basis for training deaf students in the United States and Europe at the present time. In both oral and the combined systems, speechreading is essential to communication.

Oral teaching methods have been in use in Germany[5] and England[6] from the eighteenth century to the present. In France, however, the leader of deaf education, Charles Michel de l'Epee, established the tradition of manual methods.[7] The alignment of the French teachers on the side of manual methods and the German and English teachers on the side of oralism was to create a traditional rivalry. This cleavage in methods exists to the present day in a lesser degree, and the differences of opinion have influenced the course of education for the deaf in the United States.

For those teachers in Europe, and later in the United States,

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[3]The oral method of teaching the deaf stresses oral language both for production through articulation training and for reception by means of speechreading. The manual method teaches a system of manual signs and/or the manual alphabet. Both expressive and receptive communication take place through signs.

[4]The combined method teaches speech, speechreading, and also makes use of signs. The proportion of the two methods varies from school to school.

[5]de Land, op. cit., p. 23.

[6]Ibid., p. 28.

[7]Ibid., p. 30.

who used the oral method, speechreading and articulation were the two most important means of communication to be taught.

Speechreading in the United States. When an interest in the education of the deaf arose in the United States, a community of people sent Thomas Gallaudet abroad to study teaching methods to enable him to teach their deaf children. Gallaudet studied in France where the manual methods were in use. Consequently, the early days of deaf education in the United States established a tradition of manualism. The Gallaudet school, where these methods were used, was the first school for the deaf in this country. Established as a private institution in 1817, it was soon taken over by the federal government. Gallaudet remains the only national college for the deaf in the United States.[8]

Educators who favored the oral system became involved in a controversy with the advocates of manualism. The oralists succeeded in establishing their own school, the Clarke School at Northampton in 1867.[9]

Gradually, other schools of both oral and manual types were opened. The Horace Mann School was started by oral teachers in 1869. This school attracted Alexander Graham Bell as an instructor. Bell

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[8]de Land, op. cit., p. 105.

[9]Ibid., p. 113.

was known as a pure oralist and his efforts to advance the oral system helped break the monopoly of the sign method in the United States.[10]

The early predominance of manual methods in the United States can account in part for the lack of speechreading tests, since speechreading was not a regular part of the curriculum in many schools for the deaf. Interest in speech and speechreading for the deaf was not widespread in the United States until the end of the nineteenth century. By the beginning of the twentieth century, oral teaching was well established. At the present time, the oral method or the combined method with oral emphasis is used in over 85% of schools for the deaf in the United States.[11]

The years 1900 to 1920 were vigorous ones for the advancement of oral education for the deaf in the United States. Speechreading was developing into a sounder and more scientifically oriented subject.[12] The number of schools and teachers grew and the quality of teaching improved. By 1920, several distinct schools of speechreading, each employing a specific system, were flourishing.[13] Leading teachers of this period directed normal schools for speechreading teachers and wrote textbooks which are still considered basic to the methodology of

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[10] Ibid., p. 117.

[11] Harry Best, Deafness and the Deaf in the United States (New York: The Macmillan Co., 1943), p. 538.

[12] de Land, op. cit., p. 11.

[13] Ibid.

speechreading instruction. Training in speechreading was given to a larger range of acoustically handicapped than in the early history of speechreading education. It was recognized that speechreading was useful to the hard of hearing as well as the deaf. Speechreading schools attracted many adults who had become deafened or hard of hearing after the development of speech.

One of the earliest teachers whose influence is still felt in speechreading education was Edward B. Nitchie. He placed emphasis on the psychological side of speechreading. Nitchie used what he termed a "synthetic" approach. He stressed the necessity for treating a sentence as a whole and helping a student to grasp the whole idea from the context.[14]

A German method named after its originator, Muller-Walle was accepted by many speechreading teachers in this country after its introduction by Martha Bruhn. The system is based on syllable practice; syllables and words are taught by their visible characteristics. Unlike other German methods, the Muller-Walle system does not stress awareness of the mode of articulation.[15]

Italian theories of childhood education influenced the

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[14]Elizabeth Helm Nitchie, "Lip Reading for Children" (paper read at Central Institute for the Deaf, Saint Louis, Mo., February, 1939).

[15]Harriet U. Andrews, "Of Lip-Reading for Adults", Reprinted from The Association Review, Washington, D. C.: Volta Bureau, p. 4.

education of young deaf children in this country. Montessori's books and the didactic material which she developed for normal children were well adapted to training deaf children. The Montessori method emphasized training children in the use of their senses. Montessori recognized the importance of giving children freedom and fostering independence, thereby allowing them to learn from their own experience.[16]

Andrews recommended the Montessori approach combined with the Muller-Walle system for training deaf children from infancy.[17] Many of Montessori's sense training techniques are still used in teaching language to the pre-school deaf.

Graded work for children from kindergarten to adulthood was developed by Cora and Rose Kinzie. The Kinzies combined principles of the Muller-Walle system with their own methods. They felt that children should be led into spontaneous, unconscious speechreading by means of attractive material. The graded lessons provide opportunity for self-expression and exercise of the imagination.[18]

Following the development of the Nitchie, Muller-Walle, and Kinzie systems of teaching speechreading, only minor developments in this area occurred until 1929 and through the thirties. In the years to

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[16]Maria Montessori, The Montessori Method (New York: Fredrich A. Stokes Co., 1912), 377 pp.

[17]Harriet U. Andrews, "Home Training for Deaf Children," Volta Review, 19:145-173, 1917.

[18]Cora Kinzie and Rose Kinzie, Lip Reading for Children, Grade I, 1936, p. 2 (Mimeographed).

follow, the Jena method developed by Brauckmann was brought to this country. Anna Bunger introduced this method which directs the student's attention to the sensations accompanying the movements of speech.[19]

Interest in special education for the hard of hearing followed the invention of the 4-A audiometer[20] and other group audiometric devices. There was a growing awareness of the value of speechreading for the hard of hearing.

By the 1930's, individual teaching methods were well developed. Group classes in speechreading were becoming more common. The hard of hearing were taught speechreading in public school classes. Training for the very young deaf was becoming more available. Special schools were established for the education of pre-school deaf children. Many existing schools lowered their age of admittance to four years. In some cases two and three year old children were admitted. The John Tracy Clinic, founded in 1942, not only teaches the young hearing handicapped at the clinic, but it also offers a correspondence course for parents of young deaf children ages twenty months to six years. The correspondence work covers speechreading, language, sense training, acoustic training, and speech preparation.[21]

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[19]Anna M. Bunger, "On Being Converted to the Jena Method," Volta Review, 31:705, 1929.

[20]"The Deaf and the Hard of Hearing," op. cit., p. 281.

[21]Daphne Nicholson Bennet, "Home Teaching of Young Deaf Children: A Pointer in Parent Education, "The Journal of Speech and Hearing Disorders, 22:68-74, 1957.

The most recent development in speechreading education is the adaptation of motion picture techniques and television presentation to speechreading education. Motion picture methods had their beginning at Ohio State University in 1930 under Marie Mason.[22] Mason's work with motion pictures both for teaching and testing speechreading ability is in progress.

Motion pictures titled "Life Situation Films" are used by Morokvin in the total Life Situational Approach developed at the University of California. This approach teaches speechreading through the material of everyday experiences. It is applicable to children and adults.[23]

Television presentation of speechreading training was introduced at the University of Nebraska in 1956. An eight weeks experimental course was given over the educational television channel. The course included one of the Life Situational Films. The series was concluded with a test.[24]

A similar experimental kinsescope was made at the University of Wisconsin in 1957. This included a pretest of speechreading ability, a program, and a post-test. "The tests were identical, consisting of

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[22]Marie K. Mason, "A Laboratory Method of Measuring Visual Hearing Ability," Volta Review, 34:510-516, 1932.

[23]"Participation of the Hearing Impaired Child in Life Situations," Better Hearing, Spring, 1957, p. 12.

[24]Lucille Cypreansen and Jack McBride, "Lipreading Lessons on Television, Volta Review, 58:341-345, 1956.

three people giving a series of words and sentences on silent film . . . . The test was given to 178 persons, and better than 30% gain was found in the lipreading area after only a 20 minute lesson." A television series of 20 one-half hour programs will be presented over commercial television in 1957 produced by "Hear, Incorporated," a member agency of the American Hearing Society, with the cooperation of the University of Wisconsin.[25]

The development of speechreading education has progressed slowly from the fifteenth century to the present time. But the development of speechreading tests did not begin until close to the twentieth century. Along with the general interest in educational measurements, speechreading tests for school children and adults have been developed. The knowledge that speechreading training for young children should begin in infancy and receive concentrated attention in the pre-school years has gained increasing recognition from the beginning of the twentieth century to the present. Tests of speechreading aptitude, ability, and progress for this group of children have not been attempted except in informal situations.

History of Speechreading tests.

Objective tests of speechreading ability made their appearance during the period of great growth and development of tests and

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[25]Edward F. Crawley, "Television and the Hearing Handicapped," Hearing News, 26:3-4, 1958.

measurements which took place during the twentieth century in the United States and Europe. Although tests of learning had existed for many centuries, it was not until the twentieth century that scientific methods were applied to the construction and interpretation of tests covering nearly every measurable activity of the human mind. To tests of learning were added tests of personality, aptitude, and performance as well as achievement in many fields of human activity. The period from 1917 to 1926 was one of rapid expansion for educational measurements.[26] Educators of the deaf were quick to see the value of applying the new principles of tests and measurements to education programs for the deaf. Some of the earliest investigations in educational testing were done in schools for the deaf.[27] It has become more practical to test speechreading ability with a standard test because speechreading teaching methods have become less rigidly defined by different teaching systems. A gradual change in the philosophy of speechreading education has taken place. Teachers of speechreading have found that they can take the features from various systems which they find most useful and combine them in their own approach. In this way, emphasis on one phase of speechreading, such as kinesthesis or articulation, to the

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[26]Wayne Wrightstone, Joseph Justman, and Irving Robbins, Evaluation in Modern Education (New York: American Book Co., 1956), p. 4.

[27]Irene V. Boshler, "Mental Tests", Volta Review, 20:193-195, 1918.

exclusion of other phases does not often occur. New ideas in speechreading are not presented as a new system, but merely as additional means of teaching speechreading. The Ewings state, "The vital principle is to make your mind reach the student's; never take a method and swallow it whole but go on your own convictions."[28]

Speechreading tests in the literature

(1) H. D. Kitson's speechreading aptitude test. Noting the differences of ability among speechreaders, Kitson[29] concluded that there must be a specific combination of mental abilities at the basis of speechreading. He proposed to determine, by scientific means, the components of the "natural bent" for speechreading. First, he attempted to select a group of superior speechreaders by means of a speechreading ability test. Secondly, he studied the selected group to isolate their common characteristics. Kitson hoped to find a cluster of traits basic to superior speechreading ability. By isolating these characteristics, he planned to construct a speechreading aptitude test for predicting a student's success under speechreading instruction. In Kitson's investigation, the construction of a speechreading achievement test was only incidental to his central problem. Kitson developed a test series intended to simulate actual speechreading situations. The students were

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[28]V. E. Ellis, "Lipreading at Northwestern", Volta Review, 52:26, 1950.

[29]Kitson, op. cit., p. 472.

ranked according to the ease with which they learned speechreading and according to their standing on the tests. Tachistoscopic tests were made to determine the relationship of synthetic and analytic types of perception to speechreading ability. Kitson believed that synthetic ability was important for speechreading success.[30] The speechreading achievement test used in this experimental work was not described in the literature.

2) Edmund S. Conklin's method for determining relative skill in speechreading. Conklin's[31] important contribution to the development of speechreading testing was his realization that a measure of speechreading ability must be objective. He felt that it was necessary to provide a standard for judging pupil progress. He recognized the difficulties a teacher has in estimating the skill of pupils. When judging a pupil's speechreading ability, other skills and attributes come to mind such as interest, aptitude, mental ability, practice, and skill in articulation. Conklin felt that a standardized test should be developed to apply to students outside of a teacher's own class.[32] This was a departure from the thinking of his day that speechreading instruction should be done within a system and should be

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[30] Kitson, Ibid.

[31] Edmund S. Conklin, "A Method for Determination of Relative Skill in Lip Reading," Volta Review, 19:216-219, 1917.

[32] Conklin, op. cit., p. 216.

judged by the standards of that system.

Conklin's test was composed of a selected list of consonants, words, and sentences spoken to small groups of pupils.[33] The material was composed of simple words using all the sounds of the English language. Ten of the sentences used were selected from Nitchie's manual and the other ten were given by classroom teachers as samples of the sentences most commonly used in class work.[34]

The test was given to pupils, never more than four at a time, seated on one side of a long table with their backs to the light. The tester stood about 12 feet from the pupils, facing them in full light. Each consonant, word, and sentence was spoken to the pupils three times. They wrote down upon prepared blanks what they thought the speaker said. The scoring method gave one point for each correct sentence. It can be seen that this test, like most of its followers, required a fair degree of writing ability from the pupils tested. This is the case even though Conklin intended the test to include young pupils. He explains the inclusion of consonants in the test in these words:

> The very youngest pupils might not yet have acquired the ability to read words and yet, because of their ability to read a few of the lip movements ought not to be graded zero.[35]

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[33] Ibid.

[34] Ibid., p. 218.

[35] Conklin, op. cit., p. 218.

Most educators of the deaf would not begin a child's speechreading experience by meaningless consonant drill, but rather would emphasize natural language. A child trained in speechreading should be able to understand speech before he learns to write.

In spite of certain defects in Conklin's test, the realization that an objective and accurate test would be one which could be used under any system of speechreading training was a significant contribution. Conklin understood that his test was only a beginning, and he felt that by much testing, the material could be found which would best serve as a standard test by which achievement of different grades and schools could be measured. A Conklin suggested,". . . perhaps even the relative merit of different methods of teaching could be detected."[36]

3) Martha Bruhn's speechreading test suggestions. Bruhn administered the Conklin test to her adult pupils. She concluded that due to differences in teaching methods used by herself and Conklin, a different type of test would be desirable. She proposed a test based on the syllable approach of speechreading. Bruhn stated that a speechreading test should be constructed with three considerations in mind: (1) deaf versus the deafened, (2) syllable versus sentence learning, and (3) age differences.[37]

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[36]Conklin, op. cit., p. 219.

[37]Martha E. Bruhn, "Relative Skill in Lip-Reading," Volta Review, 19:220-222, 1917.

4) Edward Nitchie's speechreading test proposals. Nitchie replied to Conklin's proposal,

> I have tried to make it clear in my articles for The Volta Review that success in lip-reading is even more fundamentally based upon mind training than upon eye training. Mr. Conklin's tests are purely for the capacity of the eyes. . . . I think that a test with sounds pronounced individually by themselves, apart from any connecting words, is not a real test of lip-reading skill.[38]

Nitchie reported that he had been testing his pupils for years and had not found a satisfactory method. "I have come to the conclusion that there are no lipreading tests which can be used to give exact results in determining pupil's skill in reading the lips."[39] However, Nitchie expressed a belief that the problem of testing speechreading should not be abondoned.

> I feel that every effort made to solve the problem is a step forward. . . . The great value to be secured from a satisfactory test of this kind lies not only in determining the relative skill of the different stages of his work. If this could be done with mathematical accuracy, it would be of inestimable value in enabling the teacher to determine just what methods are especially applicable in each case.[40]

Nitchie was working on a test of speechreading ability for adults at the time of his death.[41]

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[38] Edward B. Nitchie, "Tests for Determining Skill in Lip-Reading," Volta Review, 19:222-223, 1917.

[39] Nitchie, op. cit., p. 222.

[40] Ibid.

[41] Elizabeth Helm Nitchie, letter, New York, July 26, 1957.

5) National Research Council testing program carried out by Rudolph Pintner, Herbert Day, and Irving Fusfeld. Tests of speech-reading prepared by Day and Fusfeld were administered to intermediate pupils in the residential and day schools for the deaf in the United States. This was part of a survey of schools for the deaf made by the National Research Council in 1929.[42] The survey included tests of speech, speechreading, and hearing as well as a survey of school administration.

The speechreading tests consisted of four similar sets of ten sentences which were read to the pupils in groups. They were instructed to write down exactly what they could read from the lips. One set was read by the teacher and the second set by the field agent conducting they survey. Pintner considered this survey to be the first attempt at objective measurement of the speech and speechreading abilities of the deaf. Pintner states,

> . . . . So far, no adequate means have been devised in order to measure achievements in these two fields. The difficulty of constructing objective measures of achievement is obvious. A standard objective test of lip reading must be one that can be presented to all children under exactly the same conditions. The same

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[42] Rudolph Pintner, "Speech and Speechreading Tests for the Deaf," Journal of Applied Psychology, 13:220-225.

> words or sentences spoken by different people vary too much to be considered objective. It would seem as if a standardized series of moving pictures of various faces speaking standardized sentences or paragraphs might form a possible scale for lip reading ability.[43]

6) H. Gopfert and P. Goldman, experimental tests of speechreading ability. Gopfert used lists of vowels, consonants, words and sentences for testing speechreading ability in his work with the deafened soldiers and hearing subjects. The material was read to the students who wrote down what they could see. He concluded that for speechreading, the natural method of learning is preferable and the synthetic type of attention should predominate. At the same time, there should be somethink of the analytic type of mind which grasps details. Gopfert made experiments to determine the importance of factors involved in speechreading such as familiarity of context, meaning context, and length of words. Goldman continued with Gopfert's experiments. He used lists of words and sentences for tests of speechreading achievement.[44]

7) Carl W. Aretz, speechreading tests for normal hearing children. As a study on hearing and the school child, Aretz constructed a test of speechreading ability to determine if there was any measureable ability in speechreading among children who had not been instructed in

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[43] Rudolph Pintner, Mildred Stanton, and Jon Eisenson, Psychology of the Physically Handicapped (New York: F. S. Crofts and Co., 1941), p. 65.

[44] Heider and Heider, op. cit., p. 149.

speechreading.[45] The test was composed of three parts: Part A was designed to contain words chosen from a restricted field. This consisted of numbers one through ten spoken in random order; Part B of the test consisted of ten simple words and the third part of the test was ten questions each of which could be answered with one word. Aretz matched two groups of normal and defective hearing children. He concluded that the better the understanding of language and abstract thinking, the better was the speechreading performance.[46]

8) Marie K. Mason, tests of visual hearing. Mason's use of motion pictures for speechreading instruction led her to use motion pictures for testing. The material which she used for testing was composed of simple monosyllabic words for consonant and vowel articulation. She felt that the connected sentence was not suitable for test material because of the accompanying facial expression which she said was a strong factor in revealing a speaker's thought. Her test of twenty-four words was scored on the basis of word accuracy, initial consonant accuracy and credit was given for homophenous substitutions. She concluded that tests were a useful part of the program and should be given periodically as a regular part of the instruction.[47]

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[45] Waldman et. al., op. cit., pp. 179-189.

[46] Waldman et. al., pp. 179-189.

[47] Mason, op. cit., p. 512.

Mason made the following suggestions for objectives in the construction of speechreading test:

(1) Comprehensiveness in scope

(2) Elimination of homophenes (unless with specific intent)

(3) Abolishment of the rule 'all right' or 'all wrong'

(4) To test accuracy and precision of student performances, i. e., to use a concrete scale of measurement

(5) Ease, speed, and accuracy of scoring

(6) Papers may be scored by anyone

(7) Scoring should be automatic.[48]

9) Clarke School studies in speechreading by Grace Moore Heider and Fritz Heider. The motion picture method of teaching speechreading developed by Morokovin and Moore at the University of California was given a trial by the Heiders.[49] Their investigations were done under the direction of Koffka at the research department of Clarke School for the Deaf from 1940 to 1945. Mrs. Heider explains the studies,

> The progress made in the future will depend to a large extent upon the ever increasing use of scientific experiments and application of the findings to the classroom. . . . We based our study of lip reading on a motion picture test which we check with the teacher's estimate of lip reading ability. . . . This means that lip reading involves some very special problems. To

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[48] Marie K. Mason, "Objective Scoring in Tests of Visual Hearing," Volta Review, 39:576-581, 1937.

[49] Heider and Heider, op. cit., 153 pp.

> equalize the great individual differences in lip reading achievement we need an analysis of lip reading problems in individual children and the adaptation of method to meet the special needs of the child.[50]

The results of three motion picture tests of speechreading given by the Heiders over a period of five years were studied. The Heiders related speechreading achievement, as they measure it, to factors such as age and years of training. Three different speechreading tests were used. Test II was developed from the experience gained in giving Test I, and it was presented four years later. The first test consisted of fifteen unrelated nouns, fifteen meaningless phonetic combinations, fifteen names of animals, fifteen unrelated sentences, and ten sentences about simple action pictures. The pictures were shown to the children before the presentation of these sentences.

Test II consisted of thirty names of animals, thirty unrelated nouns, thirty unrelated sentences, and two stories of about 150 words each. Each story was given twice, then the children had to reproduce it in writing.[51]

Test III included the material of Test II except that the names of the animals were omitted and the stories given a different way. For this test, the children wrote each sentence as it was given.

The children took the motion picture test in groups. The

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[50] Heider and Heider, op. cit., p. 128.

[51] Ibid., p. 129.

material was presented in the dark, then the lights were turned on so the children could see to write. With the exception of the stories, no part of the test was repeated.[52]

The youngest children tested were seven years old, and they had been in school one and a half years. "Unfortunately we could not obtain lip-reading scores for children with less training, since ignorance of language made it impossible to find material on which to base a test."[53]

In addition to the three tests mentioned, the Heiders also gave tests of vowel and consonant recognition. From the results of these tests, it was concluded that speech reading of vowels distinguishes between good and poor speechreaders better than speechreading of consonants.[54]

10) Jean Utley's motion picture test of speechreading ability. Utley developed a battery of speechreading tests on film for testing children and adults. This test is available from the University of Illinois under the title, "How Well Can You Read Lips?" The tests include: a sentence test of common expressions and idiomatic sentences,

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[52]Heider and Heider, loc. cit.

[53]Ibid., p. 133.

[54]Ibid., p. 141.

a word test taken from Thorndike's Teachers' Word List, and a story test consisting of six stories based on interest and experiences common to the lives of children of intermediate or high school age. Each story is followed by five questions. The material is presented by a little boy, two women, and a man. The first two films are black and white and the third is in color.[55]

The test is considered to be unnecessarily long and better suited to adult speechreaders than children.[56] It can be seen from the method of administration that young children could not take the test because of the high degree of writing skill required. Utley stipulates third grade writing ability or better.[57] Deaf children are slower in the acquisition of writing skill than normal hearing children. Utley concluded from the test experiment that although the skills of word, sentence, and story recognition are interrelated, they should be measured separately for diagnostic purposes. It is Utley's opinion that the use of motion pictures is the logical culmination of the search for improved methods of teaching and testing speechreading.[58]

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[55]Utley, op. cit., p. 659.

[56]Grace Moore Heider, "The Utley Lip Reading Test," Volta Review, 49:457-458, 1947; Louis M. DeCarlo and Raymond Kataja, "An Analysis of the Utley Lipreading Test." Journal of Speech and Hearing Disorders, 16:226-240, 1951.

[57]Utley, op. cit., p. 657.

[58]Utley, loc. cit.

The Utley test is the latest important contribution to speechreading testing. Although the test applies to children of intermediate level, it is not suited to young children at a pre-reading level.

None of the tests published so far applies to hearing handicapped children at a pre-reading level. It is often necessary to make an appraisal of the language development of young deaf children before they have acquired skill in speech or writing. The purpose of this study was to develop a tool for clinical evaluation of the speechreading phase of language development. Other investigators have felt that pre-school deaf children cannot be tested for speechreading ability. This test was used with a group of acoustically handicapped children from three to seven years of age who could not be tested with the existing speechreading test techniques.

CHAPTER III

CONSTRUCTION OF THE TEST

There are no published tests of speechreading ability for hearing handicapped children at the pre-reading level. For this reason, it was necessary to construct a test on the basis of the problems encountered in testing such a group. There was no precedent to follow. The test problems which guided the form the test was to take were as follows: (1) definition of the scope of the test by establishing the test group for the experiment and the type of test subjects who will use the completed test, (2) determination of the test subject matter, including the language forms, the vocabulary, and the phonetic content of the speechreading material, and (3) development of the form of the test and testing procedures.

I. Definition of the Test Group. The Clinical Speechreading Test is intended for clinical examination of any hearing handicapped child who has not yet learned to read. The test group for the experiment was more narrowly defined.

The criteria for the test group were established after a trial test was administered to a wide range of subjects. The trial test group was composed of subjects ranging in age from one to twenty-five. This group included those with normal hearing, the hard of hearing, the deaf, and the deafened. The test behavior of these subjects was noted and the final test group was then established in terms of (1) chronological age, (2) mental age, (3) degree of hearing handicap, and (4) presence of other handicaps.

A. Mental Age. It would be easy to confuse mental ability with speechreading ability at the early levels. A speechreading test must be composed of tasks well within the mental capacity of the subjects so that mental ability will not unduly affect the speechreading score.

The relation between speechreading and intelligence is not clear. Because of the interdependence of language and mental functioning, the separation cannot be sharply made. Watts states, "Language and thought develop together so that a child's progress in language depends on a clarification of his ideas of the structure and function of things."[1]

Pintner, Day, and Fusfeld investigated the relation between speechreading and intelligence. Pintner states, ". . . after a certain level of intelligence has been reached, intelligence of the non-verbal type is not a factor in speech and speechreading. Educational attainment is however somewhat connected with speech and speechreading." Pintner, Day, and Fusfeld concluded that the relationships found in their study were much lower than they would have been if they possessed a more reliable measure of speech and speechreading and if they had measured a wider range of ability.[2]

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[1]Martha Buchman, "The Role of Language in Speech Training for the Hearing Impaired Child," Volta Review, 56:205-208, 1954; quotes A. F. Watts, The Language and Mental Development of Children (London: George G. Harrap and Co., Ltd., 1944.)

[2]Pintner, "Speech and Speech-reading Tests for the Deaf," loc. cit.

Attempts to determine the relation between general intelligence and speechreading meet the problem of finding an adequate test of intelligence for the deaf.[3] Correlations of a language function such as speechreading with intelligence scores obtained on a non-language test may be of doubtful meaning.

Non-language tests are used in most schools for the deaf. A survey of the schools for the deaf made by Hiskey showed 35 of 37 schools reporting used intelligence tests. These were non-verbal type tests, the most frequently reported of which was the Grace Arthur Performance Scale, used by thirteen schools. The Chicago Non-Verbal and the Goodenough Draw-A-Man tests were each listed by seven schools.[4]

Hiskey believed that a non-verbal test for the deaf should be especially constructed to meet their special problems. He constructed and standardized the Nebraska Hiskey Test to fill this need. By Hiskey's scale, deaf children are compared with other deaf pupils of the same age and grade rather than with hearing children.[5]

Conversely, some educators of the deaf consider it of importance to compare scores of deaf children with those of hearing children since the ultimate aim is the preparation of the deaf child to fit into a hearing environment.[6]

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[3]Heider and Heider, op. cit., p. 148.

[4]Marshall S. Hiskey, "Testing The Young Deaf Child," American Annals of the Deaf, 32:201-208.

[5]Ibid.

[6]Ibid.

To establish an estimated mental level of the test subjects for the Clinical Speechreading Test, the Goodenough Draw-A-Man Intelligence Test was used.[7] This test is a non-verbal test which was standardized on normal hearing children, but is considered of value in testing deaf children as well. Subjects for the Clinical Speechreading Test whose tested mental age fell below three years were not included in the final test data. It was not intended that the Goodenough test provide exact I. Q.'s of the test subjects, but only indicate that each subject was capable of performing most of the test items provided he could speechread the given material.

The Goodenough test has been used with groups of deaf children by Goodenough and others. Goodenough and Shirley state their conclusion:

> On the Goodenough test deaf children age for age, are somewhat below the standards of hearing children who are making normal progress in school. On the Pintner test they average very close to Pintner's standards for hearing children and much above the median score for deaf children in the national survey. The reason for these discrepencies is not apparent.

The median I. Q. on the Pintner test was 98.4 and the median I. Q. on the Goodenough test was 87.7.[8]

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[7] F. L. Goodenough and M. Shirley, "A Survey of the Deaf Children in Minnesota Schools," American Annals of the Deaf, 77:238-247, 1932; Edwin G. Peterson and James M. Williams, "Intelligence of Deaf Children as Measured by Drawings," American Annals of the Deaf, 75:273-290, 1930; Verdry Vaughn, "A Study of the Value of Certain Tests in Predicting Success in Speech Reading, (unpublished Master's thesis, the University of Oklahoma, Norman, Oklahoma, 1954), 43 pp.

[8] Goodenough and Shirley, loc. cit.

Peterson and Williams characterize the Goodenough tests in its application to deaf children as follows:

(1) It utilizes nothing but a child's simple drawing of a man.

(2) It is accordingly non-verbal.

(3) It requires no more than 10 minutes for testing an entire class, plus about 2 minutes per child for scoring.

(4) It is useful chiefly with children from M. A. 4 to M. A. 10.

(5) For separate age groups in the same range it yields an average correlation of .76 with the Stanford revision of the Binet scale for normal hearing children. Drawings from 3,593 children ranging in age from 4 to 10 were used in the final standardization.

To arrive at a speechreading score on the Clinical Speechreading Test which was not dependant on a high level of intelligence, the children had to possess at least a minimum mental level of three, and the test items themselves had to be simple and within the mental ability of the test group. From the test results (see Chapter V), it can be seen that a deaf child with a mental age of six years can perform all the test items through speechreading. Another child in the test group with a mental age of four years and six months was able to achieve the rank of 14 out of 26 subjects. Her score was 36 and the average score of the group was 37. It is then possible for a child with a mental age of four years and six months to earn an average score on the Clinical Speechreading Test.

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[9]Peterson and Williams, loc. cit.

The means which was used to keep the test items simple was to compare the possible test questions with developmental scales and intelligence tests for children. Only those speechreading items were retained in the test which were comparable to developmental and intelligence items at a level of five years or younger. The language items were confined to the youngest levels practical for the test. The table of comparisons of the speechreading items with other scales is given at the end of this chapter.

B. Chronological Age. The group of children to which the test was directed ranges in age from one year to 9 years 10 months. After nine years of age, a deaf child is usually enrolled in the primary department of a school for the deaf and will be able to respond to speechreading tests which require speech and/or writing ability. Parents usually seek help for their hearing handicapped children when speech fails to develop some time after the first year of life. Hearing handicapped children examined in a clinic or seen at schools for the deaf in the pre-school years will usually fall in the age range of two to seven. This was the age group to which the test was originally directed.

After the trial speechreading test of the experiment was administered, it was found that a single test could not apply to such a broad range of ability. It was decided to raise the lower limits to three years and the upper limit to nine.

C. Degree of Hearing Handicap. The usual subjects for a test of speechreading ability would be those children with any degree of hearing

impairment severe enough to interfere with the normal development of speech.

For purposes of this experiment, only those children classified as deaf were used. These children lost their hearing before they developed speech. The subjects used had a loss of 50%[10] or more in both ears according to school records. These subjects had little or no speech.

D. Presence of Other Handicaps. The only children not included in the test group because of other handicaps were those with visual losses which were severe enough to make speechreading difficult. These vision problems were noted on the school record. Other multiple handicapped children were not excluded.

Summary of Criteria for the Test Group.

The test subjects were between the ages of three and nine. They showed a mental age of at least three years as tested by the Goodenough Draw-A-Man Intelligence Test. The hearing loss was at least 50% in both ears. Children with uncorrected visual difficulties were excluded.

These criteria applied only to the experimental group. Children who in one way or another deviate from these criteria can be tested with the speechreading test, but were not included in the test sample.

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[10]The percentage of loss as used here refers to the amount of hearing loss as calculated at the New Mexico State School for the Deaf at Santa Fe, New Mexico.

II. Determination of the Test Subject Matter.

A. Language. Before any attempt was made to construct test questions, it was necessary to study the language used by young hearing handicapped children.

A study was made of how language is taught to the deaf and the place of speechreading in their language development. The American Association for the Deaf Committee Report states,

> Language is the greatest of the deaf child's problems. Speech Reading is one of the tools by which he acquires language. Speech Reading and language are not separable. The child's progress in each depends upon successful integration.[11]

Teaching speechreading and other language skills by natural methods rather than formal training is the accepted method in most oral schools.[12] The vocabulary taught is composed of the natural simple words one uses with a child. The vocabulary evolves out of the happenings of the day. It is tied in with personal meaning and grows out of a child's activities.[13] Through this approach, speechreading is a part of every experience of the child. "Real conversation is essential to the child's language growth. . . . Complete sentences uttered in connection with a given situation are as easily understood by the young deaf child as single words and if he

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[11] "Speechreading in Schools for the Deaf", An Association Committee Report, Volta Review, 44:614, 1942.

[12] New, op. cit., p. 56.

[13] Buchman, op. cit., p. 217.

sees them often enough in the same relationship he eventually learns to lipread them objectively."[14]

Complete sentences were used throughout the Clinical Speechreading Test in this problem because in the natural approach to speechreading training complete sentences are used.

In the proposed speechreading test, nouns are more numerous than other parts of speech. Lassman discusses the parts of speech as they are taught at John Tracy Clinic.

> The young child's first introduction to lipreading generally comes through sense training exercises, primary of which are those connected with the matching of objects. Hence the first words in lipreading are most naturally the nouns, names of those objects.[15]

Verbs are used in the last part of the Clinical Speechreading test. The verbs used are of the type suggested by Lassman and other teachers of deaf children. "Action verbs such as bow, run, fall, jump, walk, etc. are used in the first lipreading and speech lessons on verbs." Simple action verbs and verbs related to a child's daily routines were used in the test. However, some of the verbs often taught in schools for the deaf were omitted from the test because of their artificiality. The verbs, "fall" and "bow" are suitable test material only for those children who are receiving formal speechreading training.

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[14]Grace Lassman, Language for the Preschool Deaf Child (New York: Grune and Stratton, 1950), p. 35.

[15]Ibid., p. 122.

Children learning speechreading in the natural situations of home would learn different commands. Some of these might be, "Go to bed", "Eat your dinner", "Put on your shoes", and "Take a bath."

Lassman discusses color names for speechreading.

> The first colors for lipreading would depend somewhat on the child's preferences but more upon which color names look different in speech. Blue and yellow might be the first ones. Although colors are used in phrases and sentences in real situations throughout each day, the specific lesson on color adjectives from the first few weeks, possibly months, would be concerned with individual words.[16]

In the Clinical Speechreading Test, colors were presented in pairs. The question took the form of a sentence, but not as terms descriptive of other objects. The pairs were of colors having a different appearance on the face. Other adjectives used in the tests were "big" and "little".

The use of prepositions in the Clinical Speechreading Test was confined to the words, "to," "on," and "in." This was done because work with prepositions at the early levels of deaf training is given only in relation to nouns and verbs as incidental experience.[17]

B. Vocabulary. Because of the severe delay in the vocabulary development among deaf children, the vocabulary chosen for the Clinical Speechreading Test was very basic. The vocabulary was selected on a tentative basis from observation of young children, both normal and

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[16] Lassman, op. cit., p. 130.

[17] Lassman, op. cit., p. 140.

deaf. The "Language Outline" used at Central Institute for the Deaf[18] was studied before making a vocabulary list to be employed in forming the test questions. This tentative list was checked with the following authorities:

(1) Ernest Horn, "The Commonest Words in the Spoken Vocabulary of Children Up to and Including Six Years of Age" The Twenty Fourth Yearbook of the National Society for the Study of Education, 1925.

(2) Marie Hughes, Teaching a Standard English Vocabulary With Initial Reading Instruction (Las Cruces, New Mexico: Bronson Printing Company, 1932), 177 pp.

(3) Kindergarten Union Child Study Committee, A Study of the Vocabulary of Children Before Entering the First Grade (Baltimore, 1928,) 36 pp.

(4) Henry Rinsland, A Basic Vocabulary of Elementary School Children (New York City: The Macmillan Company, 1945) pp. 24-636.

(5) Edward L. Thorndike, A Teacher's Word Book of the Twenty Thousand Words Most Frequently and Widely Found in General Reading for Children and Young People (New York: Bureau of Publications, Teachers College, Columbia University, 1932), 182 pp.

The vocabulary check is given on pages [48] to [52].

The size of the average comprehension vocabulary of pre-school deaf children has been estimated from between 25[19] to approximately 400[20] words. The vocabulary development of deaf children is severely

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[19] Bessie Pugh, "The Speech Vocabulary of Young Deaf Children," Volta Review, 48:267, 1946.

[20] Marni Lauritsen Groff, "An Analysis of the First Year Vocabularies of Public Residential Schools for the Deaf in the United States," Volta Review, 49:304-314, 1947.

TABLE I
VOCABULARY OF THE CLINICAL SPEECHREADING TEST COMPARED WITH FIVE VOCABULARY LISTS OF THE FIRST ONE THOUSAND WORDS USED BY CHILDREN

TEST WORD	I American Annals of the Deaf	II Thorndike	III New Mex.	IV Rinsland	V Kindergarten Union
1. show	X	X	X		X
2. me	X	X	X	X	X
3. the	X	X	X	X	X
4. fish	X	X	X	X	X
5. ball	X	X	X	X	X
6. car	X	X	X	X	X
7. bow	X	X	X	X	X
8. top	X	X	X	X	X
9. gun	X		X		X
10. chair	X	X	X	X	X
11. airplane	X		X	X	X
12. toothbrush	X		X	X	X
13. bell		X	X	X	X
14. watch	X	X	(verb)	X	X
15. cookies	X		X	X	X
16. table	X	X	X	X	X
17. comb	X		X		X
18. bus	X	X	X	X	X

TEST WORD					
1. ship	X				
2. me	X				
3. the	X				
4. flab	X				
5. bell	X				
6. car	X				
7. bow	X				
8. top	X				
9. gun	X				
10. chair	X				
11. airplane	X				
12. toothbrush	X				
13. bell	X				
14. watch	X				
15. cookies	X				
16. table	X				
17. comb	X				
18. bus	X				

(TABLE I CONTINUED)

	I	II	III	IV	V
19. dog	X	X	X	X	X
20. button	X		X	X	
21. this	X	X	X	X	X
22. is	X	X	X	X	X
23. my	X	X	X	X	
24. face	X		X	X	
25. where	X	X	X	X	X
26. your	X	X	X	X	X
27. arm	X	X	X	X	X
28. mouth	X	X	X	X	X
29. eyes	X	X	X	X	X
30. teeth	X		X	X	
31. nose	X	X	X	X	X
32. thumb	X		X		
33. feet	X	X	X	X	X
34. see	X	X	X	X	X
35. baby	X	X	X	X	X
36. mother	X		X	mama	
37. daddy	father		X	X	X
38. boy	X			X	
39. bird	X	X	X	X	X
40. dog	X	X	X	X	X
41. cow	X	X	X	X	X
42. point			X	X	
43. to	X		X	X	X

(TABLE I CONTINUED)

		I	II	III	IV	V
44.	T. V. (or television)					
45.	boat	X	X	X	X	X
46.	man	X	X	X	X	X
47.	hose (or house)	X	X	X	X	X
48.	one			X	X	
49.	four	X	X	X	X	X
50.	two	X	X	X	X	X
51.	five			X	X	
52.	yellow	X	X	X	X	X
53.	blue	X	X	X	X	X
54.	black	X	X	X	X	X
55.	white	X	X	X	X	X
56.	red	X	X	X	X	X
57.	brown	X	X	X	X	X
58.	give	X	X	X	X	X
59.	pig	X		X	X	
60.	horse	X	X	X	X	X
61.	chicken	X	X	X	X	
62.	put	X	X	X	X	X
63.	on	X	X	X	X	X
64.	shoes	X	X	X	X	X
65.	pants	X		X		
66.	shirt	X		X		
67.	hat	X		X	X	

44.	S. V. (or Varicella)		X			
45.	Dent.	X				
46.	Gen.	X				
47.	Bone (or Tuber)	X		X		
48.	Ost.					
49.	Ophr.					
50.	Sac.					
51.	Ecz.					
52.	Yellow					
53.	Blis.	X				
54.	Black					
55.	White					
56.	Red	X				
57.	Urtic.	X				
58.	Glan.					
59.	Pal.					
60.	Nerve					
61.	Circles					
62.	Pust.					
63.	Ec.					
64.	Ulcer.					
65.	Part.					
66.	Skin					
67.	Int.					

(TABLE I CONTINUED)

	I	II	III	IV	V
68. coat	X	X	X	X	X
69. big	X	X	X	X	X
70. little	X			X	X
71. apple	X	X		X	X
72. water	X	X			X
73. pie	X		X	X	
74. orange	X		X	X	
75. milk	X	X	X	X	X
76. bread	X	X	X	X	X
77. banana	X		X	X	
78. meat	X		X	X	
79. candy	X		X	X	
80. spoon	X		X	X	
81. cup	X		X	X	
82. bed	X	X	X	X	X
83. can	X	X	X	X	X
84. walk	X	X	X	X	X
85. hop	X		X	X	X
86. run	X	X	X	X	X
87. jump	X	X	X	X	X
88. shut	X	X	X	X	X
89. door	X		X	X	
90. who	X	X	X	X	X
91. eats	X	X	X	X	X
92. dinner	X	X	X	X	X

(TABLE I CONTINUED)

	I	II	III	IV	V
93. which	X		X	X	X
94. rope	X	X	X	X	
95. sleeps	X		X	X	
96. takes	X		X	X	
97. a	X		X		X
98. bath	X		X	X	
99. reads	X	X	X	X	X
100. book	X		X	X	X
101. her / his	X	X	X	X	X
102. in	X	X	X	X	X

93.						
94.						
95.						
96.						
97.						
98.						
99.						
100.						
101.						
102.						

retarded when measured against the progress of normal hearing children. The University of Iowa Studies in Child Welfare[21] report the following as the average vocabularies of use for normal hearing children:

AGE	WORDS
2-0	272
2-6	446
3-0	896
3-6	1,222
4-0	1,540
4-6	1,870
5-0	2,072

It can be seen from these figures that the average hearing child of school age has a usage vocabulary of better than 2,000 words.

The final vocabulary list for the test given in this paper was composed of words which appear in the first one thousand words on the vocabulary studies cited. In addition, the words chosen could be visually represented with material attractive to young children and practical for the test situation.

C. Phonetic Content. A basic problem for the user of speech-

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[21]Frieda Kiefer Merry and Ralph Vickers Merry, The First Two Decades of Life (New York: Harper Brothers, 1950) 600 pp. quoting M. E. Smith, "An Investigation of the Development of the Sentence and the Extent of Vocabulary in Young Children," University of Iowa Studies in Child Welfare, 1926, 3:184.

reading is the varying visibility of the movements of different speech sounds. Certain words and phrases are very difficult to perceive by means of speechreading because of two factors: (1) some sounds are obscure or even invisible and (2) many words appear alike to the eye of the speechreader. The sounds of speech have been divided into homophenous groups, that is groups of words which look alike on the lips. Examples of the homophenous sounds are the sounds (p), (b), and (m); also the pair (f) and (v) are homophenous.[22]

No specific number of different speech sounds was used in the Clinical Speechreading Test; however, an effort was made to include all the sounds of speech and to avoid a heavy concentration in any one homophenous group. A check list was made of the sounds of American Speech as they appear in the test (See pages 55-69). It can be seen from the check list that the labial and labio-dental sounds appear with greater frequency than other types of sounds. These are easily visible and may be considered easier for children to identify. A method for determining the relative difficulty of speechreading material based on the visibility value of the speech sounds contained in a sentence has been developed under the Works Projects Administration.[23]

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[22] Pintner, Day, and Fusfeld, op. cit., p. 239.

[23] New Aids and Materials for Teaching Lip Reading, loc. cit.

TABLE II

REPRESENTATION OF CONSONANTS WHICH APPEAR IN THE CLINICAL SPEECHREADING TEST WORDS

TEST WORD	CONSONANTS								
	h	p	b	m	t	d	n	l	f
1. show				X					
2. me									
3. the									X
4. fish			X					X	
5. ball									
6. car			X						
7. bow		X			X				
8. top							X		
9. gun									
10. chair							X	X	
11. airplane		X							
12. toothbrush			X		X				
13. bell			X					X	
14. watch									
15. cookies									
16. table			X		X			X	
17. comb				X					
18. bus			X						
19. dog						X			
20. button			X		X		X		
21. this									
22. is									
23. my				X					

| | | |

(TABLE II CONTINUED)

	v	k	ʒ	ʤ	s	z	θ	ð	ʃ
1. show									x
2. me								x	
3. the									x
4. fish									
5. ball									
6. car		x							
7. bow									
8. top			x						
9. gun									
10. chair									
11. airplane							x		x
12. toothbrush									
13. bell									
14. watch									
15. cookies		x							
16. table		x							
17. comb					x				
18. bus			x						
19. dog									
20. button					x			x	
21. this						x			
22. is									
23. my									

(TABLE II CONTINUED)

	tʃ	dʒ	ʒ	r	ʃ	w	m
1. show							
2. me							
3. the							
4. fish							
5. ball							
6. car				X			
7. bow							
8. top							
9. gun							
10. chair	X			X			
11. airplane				X			
12. toothbrush							
13. bell							
14. watch	X					X	
15. cookies							
16. table							
17. comb							
18. bus							
19. dog							
20. button							
21. this							
22. is							
23. my							

| | | |

(TABLE II CONTINUED)

	h	p	b	m	t	d	n	l	f
24. face									X
25. where									
26. year									
27. arm				X					
28. mouth				X					
29. eyes									
30. teeth					X				
31. nose							X		
32. thumb				X					
33. feet									X
34. see									
35. baby			X						
36. mother				X					
37. daddy						X			
38. boy			X						
39. bird			X			X			
40. dog						X			
41. cow									
42. point		X			X		X		
43. to					X				
44. T. V. (or television)					X		X	X	
45. hunt		X			X				
46. man				X			X		

(TABLE II CONTINUED)

	v	k	g	ŋ	s	z	θ	ð	ʃ
24. face					x				
25. where									
26. your									
27. arm									
28. mouth							x		
29. eyes						x			
30. teeth							x		
31. nose						x			
32. thumb							x		
33. feet									
34. see					x				
35. baby									
36. mother								x	
37. daddy									
38. boy									
39. bird									
40. dog			x						
41. cow		x							
42. point									
43. to									
44. T. V. (or television)	x								
45. boat									
46. man									

24.											
25.											
26.											
27.											
28.											
29.											
30.											
31.											
32.											
33.											
34.											
35.											
36.											
37.											
38.											
39.											
40.											
41.											
42.											
43.											
44.											
45.											
46.											

(TABLE II CONTINUED)

	tʃ	dʒ	ʒ	r	j	w	ʍ
24. face							
25. where				x			x
26. your				x	x		
27. arm				x			
28. mouth							
29. eyes							
30. teeth							
31. nose							
32. thumb							
33. feet							
34. see							
35. baby							
36. mother							
37. daddy							
38. boy							
39. bird							
40. dog							
41. cow							
42. point							
43. to							
44. T. V. (or television)			x				
45. boat							
46. man							

24.	Гное								
25.	Убого				X				X
26.	Дело				X			X	
27.	Шит				X				
28.	Волна								
29.	Суда								
30.	Злой								
31.	Окно								
32.	Шумно								
33.	Свет								
34.	Еще								
35.	Бобр								
36.	Цепь								
37.	Дверь								
38.	Бор								
39.	Клад								
40.	Дом								
41.	Сев								
42.	Дубы								
43.	Ел								
44.	Ты, ел (от глагола)								
45.	Вода								
46.	Шит								

(TABLE II CONTINUED)

	h	p	b	m	t	d	n	l	f
47. home (or house)	X			X					
48. one							X		
49. four									X
50. two					X				
51. five									X
52. yellow								X	
53. blue			X					X	
54. black			X					X	
55. white					X				
56. red						X			
57. brown			X			X	X		
58. give									
59. pig		X							
60. horse	X								
61. chicken							X		
62. put		X			X				
63. on							X		
64. shoes									
65. pants		X			X		X		
66. shirt					X				
67. hat	X				X				
68. coat					X				
69. big			X						

(TABLE II CONTINUED)

	v	x'	g	ŋ	s	z	θ	ʒ	ʃ
47. home (or house)					X				
48. one									
49. four									
50. two									
51. five	X								
52. yellow									
53. blue									
54. black		X							
55. white									
56. red									
57. brown									
58. give	X		X						
59. pig			X						
60. horse					X				
61. chicken		X							
62. put									
63. on									
64. shoes						X			X
65. pants						X			
66. shirt									X
67. hat									
68. coat		X							
69. big			X						

(TABLE II CONTINUED)

	tʃ	dʒ	ʒ	ʍ	ʃ	w	M
47. home (or house							
48. one						×	
49. four				×			
50. two							
51. five							
52. yellow					×		
53. blue							
54. black							×
55. white							
56. red				×			
57. brown				×			
58. give							
59. pig							
60. horse				×			
61. chicken	×						
62. nut							
63. an							
64. choose							
65. pants							
66. shirt				×			
67. hat							
68. coat							
69. big							

(TABLE II CONTINUED)

	h	p	b	m	t	d	n	l	f
70. little					X			X	
71. apple		X						X	
72. water					X				
73. pie		X							
74. orange									
75. milk				X				X	
76. bread			X			X			
77. banana			X				X		
78. meat				X	X				
79. candy						X	X		
80. spoon		X					X		
81. cup		X							
82. bed			X			X			
83. can							X		
84. walk								X	
85. hop	X	X							
86. run							X		
87. jump		X		X					
88. shut					X				
89. door						X			
90. who	X								
91. eats					X				
92. dinner						X			
93. which									

(TABLE II CONTINUED)

	v	k	g	ŋ	s	z	θ	ʤ	ʃ
70. little									
71. apple									
72. water									
73. pie									
74. orange									
75. milk		X							
76. bread									
77. banana									
78. meat									
79. candy		X							
80. spoon					X				
81. cup		X							
82. bed									
83. can		X							
84. walk		X							
85. hop									
86. run									
87. jump									
88. shut									X
89. door									
90. who									
91. eats					X				
92. dinner									
93. which									

74.												
75.												
76.												
77.												
78.												
79.						X						
80.												
81.												
82.												
83.												
84.						X						
85.												
86.												
87.						X						
88.												
89.												
90.												
91.												
92.												
93.												
94.												
95.												
96.												

(TABLE II CONTINUED)

	tʃ	dʒ	ʒ	r	ʃ	w	M
70. [illegible]							
71. apple						x	
72. water							
73. pie		x		x			
74. orange							
75. milk				x			
76. bread							
77. brown							
78. meat							
79. candy							
80. spoon							
81. cup							
82. bed							
83. can						x	
84. milk							
85. hop							
86. run				x			
87. jump		x					
88. shut							
89. door				x			
90. who							
91. eats							
92. dinner							
93. which	x						x

(TABLE II CONTINUED)

	h	p	b	m	t	d	n	l	f
94. rope		x							
95. sheep		x						x	
96. taken					x				
97. a			x						
98. bath						x			
99. reads			x						
100. book									
101. her / him	x								
102. in							x		

(TABLE II CONTINUED)

	v	k	g	ŋ	s	z	θ	ð	ʃ
94. rope									
95. sleeps					X				
96. takes		X			X				
97. a									
98. bath							X		
99. reads						X			
100. book		X							
101. her / his						X			
102. in									

(TABLE II CONTINUED)

	tʃ	dʒ	ʒ	r	j	w	ʍ
94. rope				x			
95. sleeps							
96. takes							
97. a							
98. bath							
99. reads				x			
100. book							
101. her / his							
102. in							

While the chart of visibility values so computed may be useful for showing the relative difficulty of speechreading sounds in isolation, the principle of judging a sentence by its visibility alone is not valid. The difficulty of a sentence for speechreading is dependent on other factors than the actual visibility of the sounds.[24] The question of familiarity of language, interest in the subject, predictability of the material, and the context are very important in determining the success a speechreader will have in understanding speech. For this reason the visilibity scoring method was not used. However, a high percentage of the test material does have high visibility for the reason that such words are the ones most naturally spoken to deaf children. Deaf children whose parents have had guidance in speechreading training for their children will select the more easily seen words when talking to their children. For example, the use of "mamm" and "papa" are discouraged because they are homophenous words and impossible to distinguish on the face. Instead, parents use the words, "mother", and "daddy," or two other dissimilar appearing words.

III. Development of the form of the test and testing procedure. A review of the speechreading tests which have appeared in the literature was made before selecting the form for the Clinical Speechreading Test. Previous tests are of two general types: (1) Speechreading material is

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[24]Heider and Heider, op. cit., p. 149.

presented (by an individual in person or through motion pictures), and the student responds by writing answers to questions or reproducing the material in writing; (2) speechreading material is presented and the student responds orally by repeating the material or answering questions. These tests are given individually or to a group.

Speechreading tests for children who cannot read, write, or use speech easily do not appear in the literature. Schools for the deaf do not use standardized methods for appraising the speechreading of hearing handicapped children at the pre-reading level. Simmons states that at Central Institute for the Deaf, "We do not use a test for lip reading with small children but depend upon empirical judgment."[25] Lowell, of the John Tracy Clinic, says, "We do not have any regular speech reading tests for our preschool age children. We evaluate their progress from the teachers' reports, and from the vocabulary lists which they turn in".[26] Klein, the director of the Lutheran School for the Deaf, states, "We have no standard speechreading test for deaf children so young."[27] Senior Therapist Feldman of the Portland Center for Hearing

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[25]Audrey Simmons, Director Aural Rehabilitation Department, Central Institute for the Deaf, Saint Louis, Mo., letter, March 1, 1957.

[26]Edgar L. Lowell, Administrator, John Tracy Clinic, Los Angeles, California, letter, March 6, 1957.

[27]J. A. Klein, Executive Director, Lutheran School for the Deaf, Detroit, Michigan, letter, July 13, 1957.

and Speech replied to the investigator's inquiry, "I have no actual test which I use. Most of my evaluations are on quite an informal basis. I, too, use situations where the children point to items or pictures, or perform simple tasks."[28] At Clarke School for the Deaf, Hudgins, reports, "We have not attempted the development of lipreading tests for very young children as a formal device. The method you suggest, however, seems very practical and will work, I am sure. The almost universal method of teaching lipreading to small children and beginners consists of the use of pictures, toys, directions for performing tasks, etc., and I should think it would be possible to develop a standardized series of such items experimentally and make up a test battery that could be employed for the purpose of testing lipreading."[29]

Since no test of the type developed in this paper was known to the writer, no precedent could be followed. The test was developed by taking into account the special problems of testing the pre-reading hearing handicapped. These limiting factors are:

(1) Test group cannot write answers.

(2) Test Group cannot answer questions orally, except in a limited way.

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[28]Louise P. Feldman, Senior Therapist, Audiologist, Portland Center for Hearing and Speech, Inc., Portland, Oregon, letter, March 15, 1957.

[29]C. V. Hudgins, Research Department, The Clarke School for the Deaf, Northampton, Massachusetts, letter, February 27, 1957.

(3) Test group can indicate "yes," "no," and a limited number of other ideas through gesture. However, gesture language is not encouraged in oral training. The questions which could be used with yes and no answers could not cover a very broad range of ability among children.

Two other types of tasks are possible:

(1) Test group can point to pictures, objects, and living things.

(2) Test group can perform tasks including following simple directions and acting out verbs.

Both these types of responses were employed in the Clinical Speech-reading Test.

When the type of question was established the following matters of test form remained:

(1) Unit of language - the single word test question was rejected because it is not consistent with the natural method of language learning. Groups of sentences seem to be too difficult at this level. A single complete sentence was used for each test question.

(2) Length of test - it was believed that a test of twenty minutes with short rest periods and frequent changes of material would hold the child's attention and give the examiner time

enough to observe the child's speechreading behavior. A total of 103 different words were included in the test.

(3) Method of scoring - there was no attempt to weigh the questions for difficulty but the questions were placed in approximate order of difficulty. One point was given for each question correctly answered.

(4) Individual versus group testing - the chief purpose of the test was to give a clinical examiner an opportunity to observe speechreading behavior. This was best accomplished by an individual test.

(5) Personal test versus motion picture presentation - establishing and maintaining rapport with child subjects would be more difficult with a motion picture test than in a person-to-person test in which the test procedure can be varied to suit the individual. Therefore, the person-to-person situation was used.

(6) Familiar versus unfamiliar examiner - there is a difference in test results when a speechreading test is given by a stranger than when given by a familiar teacher. The children are able to

> interpret the teacher's speech better,[30] however, in most situations of clinical examination of young deaf children, the examiner will be unfamiliar. For that reason, the test experiment was made with an unfamiliar examiner.

The examiner himself is an important variable in the speech-reading test situation. In motion picture presentation this factor can be held constant. Since motion picture tests do not seem practical for young children at this stage of their development, other means of keeping the examiner's behavior standard must be used. This was done by giving detailed directions for administration as a part of the test instructions. (See pages 77, 78, 79, 80, 81, 82, and 83.)

Physical equipment and test conditions.

Test questions which could make use of attractive objects and pictures and interesting things to do were selected. At the same time the material could not be too distracting, since speechreading requires careful attention to the speaker's face.

Description of the test materials.

The thirty-five test objects and five square blocks were chosen for durability, attractiveness to children, and clarity of representation. (See Tables I, II, III, and IV) The objects were chiefly dime store toys and can be easily duplicated. The size of the objects ranges from 1½ to

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[30] Pintner, et. al., p. 221.

4½ inches in length and from flat objects to those with a height of 1-3/4 inches. The blocks used are one inch square kindergarten counting blocks of one color. The color squares are one inch squares of construction paper mounted on cardboard and coated with a clear plastic spray. The animals are scaled proportionately and are realistic representations. All test objects fit in a carrying box 4x5x11 inches. The test cards, six in number, are lettered (a) through (k). They are of white posterboard 11x8½ inches. On the cards are mounted testing pictures taken from childrens' books, magazines, and coloring books. The pictures are large enough to be easily recognizable without overcrowding the page. The cards were coated with a clear plastic spray for protection. Card e-1 and e-2 are outline drawings which show the correct placement of the paper dolls with their clothing. The doll and clothing are in an accompanying envelope. All test cards are carried in a cardboard envelope type file along with test blanks, information sheets, and completed tests.

Directions for Administration and Scoring of the Clinical Speechreading Test for Children

Introduction. The Clinical Speechreading Test should be administered in the same adaptable manner as other tests for preschool children. Test administration must allow for adjustments to meet the varying situations found in testing children. As Stutsman points out, complete rapport must be established and maintained between examiner and child or the test will not be successful. To achieve this, the examiner must adapt to the varying personalities of children.[31]

The general directions outlined by Stutsman for the Merrill-Palmer Scale, a mental test for preschool children, explains the modifications of test administration allowable with young subjects to secure optimum cooperation and response. These techniques are directly applicable to the administration of the Clinical Speechreading Test. This test is not intended to confine the examiner to an exact procedure, but rather to provide a frame work for clinical examination. Deviations from procedure as outlined in the Test Directions would be preferable to losing the child's rapport and cooperation.

Stutsman's directions read in part,

> The examiner must be able to take advantage of each

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[31] Stutsman, op. cit., p. 140-141.

> bit of curiosity or pleasure induced by a particular test to further the carefully built-up rapport. At the first sign of distaste or fatigue he must be ready to give the proper amount of encouragement to reawaken the child's interest in the test. If continuing a test is so distasteful to the child that it is likely to render the rest of the test series relatively less appealing, or if it is going to make the child antagonistic, the test should not be contined. The examiner must be able to judge when to stop urging the child to continue or complete a test. It is important that the examiner should be able to omit part of the tests and still obtain an accurate rating of the child's ability. Fatigue, resistance, and lack of interest will otherwise invalidate many an examination. It is obviously inaccurate to score refused and omitted tests indiscriminately as failures or successes. Tests that have little appeal must be introduced judiciously and cannot be introduced at exactly the same moment with different children. A series of tests which does not allow for these adjustments in the order of administration, and for refusals and omissions is unsatisfactory for use with the preschool child. Such a test is too much influenced by the variable of personality to be a trustworthy measure of intelligence.
>
> There must also be considerable leeway allowed in the conversation between the examiner and the child.[32]

After establishing rapport with the child, the examiner using the Clinical Speechreading Test should keep to the questions as given in the Test Directions. There is freedom between questions and in the order of presentation, but no variation in the actual phrasing and administration of each item. The examiner should refrain from unnecessary movements and talking which would distract the child. It is important to hold the child's attention while the examiner is giving the item for speechreading and to allow the child to rest between the items. To achieve this balance, the examiner is allowed freedom in

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[32] Ibid.

managing each child according to the situation as it arises. Do not proceed with the next question until you have the child's attention and you feel that the child understands what is expected of him. Encourage the child and praise correct responses. It is not advisable to correct an error except in cases where the child is confused about the nature of the task. The examiner must be careful not to reveal his thoughts by facial expression or gesture, for the deaf child may be quick to pick up the smallest cues from the examiner. Avoid looking at the object you are asking for in the test item. The items to be presented for speechreading are printed in capital letters in the test booklet. The test phrases should be spoken carefully and not too rapidly. The examiner should avoid exaggerated facial movements. The examiner may use a soft voice, except in the case of children with some useable hearing. The use of some voice helps to keep the facial movements natural. If you are in doubt about the child's ability to hear speech, use no voice. While presenting the phrases for speechreading, the examiner must keep his hands and body at rest. When the child's attention wanders, the examiner may use gestures, or a change of position to refocus the child's attention on the examiner's face.

The test environment. The room used for administering the speechreading test should preferably be free of all distractions with only the two tables and two chairs necessary for the test procedure. When such a room is not available, place the child so that there are as few visual distractions as possible. If it is necessary for others to be present, they should be seated out of the child's range of vision. To

administer the test, the examiner will need chairs scaled for the child's comfort, a table about three feet across which is low enough for the child to see and manipulate the test objects placed there. Examiner and subject will sit on opposite sides of the table about five feet apart. The esaminer must be seated on the child's level so that the child may easily see the examiner's face. The lighting of the test room is very important. A good source of light should fall on the face of the examiner. A non-glaring light of 15 to 20 foot candles has been recommended for speechreading classrooms.[32] The test equipment may be placed on a second small table or chair. On the testing table place only the test booklet and the objects needed for the test item in progress.

SPECIAL DEVIATIONS FROM PROCEDURE. In the course of clinical examinations of hearing handicapped children, the examiner may find children who are difficult to test within the usual testing procedure. The examiner should feel free to change the testing procedure in whatever way is necessary to obtain the best response without actually giving the child unfair advantage. An example of the changes which may be necessary would be the case of a child with a severe vision handicap. For such a child, the examiner may place the objects on the test table one at a time, permitting the child to examine each one to identify it for

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[32]Frank H. Rodin, "Lighting Problems in Lip Reading," Volta Review, 34:367, 1932.

himself so that this task of identification is not added to the burden of speechreading. When the child has satisfied himself about each object, proceed as usual.

Another type of child who requires special handling is the hyperactive child. For this child the effort of concentrating on a given task is greater than for a normal child and the examiner should allow frequent rest periods. Sometimes it helps to hold the child's hands, thus keeping him from playing with the test objects and helping the examiner hold his attention.

For any subject, normal or atypical, this test is intended as a clinical tool, and the examiner is free to change the test situation in any way which would help him obtain more information about the speechreading ability of the individual child under examination.

TEST DIRECTIONS

Attract the child's attention to your face before giving the item for speechreading. Do not extend your hand for the object until you have stopped talking. The items may be repeated four times, but not rephrased. It is not necessary for the child to carry out the exact instruction such as distinguishing between the commands "show" and "give". If a child seems to be guessing, go back to previous items and check responses. Guesses are not credited.

PART ONE Present objects on the table in front of the child in the order named in the test booklet. Remove your hands from the table and say the phrases printed in capital letters in the test booklet. Part one consists of eighteen object identifications. This part may be broken in two sections if the child tires of the similarity of the tasks.

PART TWO Place your hand on your face and say, THIS IS MY FACE. Ask the child WHERE IS YOUR FACE? SHOW ME YOUR FACE. Indicate by a nod of the head or pointing your finger that the child is to point to his own face. If the child has difficulty understanding what is expected of him, the examiner may give another demonstration with the word, HAND. Then proceed with the other body parts in items 19 through 25.

PART THREE Present test card (a). Indicate that the child is to examine the pictures. When the child's glance returns to the examiner's face, give item 26, SEE BABY? WHERE IS BABY? If the child is slow to respond, the examiner may point back and forth between the two pictures and look at the child questioningly before repeating the question. The same procedure is followed for test cards (b), (c), and (d) on items 26 through 36.

PART FOUR Place the square blocks on the table in front of the child. Say THREE. Take three blocks from the pile and place them close to you on the test table. Replace the blocks and repeat the number three. Indicate that the child is to push three blocks toward you. When the child understands the procedure, go on with items 37 to 40.

PART FIVE Place color squares before the child in this order: red, yellow, orange, blue purple. Ask for cards in this order, blue, yellow, orange, red. Replace the card after each trial. Continue questioning until you are satisfied which of the colors the child speechreads. Maximum credit is three.

PART SIX Place the miniature animals in front of the child in this order: pig, sheep, horse, chicken, cow. Present items 44 through 46. Replace the animals after each question.

PART SEVEN Lay out the doll and the clothing (except pajamas) on card e. Use the boy doll and card e-1 for boy subjects and the girl doll and card e-2 for girl subjects. The pajamas are used for demonstration. Say, PUT ON HIS (Or her) PAJAMAS. Place the pajamas on top of the doll which is fitted on the outlined card. Then return the pajamas to the table and have the child try it. Proceed with the other articles of clothing in items 47 through 51. Always replace the article on the outlined card.

PART EIGHT Place the large ball, small ball, large baby, and small baby in a row on the test table. Ask for each toy in a random order until you establish the child's understanding of the words big and little. The child must know both words to score one point on this item.

PART NINE Present card (f) to the child and allow him to examine it. Then proceed with the questions, Give items 53 through 61 in this manner.

PART TEN Place objects on the table in this order: fork, spoon, cup. Give the direction in question 62. If the child fails this item, demonstrate it carefully before going on to items 63 and 64 which are done similarly. If the child picks up one of the articles called for but doesn't know what to do next, nod approval and repeat the question.

PART ELEVEN Have the child get up and move around a little before giving items 65 through 68. Encourage the child to perform the acts called for, since subject may understand but be too shy to respond. If the item is missed, demonstrate it and have the child do it before proceeding. On item 68, lead the child to within four or five feet of the door and glance at the door before giving command.

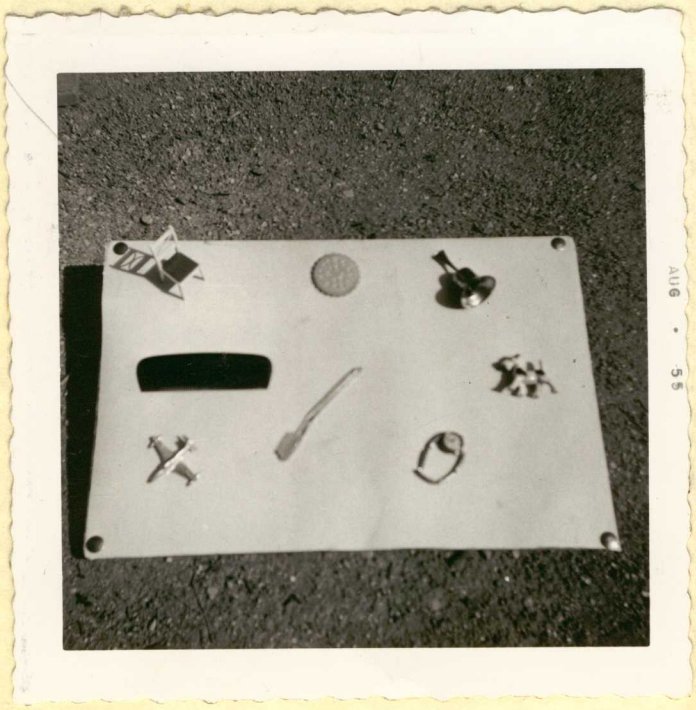
PART TWELVE These items 70 through 75 are given in the same manner as previous questions involving cards, but these require more care on the part of the examiner to distinguish understanding from guessing.

PLATE I

CLINICAL SPEECHREADING TEST MATERIALS

Test Objects:

1. fish
2. shoe
3. ball
4. car
5. top
6. bow
7. baby
8. gun



9. chair
10. comb
11. toothbrush
12. airplane
13. cookie
14. bell
15. dog
16. watch

PLATE I

CLINICAL DIAGNOSING TEST MATERIALS

Test Objects:

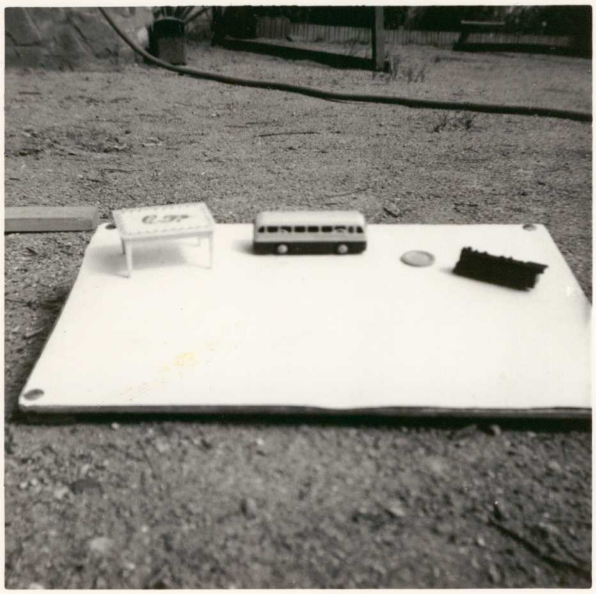
1. fish
2. shoe
3. ball
4. car
5. top
6. box
7. baby
8. gun

II

9. chair
10. comb
11. toothbrush
12. airplane
13. cookie
14. doll
15. dog
16. watch

PLATE II

CLINICAL SPEECHREADING TEST MATERIALS



Test Objects:

17. table
18. bus
19. button
20. train

21. bed
22. cup
23. counting blocks
24. large ball
    and small ball
25. large baby
    and small baby
26. spoon
27. fork

PLATE XI

CLINICAL SPEECH-READING TEST MATERIALS

Test Objects:

17. table
18. bus
19. button
20. train
21. bed
22. cup
23. counting blocks
24. large ball
and small ball
25. large baby
and small baby
26. spoon
27. fork

PLATE III

CLINICAL SPEECHREADING TEST MATERIALS

Test Objects:

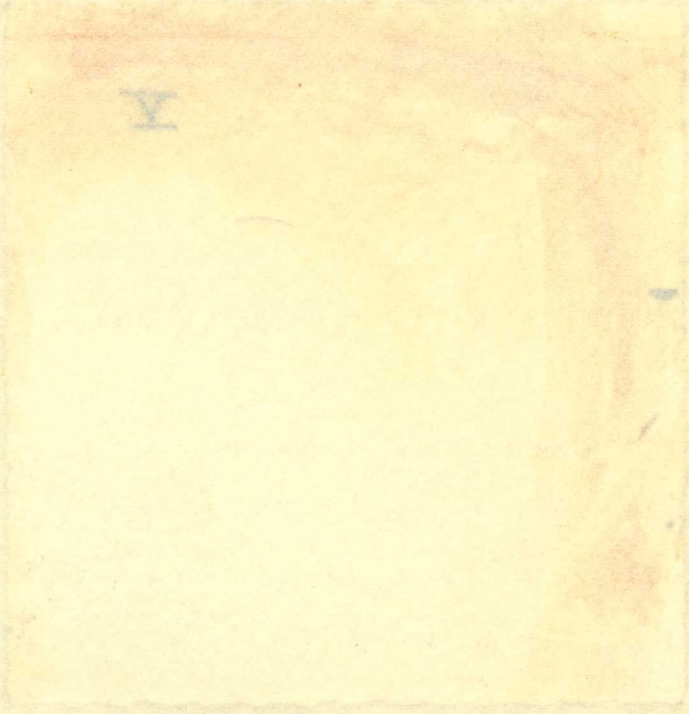
28. color squares
29. chicken
30. pig
31. lamb
32. horse

Picture Cards:

a. baby-kitten
b. family
c. animals
d. T. V., home,
boat, man

PLATE XII

CLINICAL STEREOGNOSTIC TEST MATERIALS



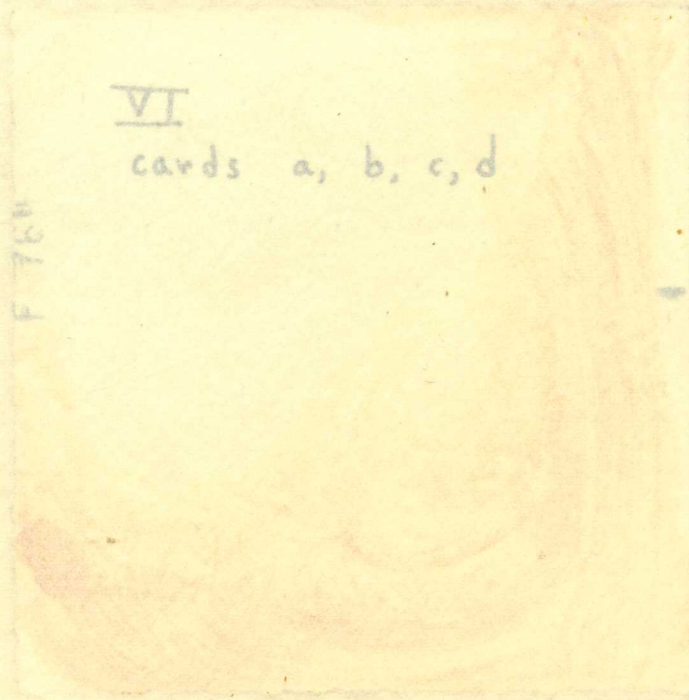
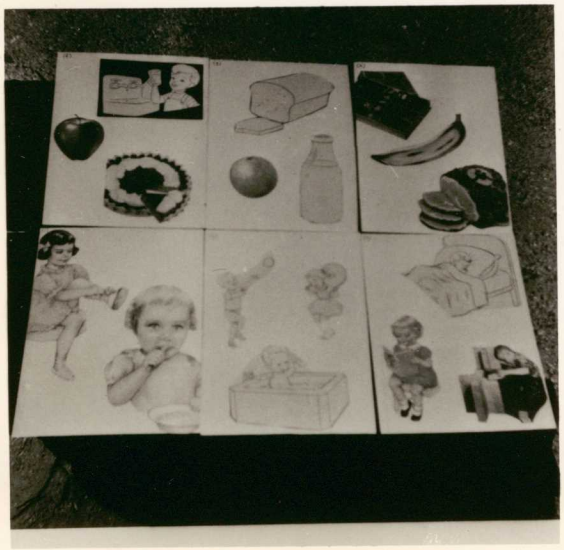


PLATE IV

CLINICAL SPEECHREADING TEST MATERIALS

Picture Cards:

e. boy doll and
girl doll
with pajamas,
hat,
coat,
shirt - dress,
pants



f. apple, water, pie

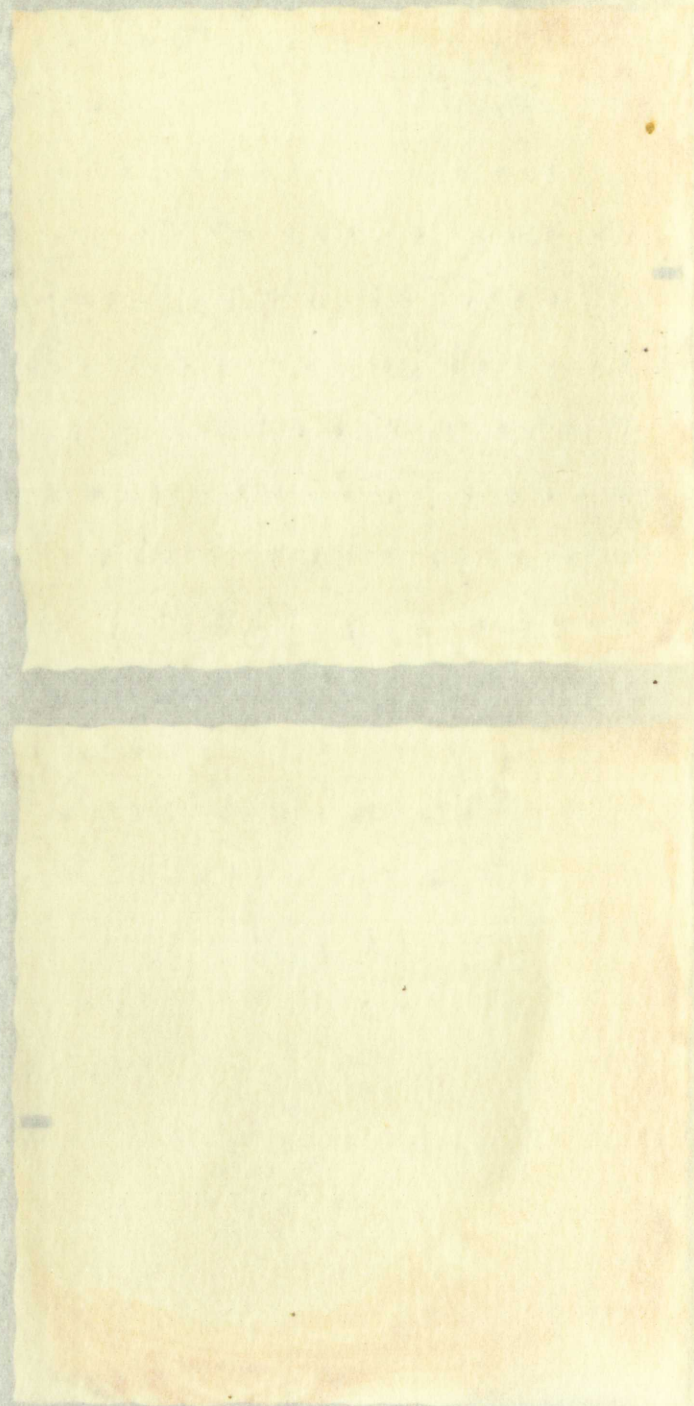
g. orange, milk, bread

h. candy, banana, meat

i. put on shoes
eat dinner

j. play ball
jump rope
take bath

k. sleep
read book,
play blocks



Clinical Speechreading Test

Information Sheet

Subject_____ Sex_____ Date_____

School_____ Grade_____ Teacher_____

Birthdate_____ Age_____

Goodenough Draw-A-Man point score_____ M.A.____ I.Q._____

Speechreading Score - Test A_____ Test B_____

Odd Item Score_____ Even Item Score _____

Comments On Validity of Test:

Rank in total test group_____

Rank in class_____

Teacher's rank in class_____
(of speechreading ability only)

Hearing Evaluation:

Comments:

CLINICAL SPEECH READING TEST FOR CHILDREN

NAME_____ DATE_____

BIRTHDATE_____ GRADE_____ AGE_____

ADMINISTRATOR_____ GOODENOUGH DRAW-A-MAN M.A._____

RESULTS: TEST A:_____ TEST B:
FAMILIAR TESTER_____
UNFAMILIAR TESTER_____

TEST A
EASY SPEECH READING WITH GESTURE

Scoring Key: ( ) Correct response to speech reading
( ) Correct response to speech reading with gesture
( ) Performs item at home in response to speech reading and/or gesture
(-) Does not perform item correctly

(These items may be given three times and again three times with gesture)

(no score) (a) PAT A CAKE. PAT A CAKE. (If no response, demonstrate.)

(no score) (b) BLOW A KISS. BLOW ME A KISS, or, GIVE ME A KISS. (if no response, demonstrate.)

_____ (1). HI _____. HELLO _____. (smile, wave. Does child respond with recognition or greeting?)

_____ (2). HOW DO YOU DO? SHAKE. (put out your hand, make hand shaking motion.)

_____ (3). WHERE IS MAMA? WHERE IS MOTHER? (use the familiar name; look around; does child look at door or in direction of mother?)

_____ (4). WHERE IS DADDY? WHERE IS FATHER? (same as above - any family member may be substituted here.)

_____ (5). COME HERE. (beckon with head or hand.)

_____ (6). FIND THE BALL. (look in the direction of a ball; if no response make gesture toward ball and back to child.)

_____ (7). SHUT THE DOOR. (will child do this in course of interview: if no response point to door and go through motions of opening it.)

_____ (8). OPEN THE DOOR. (same as above - may be reversed.)

_____ (9). WHERE IS BABY? SEE BABY? (present card (a); repeat "baby" several times until child points to one picture.)

_____ (10). GOOD BYE. BYE BYE. (if child does not respond, wave. This may be reserved until child is leaving.)

If performance on Test A indicates the child may be able to perform more difficult items, proceed to Test B. If the child is too mature for Test A, administer Test B only.

Attract the child's attention to your face before giving item for speech reading. Do not extend your hand for object until you have stopped talking. Items may be given up to four times. If the child seems to be guessing, repeat previous items as a check.

Scoring Key: ( ) correct response; (-) incorrect; (o) no response
Record results as the number of correct responses. Max. score 77.

Part 1 Object Identification
Present objects on table in front of child in order named: fish, shoe, ball, car.

___(1) SHOW ME THE FISH. ___(2) SHOW ME THE BALL. ___(3) SHOW ME THE AIRPLANE

Return objects and present: top, bow, baby, gun.
___(4) SHOW ME THE BOW. ___(5) SHOW ME THE TOP. ___(6) SHOW ME THE GUN.

Return objects and present: chair, comb, toothbrush, airplane.
___(7) SHOW ME THE CHAIR. ___(8) SHOW ME THE AIRPLANE. ___(9) SHOW ME THE TOOTHBRUSH.

Return objects and present: cookie, bell, dog, watch.
___(10) SHOW ME THE BELL. ___(11) SHOW ME THE WATCH. ___(12) SHOW ME THE COOKIES.

Return objects and present: bus, table, comb, shoe.
___(13) SHOW ME THE TABLE. ___(14) SHOW ME THE COMB. ___(15) SHOW ME THE BUS.

Return objects and present: button, book, car, dog.
___(16) SHOW ME THE DOG. ___(17) SHOW ME THE BUTTON. ___(18) SHOW ME THE CAR.

Part 2 Parts Of The Body
Place your hand on your face and say, THIS IS MY FACE. Ask child, WHERE IS YOUR FACE? SHOW ME YOUR FACE. Repeat this demonstration until child understands what is expected of him. HAND may be used for further demonstration if necessary.

___(19) WHERE IS YOUR ARM?

___(20) WHERE IS YOUR MOUTH?

___(21) WHERE ARE YOUR EYES?

___(22) SHOW ME YOUR TEETH.

___(23) SHOW ME YOUR NOSE.

___(24) SHOW ME YOUR THUMB.

___(25) WHERE ARE YOUR FEET?

Part 3 Picture Identification
Present test card (a). Say:

___(26) SEE BABY? WHERE IS BABY?

Present test card (b). Say:

___(27) WHERE IS MOTHER?

___(28) WHERE IS DADDY?

___(29) WHERE IS THE BOY?

Present test card (c). Say:

___(30) POINT TO THE BIRD.

___(31) POINT TO THE DOG.

___(32) POINT TO THE COW.

Present test card (d). Say:

___(33) POINT TO THE T.V. (or television).

___(34) POINT TO THE BOAT.

___(35) POINT TO THE MAN.

___(36) POINT TO THE HOME (or house).

Part 4 Numbers
Place the red blocks on table in front of child. Say THREE. Take three blocks from pile and place them close to you. Replace the blocks and repeat THREE, gesturing for child to push them toward you. Continue with other numbers. If child seems to be guessing, repeat numbers in random order up to five until you establish his speech reading ability with numbers.

___(37) ONE

___(38) FOUR

___(39) TWO

___(40) FIVE

Part 5 Colors
Place color squares before child two at a time. Give the name of one color and reach out your hand for it. Replace and test for color recognition until you are satisfied that the child does or does not know the color names by speech reading.

___(41) YELLOW, BLUE, BLUE, YELLOW, BLUE, YELLOW.

___(42) BLACK, BLACK, WHITE, BLACK, WHITE, WHITE.

___(43) RED, BROWN, RED, BROWN, BROWN, RED.

Part 6 Animals
Place animals in front of child in this order: pig, sheep, horse, and chicken.

___(44) GIVE ME THE PIG. ___(45) GIVE ME THE HORSE. ___(46) GIVE ME THE CHICKEN.

Part 7 Clothing
Lay out doll and clothing on card (e) (boy doll or girl doll according to sex of child). Demonstrate that the child is to place the article named on the doll. Say: PUT ON HIS (HER) PAJAMAS. Demonstrate and have child do this also. Proceed with other articles.

___(47) PUT ON HIS (HER) SHOES.

___(48) PUT ON HIS (HER) PANTS.

___(49) PUT ON HIS SHIRT. or PUT ON HER DRESS.

___(50) PUT ON HIS (HER) HAT.

___(51) PUT ON HIS (HER) COAT.

Part 8 Use of Comparatives
Place the large ball, small ball, large baby and small baby in a row on the table. Score 2 points if child does three out of four correctly.

___(52) GIVE ME THE BIG BALL. GIVE ME THE LITTLE BALL. GIVE ME THE LITTLE BABY. GIVE ME THE BIG BALL.

Part 9 Foods
Present card (f) to child. Allow him to examine it and proceed.

___(53) SHOW ME THE APPLE.

___(54) WATER.

___(55) PIE

Present card (g).

___(56) ORANGE.

___(57) MILK.

___(58) BREAD.

Present card (h).

___(59) BANANA.

___(60) MEAT.

___(61) CANDY.

Part 10 Simple Directions
Place objects on table in this order: fork, spoon, cup.

___(62) PUT THE SPOON IN THE CUP.
Remove objects and set out: chair, bed, baby, cup, table.

___(63) PUT THE BABY TO BED. ___(64) PUT THE CUP ON THE TABLE.

Part 11 Action Verbs
Say: CAN YOU WALK? WALK. Demonstrate and get child to walk around the room. Give the following verbs without demonstrati

___(65) HOP. ___(66) RUN. ___(67) JUMP. ___(68) SHUT THE DOOR.

Part 12 Longer Sentences Card (i) ___(69) WHO PUT ON HER SHOES?

___(70) WHO EATS HER DINNER? Present card (j).

___(71) WHICH ONE PLAYS BALL? ___(72) WHICH ONE TAKES A BATH?

___(73) WHICH ONE JUMPS ROPE? Present card (k).

___(74) WHO SLEEPS IN BED? ___(75) WHO READS A BOOK?

___(52) PUT THE SPOON IN THE CUP.

___(51) Replace objects and put suit, belt, purse, cup, table.

___(50) PUT THE KNIFE ON THE TABLE.

___(49) PUT THE KNIFE ON THE TABLE.

___(48) Replace objects and put suit, belt, purse, cup, table.

___(47) PUT THE SPOON IN THE CUP.

___(46) Replace objects on tray and put suit, belt, purse, cup, table.

___(45) PUT THE KNIFE ON THE TABLE.

___(44) Replace objects and put suit, belt, purse, cup, table.

___(43) PUT THE SPOON IN THE CUP.

___(42) Replace objects on tray and put suit, belt, purse, cup, table.

___(41) PUT THE KNIFE ON THE TABLE.

___(40) Replace objects and put suit, belt, purse, cup, table.

___(39) PUT THE SPOON IN THE CUP.

___(38) Replace objects on tray and put suit, belt, purse, cup, table.

___(37) PUT THE KNIFE ON THE TABLE.

___(36) Replace objects and put suit, belt, purse, cup, table.

___(35) PUT THE SPOON IN THE CUP.

___(34) Replace objects on tray and put suit, belt, purse, cup, table.

___(33) PUT THE KNIFE ON THE TABLE.

___(32) Replace objects and put suit, belt, purse, cup, table.

___(31) PUT THE SPOON IN THE CUP.

___(30) Replace objects on tray and put suit, belt, purse, cup, table.

___(29) PUT THE KNIFE ON THE TABLE.

___(28) Replace objects and put suit, belt, purse, cup, table.

___(27) PUT THE SPOON IN THE CUP.

___(26) Replace objects on tray and put suit, belt, purse, cup, table.

___(25) PUT THE KNIFE ON THE TABLE.

___(24) Replace objects and put suit, belt, purse, cup, table.

___(23) PUT THE SPOON IN THE CUP.

___(22) Replace objects on tray and put suit, belt, purse, cup, table.

___(21) PUT THE KNIFE ON THE TABLE.

___(20) Replace objects and put suit, belt, purse, cup, table.

___(19) PUT THE SPOON IN THE CUP.

___(18) Replace objects on tray and put suit, belt, purse, cup, table.

___(17) PUT THE KNIFE ON THE TABLE.

___(16) Replace objects and put suit, belt, purse, cup, table.

___(15) PUT THE SPOON IN THE CUP.

___(14) Replace objects on tray and put suit, belt, purse, cup, table.

___(13) PUT THE KNIFE ON THE TABLE.

___(12) Replace objects and put suit, belt, purse, cup, table.

___(11) PUT THE SPOON IN THE CUP.

___(10) Replace objects on tray and put suit, belt, purse, cup, table.

___(9) PUT THE KNIFE ON THE TABLE.

___(8) Replace objects and put suit, belt, purse, cup, table.

___(7) PUT THE SPOON IN THE CUP.

___(6) Replace objects on tray and put suit, belt, purse, cup, table.

___(5) PUT THE KNIFE ON THE TABLE.

___(4) Replace objects and put suit, belt, purse, cup, table.

___(3) PUT THE SPOON IN THE CUP.

___(2) Replace objects on tray and put suit, belt, purse, cup, table.

___(1) PUT THE KNIFE ON THE TABLE.

CLINICAL SPEECH READING TEST FOR CHILDREN

TRIAL TEST

NAME _____ DATE _____

BIRTHDATE _____ GRADE _____ AGE _____

ADMINISTRATOR _____ Good enough Draw-A Man M.A. _____

Vineland Scale Social Age _____

SPEECH READING WITH GESTURE (TEST A) _____

SPEECH READING TOTAL POINT SCORE (TEST B) _____

FAMILIAR TESTER _____

UNFAMILIAR TESTER _____

TEST A
Easy Speech Reading With Gesture

Scoring Key: (+) Correct response to speech reading
(±) Correct response to speech reading with gesture
(#) Performs item at home in response to speech reading and/or gestures.
(–) Does not perform item correctly.
(These items may be repeated twice without gesture and again twice with gesture.)

_____ (1). HI _____. HELLO _____. (smile, wave. Does child respond with recognition or greeting?)

_____ (2). HOW DO YOU DO? SHAKE. (put out hand, make hand shaking motion.)

_____ (3). WHERE IS MAMA? WHERE IS MOTHER? (use the familiar one; look around, does child look at door or in direction of mother?)

_____ (4) WHERE IS DADDY? WHERE IS PAPA? WHERE IS FATHER? (same as above.)

_____ (5) COME HERE. (beckon with head or finger.)

_____ (6) WHERE IS BABY? SEE BABY? (present card (s) point to card, but require child to indicate the baby.)

_____ (7) FIND THE BALL. (look in direction of ball on floor; if no response add gesture of pointing to ball and then to child.)

_____ (8) BLOW A KISS. BLOW ME A KISS. or GIVE ME A KISS. (if no response, demonstrate.)

_____ (9) PAT A CAKE. PAT A CAKE. (if no response, demonstrate.)

_____ (10) SHUT THE DOOR. (will the child do this in course of interview? if no response, point to door and go through motions of opening.)

_____ (11) OPEN THE DOOR. (same as above.)

_____ (12) GOOD BYE. BYE BYE. (if child does not respond, wave. This item may be done when child is leaving.)

If performance on Test A indicates the child may be able to perform more difficult items, proceed to Test B. If the child is too old to test A, administer Test B without A.

TEST B

Scoring: (+) correct response; (-) incorrect response; (0) no response

Part I Object Identification
Present objects on the table in front of the child: car, ball, airplane, shoe
Say, "SEE THESE TOYS?"

_____ (1). SHOW ME THE AIRPLANE.

_____ (2). SHOW ME THE BALL.

_____ (3). SHOW ME THE CAR.

Part 2. Picture Identification
Give the child card (b). Say, "SEE THESE PEOPLE?"
_____ (4). WHERE IS MOTHER?

_____(5). WHERE IS THE BOY?

_____(6). WHERE IS FATHER?

Part 3. Simple Directions
Present objects on the table at almost arm's lenght from the child to discourage handling. Place them in this order: chair, bed, fork, spoon, cup, baby.

_____(7). PUT BABY IN BED. (return objects to original position after each change.)

_____(8). PUT THE SPOON IN THE CUP.

_____(9). PUT BABY ON THE CHAIR.

Part 4. Part of the Body
Give child the large paper doll. Give the boy or girl according to sex of child.) "THIS IS A LITTLE BOY (GIRL)." SHOW ME THE BOY'S (GIRL'S) FACE." Point to the face. Repeat demonstration until child understands what is expected. Hand and hair may be used as demonstration items.

_____(10). SHOW ME THE ARM. ARM

_____(11). SHOW ME THE FEET. FEET.

_____(12). SHOW ME THE MOUTH. MOUTH.

_____(13). SHOW ME THE THUMB. THUMB.

_____(14). SHOW ME THE NOSE. NOSE.

_____(15). SHOW ME THE EYES. EYES.

Part 5. Animal Names
Place animals in this order infront of child: pig, sheep, horse, duck, and chicken. Say, "HERE ARE SOME ANIMALS THAT LIVE ON THE FARM. GIVE ME THE DUCK." Point to the duck and hold out hand for it. Repeat demonstration until child understands what is expected.
_____(16). GIVE ME THE PIG. PIG.

_____(17). GIVE ME THE HORSE. HORSE.

____(18) GIVE ME THE CHICKEN. CHICKEN.

Part 6. Colors
Place card (d) before child. Put the squares of color in position by pairs. Test only two colors at a time. Give the name of one color and reach out your hand for it. Test for color recognition until you are satisfied that the child does or does not know the color names by speech reading.

____(19) YELLOW, BLUE, BLUE, YELLOW, BLUE, YELLOW.

____(20) BLACK, BLACK, WHITE, BLACK, WHITE, WHITE.

____(21) RED, BROWN, RED, BROWN, BROWN, RED.

If child distinguishes two of the three pairs, proceed to more difficult colors on card (e).
Give $\frac{1}{2}$ point for each color correctly read on card (e).

____(22) PURPLE ____(23) YELLOW ____(24) BROWN ____(25) PINK

____(26) BLUE ____(27) TAN ____(28) RED ____(29) GREY

____(30) GREEN ____(31) WHITE ____(32) ORANGE ____(33) BLACK

Part 7. Clothing
Present boy paper doll (card (f)) or girl doll (card (g)) according to sex of child. Place doll and clothing in positions indicated. Say, "YOU DRESS THE BOY (DOLL). PUT ON HIS (HER) PAJAMAS." Demonstrate this. Have child do the same. Proceed with other parts of clothing; replace each part on the card after it is moved.

____(34) PUT ON SHOES. SHOES.

____(35) PUT ON SHIRT. (FOR GIRLS * DRESS)

____(36) PANTS. (FOR GIRLS * PURSE)

____(37) COAT.

____(38) HAT.

____(39) SWEATER.

Part 8. Numbers
Place red blocks on table in front of child. Say, "THREE." Take three blocks from pile and place them close to you on table. Replace them and repeat; motion for child to place three blocks in front of you. Continue with other numbers.

____(40) ONE.

____(41) FOUR.

____(42) TWO.

____(43) FIVE.

Part 9. Prepositions
Place the white box and pink handkerchief in front of child. Perform demonstration. Say, "PUT THE HANKIE AROUND THE BOX." Wrap the hankie around the box like a rope. Repeat. Ask child to do this. Continue with other items.

____(44) PUT IT OVER THE BOX.

____(45) PUT IT UNDER THE BOX.

____(46) PUT IT IN THE BOX.

____(47) PUT IT BESIDE THE BOX.

Part 10. People - Occupations
Present card (f) to child. Allow him to examine it and proceed.

____(48) POINT TO THE MAILMAN.

____(49) POINT TO THE MILKMAN.

____(50) POINT TO THE CLOWN.

____(51) POINT TO THE COWBOY.

____(52) WHERE IS THE FARMER? Present card (g) and continue.

____(53) WHERE IS THE FIREMAN?

____(54) WHERE IS THE POLICEMAN?

____(55) WHERE IS THE SOLDIER?

Part 11. Foods
Present card (h) saying, "HERE ARE SOME THINGS TO EAT."

____(56) SHOW ME THE APPLE.

____(57) BANANA

____(58) WATER

____(59) MILK

____(60) BREAD

____(61) PIE

____(62) MEAT

____(63) POTATOE

Part 12. Adjectives
Present first two balls, then two pencils, then two babies.

____(64) SHOW ME THE BIG BALL. SHOW ME THE LITTLE BALL.

____(65) SHOW ME THE SHORT PENCIL. SHOW ME THE LONG PENCIL.

____(66) WHICH BABY IS LONGER? WHICH BABY IS SMALLER?

TABLE III

COMPARISON OF TEST QUESTIONS OF THE CLINICAL SPEECHREADING TEST WITH LANGUAGE ITEMS OF CERTAIN INTELLIGENCE TESTS AND LANGUAGE DEVELOPMENT STUDIES

Language Skill	Age in Months	Authorities	Related Speechreading Questions
1. Attends readily to speaking voice	1.3	Bayley * (1933)	(Attends to face- complete test)
	2.0	Cattell* (1940)	
2. Understands gestures	9.0	Buhler* (1930)	Test A
3. Responds to bye-bye	10.0	Gesell, Thompson,& Amatruda * (1938)	Test A-10
4. Adjusts to command	10.0	Gesell Thompson,& Amatruda *	complete test
5. Responds to inhibitory words	12.0	Gesell and Thompson *	
6. Comprehends simple verbal commissions	12.0	Gesell and Thompson *	1-18, 37-40, 44-46
7. Understands a command with gesture			
"Sit down."	21-23	Buhler*	A-6,
"Throw me the ball."	21.0	Merrill-Palmer*	1-18,
"Give me that."		Buhler*	37-40, 44-46

(TABLE III CONTINUED)

8. Object identification			
Names one object	17.4	Bayley *	A-6, 1-18, 37-40, 44-46
Names three objects	21-24	Gesell *	
Identifies object by name, 4 out of 6 kitty, button, cup, thimble, train, spoon	24.0	Stanford-Binet[y] (1936)	1-18 (including cup, button, train, and spoon)
Names 4 out of 5 objects: chair, auto, box, key, and fork	21.6	Stanford-Binet[y]	(chair, car, and fork)
9. Picture identification			
Names pictures in a book	18.7	Bayley *	26-36
example: baby	22.5	Shirley *	A-9, 26
dog	19.0	Shirley *	31
dog on picture card	15.0	Gesell *	31
picture vocabulary, 15 out of 18 cards	42.0	Stanford-Binet[y]	(12 pictures tested)
10. Number concepts			
concept of one	30	Cattell Infant Scale *	37-40
counts three objects	48	Ilg and Ames [z] (1955)	
counts four objects	60	Stanford-Binet[y]	

(TABLE III CONTINUED)

11. Color naming				
can be taught basic colors	48-60		John Tracy Clinic Course	41-43
knows red, green, yellow, and blue	60.0		Ilg and Ames[z]	41-43
12. Says hello, thank you or equivalent	18.0		Gesell and Thompson *	A-1
13. Refers to self by name	24.0		Ilg and Ames[z]	A-1
14. Body parts				
points to 3 of these: hair, eyes, mouth, hand	24.0		Stanford-Binet[y]	19-25
points to all of above	30.0			
points to 2 of these: nose, eyes, mouth, hand	20.0		Cattell*	
points to all of above	22.0			
15. Comprehends simple Questions	18.0		Gesell*	
16. "Action-agent" test example: "Who sleeps?"	30-35		Merrill-Palmer[x]	70-75
17. Follows simple directions example: "Give me the kitty." "Put the spoon in the cup."	24-42		Stanford-Binet[y]	47-51, 62,65
18. Comparison of objects	42.0		Stanford-Binet	52

* Mc Carthy, op. cit., pp. 482-485.
[x]Stutsman, loc. cit.
[y]Terman and Merrill, loc. cit.
[z]Ilg and Ames, loc. cit.

CHAPTER IV

ADMINISTRATION OF THE CLINICAL SPEECHREADING TEST

Two tests were prepared and administered in the development of the Clinical Speechreading Test for this study. The first test was the Trial Test. On the basis of information gained from the Trial Test, the Clinical Speechreading Test was constructed and used to test the experimental group set up according to criteria outlined in Chapter III. After testing was completed and the results analysed, changes indicated were incorporated into a Revised Clinical Speechreading Test, which appears in the Appendix.

A. Administration of the Trial Test. The Trial Test was administered to a group offourteen subjects ranging in age from eighteen months to seven and a half years. This group included those deaf from birth, hard of hearing, and normal hearing children. The test scores ranged from 0 to 8 on Part A and from 0 to 34 on Part B. The highest possible score was 12 for Part A and 66 for Part B.

The Trial Test was satisfactory in its general form, but certain changes were necessary. Changes made were as follows:

(1) Content. The major changes were in test content:

a. Eighteen color names were reduced to six.

b. Identification of Body Parts was changed from using a paper doll to the child's own body.

c. Prepositions were omitted.

d. The word "sweater" was omitted from clothing names.

e. More objects and picture identifications were added.

f. Naming of occupations was omitted.

g. Questions about familiar home activities were added.

(2) Form. The test form remained essentially the same, except for the following changes:

a. An Information Blank was added to provide a place for recording information about a child's hearing, speech development, schooling, and other comments pertaining to his speechreading performance.

b. The test directions were rephrased.

c. The Trial Test included introductory statements for each section, such as, "See these toys?" These were omitted from the Clinical Speechreading Test because they tended to confuse the subjects.

The changes of both content and form were intended to make the test easier for the subjects. Alterations of form also helped to simplify administration. The changes were incorporated into the Clinical Speechreading Test which was used to test the selected test group.

TABLE IV

RESULTS FROM THE ADMINISTRATION OF THE TRIAL SPEECHREADING TEST

Subjects	Chronological Age	Speechreading Scores		Hearing
		Part A	Part B	
1. P. B.	1-6	6	0	normal
2. C. Z.	2-6	0	1	normal
3. L. P.	2-6	8	0	deaf
4. S. D.	3-0	7	11	deaf
5. Y. S.	3-6	8	1	deaf
6. C. Z.	4-9	omitted	16	normal
7. J. B.	5-0	omitted	20	deaf
8. B. C.	5-0	1	27	normal
9. W. B.	5-7	1	34	hard of hearing
10. J. G.	6-11	0	7	deaf
11. R. E.	7-3	omitted	40	normal
12. J. N.	7-6	1	15	hard of hearing

B. Administration of the Clinical Speechreading Test. All of the children present in the five primary classes of the New Mexico State School for the Deaf at Santa Fe, New Mexico were tested with the Clinical Speechreading Test and the Goodenough Draw-A-Man Intelligence Test. Information about each child was obtained from school records and recorded on the Information Sheet. From this information, the test group was selected on the basis of chronological age, mental age, degree of hearing loss, and normal vision. Twenty-four of the thirty-two children tested were included in the final test group. Of these, fourteen were girls and ten were boys. The average chronological age of the group was seven years, two months. The average mental age, according to the Goodenough,[1] was six years and seven months, giving an average I. Q. of 92 for the selected group.

The children in the primary department had received from four months to two and a half years training at the State School, a residential school. This school uses the combined method of instruction for the deaf and hard of hearing children.

Individual testing of the children at the State School was done in a quiet corner of the classroom with no visual distractions for the subjects. The test environment of the classrooms was very good because

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[1] "On the Goodenough Test, deaf children, age for age, are somewhat below the standards of hearing children who are making normal progress in school. . . . The median I. Q. . . . on the Goodenough was 87.7." (Taken from Goodenough and Shirley, ~~op. cit.~~, p. 246.)

the children were at ease in the familiar surroundings. The lighting was specially designed to give ideal illumination on a speaker's face. The tables and chairs were scaled to the children's size. The presence of others in the room did not disturb the subjects because classes were small and the rooms were large and well planned.

Each speechreading test was preceded by the administration of a Draw-A-Man test. This was done by giving spoken directions and showing briefly a full length, 8"x10" photograph of a man. This procedure helped to structure the situation for the child so that he understood that he was to follow the directions given by the examiner.

The first part of the test, object identification, was a familiar one to the children at the school. The first four test objects were the easiest of the test: fish, shoe, ball, and airplane. Most of the children succeeded with these and understood what was expected because these objects are standard ones for teaching beginning speechreading.

In the course of administering the thirty-two tests, none of the subjects refused any part of the test, but some children required special handling. Those who were limited in their ability to attend to the face for any length of time were given frequent rests. It was helpful to allow the child to replace test materials and take short breaks. Two hyperactive children could not keep from handling the test objects. After the first few questions, the examiner found that by gently holding the child's hands while giving the speechreading sentences, the child was able to concentrate on the test questions.

Another special problem encountered in testing was the case of two children with severe vision defects. For them, a special procedure was followed. As the examiner presented each test object one by one, the child was allowed to examine it and then place it on the test table. One child tested in this way achieved a speechreading score of 51. The second visually handicapped child was further handicapped by a brain injury. His vision was severely impaired, one eye was ulcerated and bandaged, the other eye was also impaired. This child scored 9 points. Neither of these subjects was included in the final test data.

The third type of difficulty encountered was in testing a boy considered by the school to be a discipline problem. He was reluctant to take the test and therefore uncooperative at first. His resistance was overcome by using the test as a game and giving extra praise and encouragement. In spite of his attitude, this boy achieved a high score, 71 points. (He was a mildly hard of hearing child and not included in the final test group.)

In most cases, rapport was good. The examiner had visited the children in the dormitory and classrooms on several occasions, but the examiner was unfamiliar to the subjects as far as speechreading was concerned. The test scores were recorded as obtained by an unfamiliar examiner. Another factor which aided rapport was the cooperation of all the classroom teachers. They introduced the examiner and helped prepare the children for the test situation. Most of the children enjoyed the test. Even those with poor speechreading ability did not seem to become fatigued or discouraged.

One characteristic of the test group which may have affected the test scores was the bilingual background of many of the students. Twenty-three Spanish-American and one American Indian were included in the total unselected group. One child, a Mexican national, had been exposed to English speech for only nineteen months, but she achieved a high score of 61 points.

After the tests were completed, the teachers were asked to rate their students in order of speechreading ability. It was emphasized that factors other than speechreading should not influence their ratings. The teachers did not know the test results until the experiment was completed.

The speechreading tests were given to a variety of subjects, and it was found that test procedures could be adapted to special problems without changing the speechreading material itself. The test environment and rapport with subjects were good.

CHAPTER V

ANALYSIS OF TEST RESULTS

The original problem of this paper was to develop an instrument which would aid a clinical examiner to appraise the speechreading development of young hearing handicapped children. The children to be tested by this instrument would be those too young to be tested by existing speechreading tests, which require some facility with reading, writing, or speaking. Part A of the Clinical Speechreading Test was intended for very young speechreaders and Part B of the test was intended for children from approximately three to eight years.

A. Test range. The Clinical Speechreading Test was given to children ranging in age from four years, eleven months to nine years, seven months. Younger subjects were not used only because none was enrolled at the New Mexico State School for the Deaf. It is believed that the Clinical Speechreading Test is applicable to children from the age of three years. This is based on the results of reactions of young deaf children to the Trial Test. Deaf subjects aged two and a half, three, and three and a half responded well to the Trial Test, although this test was more difficult before it was revised into the Clinical Speechreading Test. The age range of the Clinical Speechreading Test may tentatively be considered to be from three to nine years.

Subjects younger than three years could not be reliably tested with the Clinical Speechreading Test. Part A of the test was intended for use with the youngest subjects, but it was not practical in actual

application. The items of the test, although easier than questions of Part B, were too dependant upon home environment. The language environment varies greatly from family to family. This is particularly true with respect to the language used with young hearing handicapped children. The speechreading development of young children is an individual matter. Vocabulary is acquired first to communicate about personal needs and pleasures such as food, toys, family members, and family activities. The individual and personal nature of early speechreading vocabulary makes it impractical to test the speechreading of young children on the basis of standard vocabulary lists. Test results suggest that an evaluation of speechreading in young children cannot be made by means of a formal test such as the Clinical Speechreading Test.

To extend the range of the Clinical Speechreading Test below three years, it would be necessary to use a new approach to the problem. A suggested method is an interview with a hearing handicapped child's parents carried out within the framework of a checklist of speechreading development. Such a checklist or interview form is shown in the appendix. With the addition of this interview form, the range of the test would extend from infancy to the age of reading and writing with competency, about eight years old.

The range of test difficulty was great enough from the easiest to the most difficult questions so that no subject in the final test group achieved a perfect score and no subject failed all questions. Distribution of the test questions according to the percentage of subjects passing at each level ranged from 5% to 95% passing. Fifty

percent, or 38 of the questions, were passed by 50% of the subjects. The distribution of successes and errors suggests that it would be possible to arrange test questions in order of difficulty. This is at variance with Utley's conclusion regarding her motion picture test of speechreading ability. "A significant conclusion from the preliminary experimentation is that it is not possible to arrange test items in order of difficulty. The successes and errors made by the group tested are distributed evenly throughout the whole test. The higher scores are obtained from a higher 'over-all' response, and the poorer scores are not obtained with a specific group of test items."[1]

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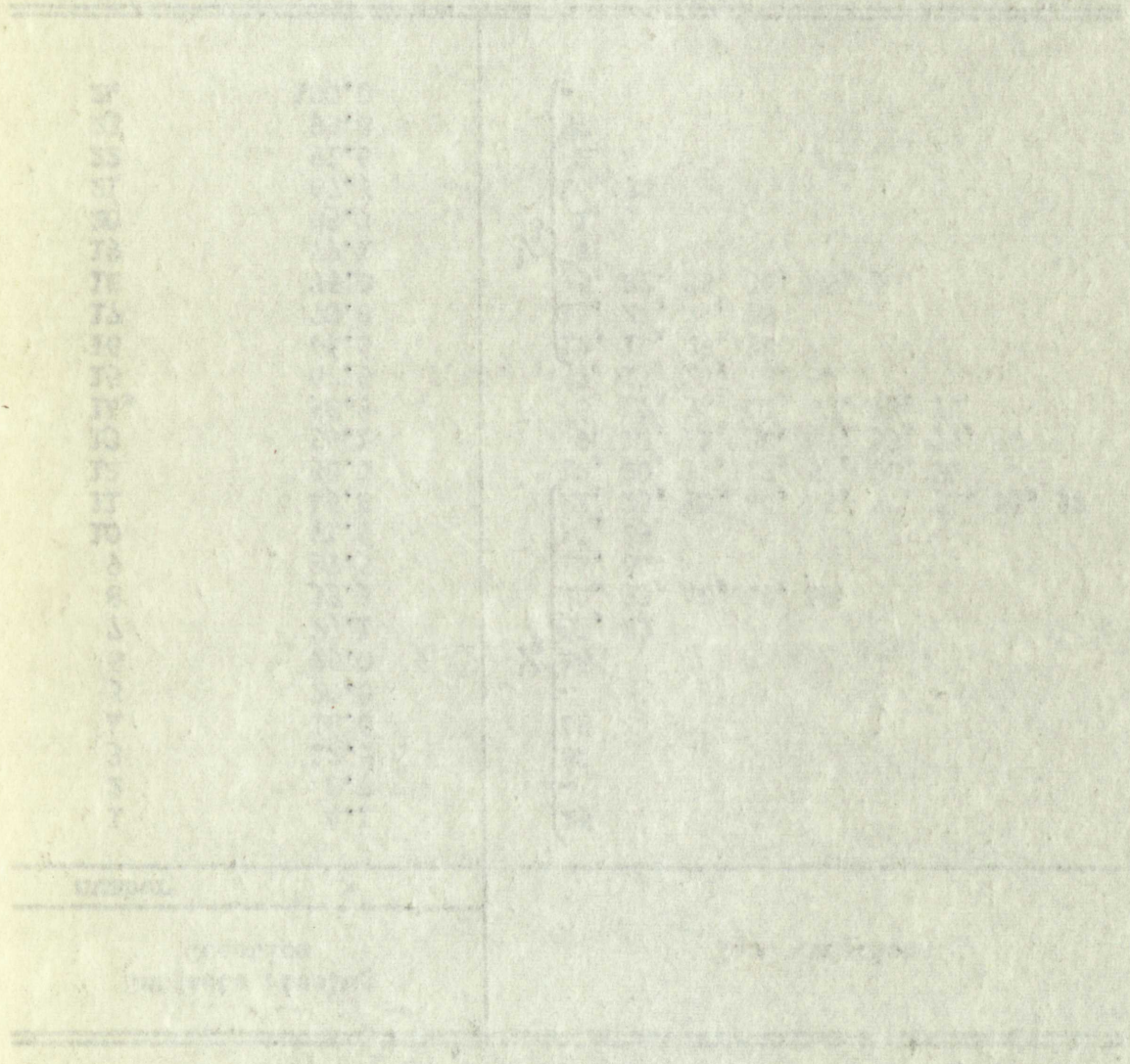
[1]Utley, op. cit., p. 659.

TABLE V

TEST QUESTIONS RANKED IN ORDER OF DIFFICULTY AS SHOWN BY NUMBER AND PERCENT OF SUBJECTS PASSING

Subjects Passing Question		Test Questions
number	%	
1	4.1	25
2	8.3	-
3	12.5	62
4	16.6	68
5	20.0	-
6	25.0	1/3 46
7	29.1	61, 22
8	33.3	24, 33, 48, 49, 60
9	37.5	16, 64
10	41.6	17, 65
11	45.8	21, 23, 30, 44, 45, 50, 51, 55, 57
12	50.0	12, 20, 31, 42, 53, 70, 74
13	54.1	9, 10, 11, 34, 43, 53, 70, 74
14,	58.3	6, 17, 32, 40, 67, 73, 75
15	62.5	7, 13, 14, 28, 54
16	66.6	18, 19, 29, 38
17	70.8	15, 22, 29, 38
18	75.0	5, 27, 35, 36, 46, 56
19	79.1	1/3 8
20	83.3	1, 3
21	87.5	26, 72
22	91.6	2, 4
23	95.8	37
24	100.0	-



Questions of the Clinical Speechreading Test are shown on Table V in descending order of difficulty with the easiest and most difficult thirds indicated.

B. Speechreading scores. Twenty-four subjects were included in the test data. The scores ranged from 2 to 73. One child not included in the final test group achieved a perfect score of 75 points. The mean score of the test group was 37 and the median was 38.

Speechreading scores and chronological age. The subjects ranged in age from four years, eleven months to nine years, three months. Figure I shows the speechreading scores achieved by eight age groupings of one year intervals. This figure illustrates the absence of relationship between chronological age and speechreading test scores except in the case of the low score at the lowest age level. This may be due to the small sample at that age, only one four year old subject.

Sex of subjects and speechreading score. A comparison of the average scores achieved by boys and girls shows a difference of 10 points. The average score of the female subjects was 30 and the average score of the males was 40. The size of the two groups was unequal, fourteen girls and ten boys. Because of the small size of the group, any conclusion about the superior performance of the males on this test would be inadequately supported. Examination of the test questions does not show that the material favors one sex over the other, with the possible exception of "top" for boys and "bow" (noun) for girls.

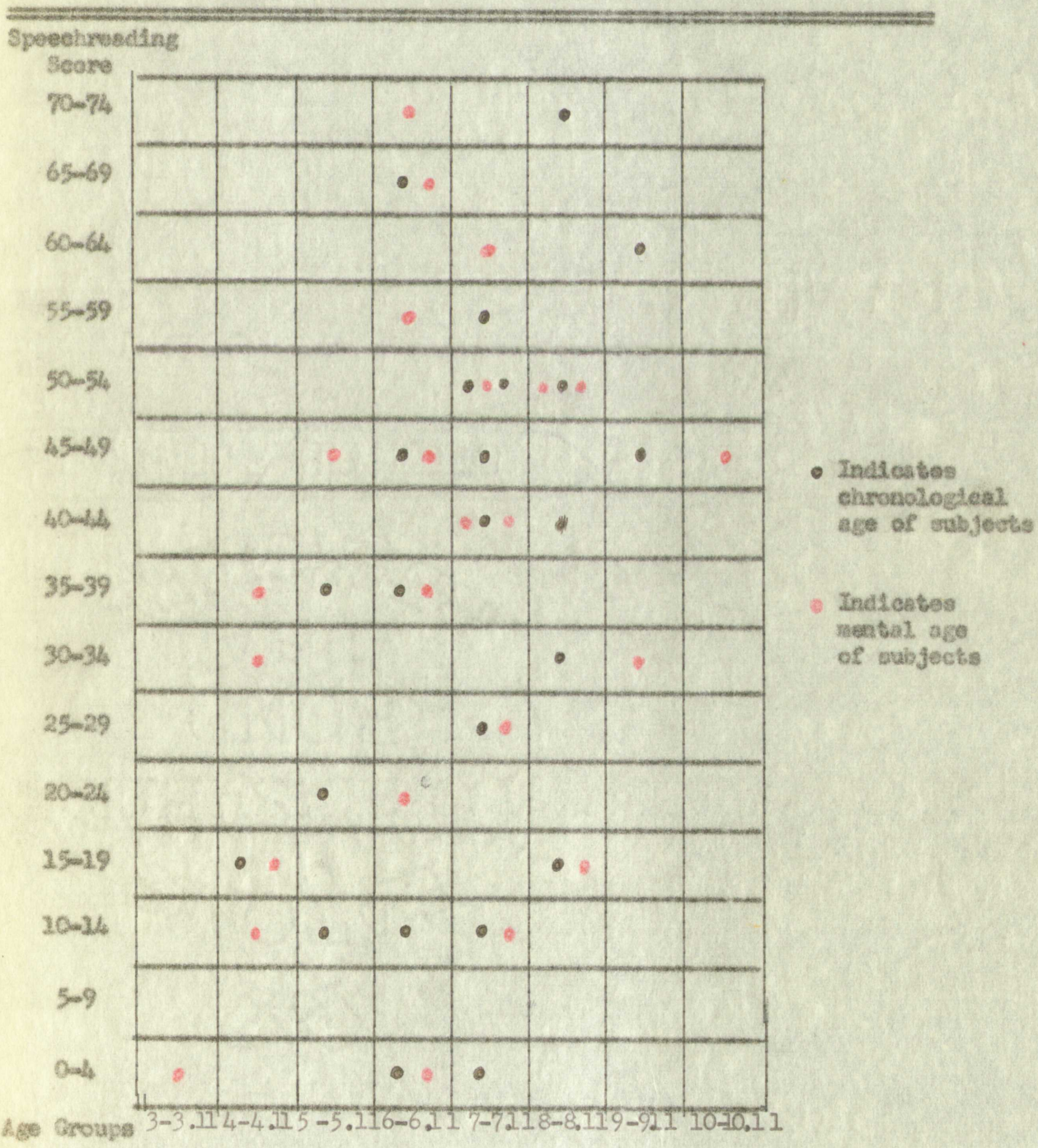
TABLE VI

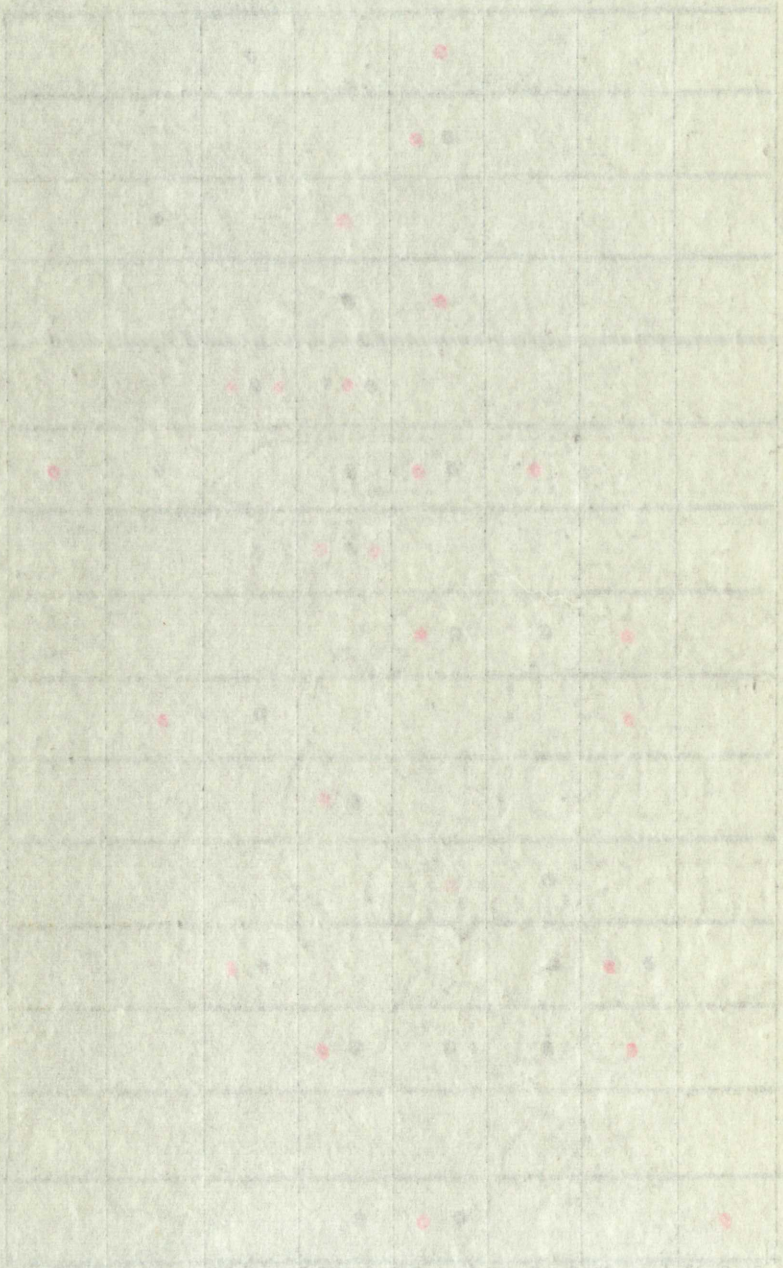
CLINICAL SPEECHREADING TEST RESULTS

	Subject	Sex	Age	M. A.	I. Q.	Speech-reading Score	Hearing Loss Left	Hearing Loss Right
1.	V. A.	F	7-8	7-0	91	54	85.6%	70.4%
2.	J. B.	F	5-1	4-6	89	36	73.6	84.0
3.	J. C.	M	6-4	3-0	47	4	100.0	100.0
4.	H. C.	F	5-10	6-0	103	24	80.8	81.6
5.	E. C.	F	7-4	7-0	95	14	100.0	100.0
6.	R. U. C.	M	8-2	9-0	110	33	80.0	74.4
7.	G. D.	F	4-11	4-3	86	18	84.0	50.0
8.	G. G.	F	7-6	8-9	117	51	81.6	70.4
9.	D. G.	F	6-0	5-0	83	45	74.4	70.4
10.	E. G.	F	9-7	7-6	78	61	73.6	72.8
11.	W. G.	M	8-8	8-6	98	52	100.0	100.0
12.	R. J.	M	7-0	6-0	86	59	52.0	57.6
13.	V. K.	F	7-0	6-0	86	45	100.0	100.0
14.	P. L.	F	7-4	6-3	85	2	74.4	76.0
15.	R. L.	F	5-10	4-9	81	14	100.0	100.0
16.	B. M.	M	6-2	6-9	109	68	57.6	52.4
17.	J. M.	M	8-3	7-9	93	40	76.8	76.7
18.	J. N.	F	8-4	6-0	72	73	62.4	70.4
19.	J. P.	M	6-5	6-9	105	39	84.0	76.0
20.	G. R.	F	7-6	7-6	100	28	84.0	100.0
21.	R. R.	F	6-5	4-9	66	32	64.8	74.4
22.	T. S.	M	9-3	10-6	114	46	70.4	68.8
23.	J. S.	M	7-1	7-9	110	42	84.0	80.0
24.	A. T.	M	8-3	8-0	97	17	100.0	100.0
AVERAGES:			7-2	6-7	92	37		

TABLE VII

DISTRIBUTION OF SCORES IN MENTAL AGE AND CHRONOLOGICAL AGE GROUPINGS





Speechreading rank and school placement. Children in the primary department of the New Mexico State School are divided into five classes. The children are separated on the basis of age and school ability. Group #1 is composed of the most advanced students in the department. They are seven, eight, and nine years old. Groups #2, #3, and #4 have children of six, seven, and eight years placed according to ability. The youngest kindergarten group is Group #5, composed of four, five, and six year old children.

A relationship between school placement and speechreading scores was evident in Group #1 and Group #5. The middle groups however did not show increasing speechreading achievement from one year to the next. The average speechreading scores of each ability group were as follows:

Group #1 - 20.2

Group #2 - 48.6

Group #3 - 43.0

Group #4 - 23.0

Group #5 - 57.3

This is consistent with the findings of Heider and Heider on speechreading tests given at the Clarke School for the Deaf. "The differences between the average scores of consecutive age groups (yearly progress) in lip-reading is small."[2]

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[2]Heider and Heider, op. cit., p. 152.

Test rank and teachers' ratings. The teachers ranked their classes on the basis of speechreading achievement within the class group. In general, ranks assigned by teachers corresponded to ranks achieved by subjects on the test. In Group #3 the correspondence was perfect. In Groups #2, #4, and #5 the correspondence was close. An exception was in the ranking of subject G. M. This child earned the only perfect score, but was ranked by her teacher as fourth in the class. The teacher stated that while G. M. speechreads very well, he does not feel that she has achieved as much as subject J. N. because of the usable hearing possessed by G. M. It may be noted that G. M. scored 75 and ranked number one even though no voice was used in the presentation of the speechreading material.

In Group #2 there was no agreement about the rank order of subjects with the exception of the best speechreader in the group. This classroom was taught by a teacher who put much less emphasis on oral methods than the other four teachers.

The relationship between ranks assigned by teachers and ranks achieved on the test are shown on Table VIII. Two ranks are given for each subject, the rank within the class and the rank in the total group of 32 unselected subjects.

TABLE VIII

TEACHERS' RATINGS COMPARED WITH CLINICAL SPEECHREADING TEST SCORES AND TEST RANKS

Ability Sub-Group	Teachers' Ratings	Subject	Test Ranks Sub-Group	Test Ranks Total Group	Test Score
1.	1	J. N.	1	1	73
	2	R. J.	3	4	58
Preparatory I	3	W. G.	4	6	52
	4	E. G.	2	3	61
	5	G. A.	5	5	54
	6	T. S.	6	8	46
2.	1	V. K.	1	9.5	45
Preparatory II	2	P. L.	4	24	2
	3	A. T.	3	20	17
	4	R. R.	2	17	28
3.	1	G. G.	1	7	51
Kindergarten I	2	J. S.	2	11	42
	3	J. M.	3	12	40
	4	J. P.	4	13	39
4.	1	B. M.	1	2	68
Kindergarten II	2	R. U. C.	3	15	33
	3	D. G.	2	9.5	45
5.	1	J. B.	1	14	36
Kindergarten III	2	G. R.	2	16	32
	3	H. C.	3	18	24
	4	G. D.	4	19	18
	5	E. C.	5.5	21.5	14
	6	R. L.	5.5	21.5	14
	7	J. C.	7	23	4

Speechreading scores and Goodenough Intelligence Quotients. The correlation of Goodenough I. Q.'s with the Clinical Speechreading Test scores was .24. Examination of the drawings did not reveal, to this examiner, any qualitative differences between drawings of the good and poor speechreaders. No attempt was made to relate the omission of ears in 29 out of 32 figure drawings to the physical defect of the subjects.[3] At the mental level of the test group (average mental age, six years and seven months) the omission of ears may be only an indication of the children's mental development just as the omission of any other details would indicate mental development at that age.

Speechreading and degree of hearing loss. All subjects included in the final test group had a severe hearing loss, at least a 50% loss in both right and left ears. Six subjects in the final test group were designated by the school as totally deaf. The speechreading scores of these subjects are, on the average, 5.6 points below the average for the total test group. The average scores of the totally deaf children was 28.4. However, two of the totally deaf achieved better than average

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[3] A study by Vaughn correlated speechreading ability (according to teachers' ratings) with Goodenough Intelligence Quotients and found a -.14 correlation. Vaughn discusses the figure drawings, "No evidence was found to indicate that the Goodenough distinguished either quantitatively or qualitatively between good and poor speechreaders, and therefore this instrument would not be of value in predicting success in lip reading." Vaughn found the figures drawn by the deaf children to be immature. She noted omission of ears in twelve of the eighteen drawings. (Taken from Vaughn, op. cit., pp. 32-38.)

scores. Subject J. G., designated as totally deaf, was not included in the average for totally deaf children because there is doubt as to the reliability of the child's audiogram in view of his low level of mental functioning.

TABLE IX

SPEECHREADING SCORES OF SIX TOTALLY DEAF CHILDREN

Subjects	Speechreading Score	I. Q.	Type of Loss
1. J. G. *	(4)	47	adventitious (infancy)
2. E. C.	14	95	adventitious (infancy)
3. W. G.	52	98	congenital
4. V. K.	45	86	adventitious (two years)
5. R. L.	14	81	congenital
6. A. T.	17	97	congenital (parents and siblings deaf)

* not included in average

The average speechreading score of the hard of hearing subjects not included in the final test data was 40. This is 4 points above the average for the total group. Some of the hard of hearing subjects as individuals scored under the average for the group of severely deaf in the final test group.

TABLE X

SPEECHREADING SCORES OF SEVEN HARD OF HEARING CHILDREN

Subjects	Speechreading Scores	I. Q.	Percentage of Hearing Loss Left - Right	
1. W. B.	53	79	41.6%	41.6%
2. R. C.	51	93	31.2	33.6
3. J. G.	26	77	38.4	46.4
4. B. E. M.	32	59	10.4	9.6
5. G. M.	75	112	20.0	29.6
6. T. M.	27	75	40.8	32.0
7. R. S.	27	(not obtained)	66.4	40.8

The conclusions which follow can be made from an analysis of the results obtained with experimental use of the Clinical Speechreading Test:

1. Children can be tested with the Clinical Speechreading Test from the ages of three to ten years.
2. A perfect score probably could not be attained on this test until the subject has attained a mental age of at least five years.
3. The test can be applied to a wide range of speechreading ability among children at the pre-reading level.
4. Test items analysis suggests that the questions have a wide range of difficulty and can be arranged in order of difficulty.

5. There was no relationship between speechreading scores and chronological age within the age group from five to ten years.
6. Speechreading scores were related to school placement only in the lowest and highest groups.
7. The correlation of I. Q. and speechreading scores was +.24.
8. The correlation of mental age and speechreading scores was +.36.
9. Teachers ranks correspond approximately to test ranks.
10. Totally deaf subjects fell 5.6 points below the average score of the test group as a whole.
11. Hard of hearing subjects did slightly better on the test, average score of 40, than the test group as a whole composed of deaf and severely hard of hearing children. However, some of the hard of hearing children were poorer speechreaders, according to test results, than the average severely handicapped subjects.
12. The average score for boys was 40 and the average score for girls was 30. The average for the group as a whole was 37.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

The purposes of this study were (1) to develop a Clinical Speechreading Test for young children with a hearing handicap, and (2) to apply the test to a group of young deaf children. After the development of the test, it was applied to a selected test group of young children with severe hearing losses. The following conclusions may be made at the completion of this test experiment:

1. The test is a valid test of speechreading.
2. The test is suitable for children at the pre-reading level.
3. The test is a useful clinical tool.

A. The test is a valid test of speechreading. The validity of the Clinical Speechreading Test may be shown by the correspondence of test results with an outside measure of the same function, that is, the teachers' ratings of the speechreading achievement of the test subjects. A comparison of ranks assigned by teachers (Table VIII) within class groups and the test rank within class groups shows a close relationship with the exception of Group #2, where only a low degree of correspondence is shown.

Utley states that the validity of a speechreading test may be established by, ". . . its logical derivation as a work-sample from every-day life."[1] This is consistant with the commonly accepted method

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[1]Utley, op. cit.

of teaching which emphasizes natural language for hearing handicapped children. Teachers of the deaf recommend the use of "meaningful connected language" in speaking to deaf children.[2]

To provide valid, representative language samples for the Clinical Speechreading Test, construction was based on developmental studies of language acquisition and vocabulary studies of the speech of young children including a study on the language and vocabulary development of deaf children.

Words used in the test appear in the first one thousand words contained in one to five of the vocabulary studies employed.[3] Language forms were restricted to those types of language which are learned by hearing children at the age of three years. There are two exceptions to this: (a) color naming, which is often not acquired until a child is 48 months of age, and (b) counting four objects, usually not learned before 60 months. Many of the language skills required on the Clinical Speechreading Test are acquired by normal hearing children at the twenty-four month level of development.

It is believed that the test is a valid one not unduly influenced by factors of chronological age, mental age, I. Q., and school placement because of the low relationship between speechreading scores and other measures.

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[2]New, op. cit.

[3]An exception was made in the case of two words not included in the vocabulary studies, "daddy" and "television."

B. The test is suitable for children at the pre-reading level.

Actual use of the Clinical Speechreading Test showed that children can carry out the tasks with ease as long as they are able to speechread the material. The children at the ages tested enjoyed the test and did not react with negativism to test tasks. No child in the group tested refused the test in whole or in part. The test was flexible enough to allow for individual differences among children without altering the speechreading material.

The test can be evaluated as a test for young children by applying criteria for judging tests for preschool children such as those outlined by Stutsman in evaluation of the Merrill-Palmer Scale.[4]

(a) "The test material should have inherent interest for the child."

(b) "A large variety of activities and abilities must be tested."

(c) "There should be variation in difficulty of the test items."

(d) "The test results should be influenced as little as possible by the child's training and environment."

(e) "These tests should be easy to administer."

(f) "The methods of scoring should be objective, eliminating subjective judgment."

(g) "The test items should show a marked differentiation between age groups included in the study."

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[4]Stutsman, loc. cit.

After reviewing the test in terms of this criteria, it can be said that the test was interesting to the children. It tested a wide range of speechreading activities; each of the twelve test sections tested a different type of vocabulary and required different types of responses. There was a wide range of difficulty among the test questions as shown on Table V and discussed in Chapter V. The test results of a speechreading test, unlike an intelligence test such as the Merrill-Palmer Scale, will be influenced by training. Local differences in customs and vocabulary may influence test results. Such cultural differences should be kept to a minimum. For example, some children had difficulty in recognizing foods on the test because they were unfamiliar to them. To prevent such cultural differences, alternate questions should be provided for each section of the test.

The test was easy to administer and scoring was objective. Subjective judgements about a child's test behavior could be recorded on the Information Sheet.

Differences in speechreading ability are not always found by age groupings, or even academic ability groupings. A speechreading test should rather, differentiate on the basis of speechreading ability and may be verified by teacher's judgements.

As applied to the age group for which the Clinical Speechreading Test was developed, pre-reading children from three to nine years, the test was found to be suitable in both form and content.

C. The test is a useful clinical tool. The Clinical Speechreading Test, while not a standardized test, is useful as a clinical

instrument because it permits the examiner to see how an individual reacts to the variety of speechreading activities included in the test. Each of the twelve parts of the test shows a different type of vocabulary. Tests include identification of objects, pictures, colors, numbers, foods, clothing, animal names, following simple directions, action verbs, use of comparatives, identifying parts of the body, and simple home activities.

The clinical examiner can obtain an objective score and also have an opportunity to observe and record subjective impressions of a child's speechreading performance during a twenty minute individual test. Characteristics of individual children which may be observed are the tendency to tire easily, poorly developed attention span, distractibility, excessive guessing and other qualities of personality which can affect speechreading development. An observant examiner will gain more knowledge about a child's speechreading behavior than just the number score of the test and this information can be used in setting up an educational program for the child so examined.

D. Recommendations. The results obtained when a group of young deaf children were tested, as proposed in the problem, by the test developed in this paper indicate that it would be worthwhile to revise the test and apply it to a large population for purposes of standardization. Minor changes are recommended before the test is used further. These changes are listed on the following page, Table XI.

TABLE XI

RECOMMENDED CHANGES IN THE CLINICAL SPEECHREADING TEST

Test Characteristic	Changes Indicated	No Change
1. Language	There should be more variety of sentence structure and a few longer speech samples.	
2. Vocabulary	Provide alternate test words for culturally influenced words such as names of animals, toys, food, clothing, and home activities.	
3. Phonetic content		X
4. Form	Easiest questions should appear in first half of test. Adopt new form for Part A.	
5. Material	Interchange cooky and candy, using candy as object test, cooky as picture test. Add extra pictures to cards to discourage guessing.	
6. Administration		X
7. Scoring		
Part A	Unsatisfactory.	
Part B		X
8. Range		
Part A	Very poor. Entire Test A should be changed to observation and interview with a prepared checklist.	
Part B		X

The suggestions for revision given in Table XI were incorporated into a Revised Clinical Speechreading Test which appears in the Appendix. The entire Test A was dropped and in its place is a checklist to be used in an interview with a child's parents in those cases in which a child cannot be tested with the Clinical Speechreading Test.

Recommendations for the further investigation of this method of assessing the speechreading development of pre-reading hearing handicapped children are:

1. Revise the test as suggested on page 126.
2. Extend the range of the test downward by addition of an interview checklist.
3. Apply the test to a large population of hearing handicapped children for the purpose of standardization.
4. Apply the test to groups of children possessing different degrees of hearing ability, normal, moderately hard of hearing, severely hard of hearing, adventitiously deaf, and congenitally deaf.
5. Study the test results in relation to other factors influencing speechreading ability such as
   (a) age
   (b) I. Q.
   (c) educational achievement
   (d) language training differences

(e) sex

(f) years of training.

Such a study could help reveal the little understood development of speechreading ability among children. Although much time is devoted to speechreading training, it is difficult to assess the value of different types of training without adequate measures of the resulting differences in speechreading achievement. Some measures have been devised to test speechreading of older school children, but little is known about this skill among young children because of the complete lack of testing instruments for measuring speechreading at a pre-reading level.

BIBLIOGRAPHY

BIBLIOGRAPHY

1. Books

Best, Harry. Deafness and the Deaf in the United States. New York: The Macmillan Company, 1943. 678 pp.

Buckingham, Burdette Ross and E. W. Dolch. A Combined Word List. New York: Ginn and Company, 1936. 184 pp.

Carmichael, Leonard (ed.). Manual of Child Psychology. New York: John Wiley and Sons, Incorporated, 1946. pp. 476-591.

Dahl, Loraine Anson. Public School Audiometry, Principles and Methods. Danville, Illinois: Interstate Printers and Publishers, 1949. 290 pp.

Davis, Hallowell. Hearing and Deafness, A Guide for the Layman. New York: Murray Hill Books, Incorporated, 1947. 489 pp.

de Land, Fred. The Story of Lipreading, Its Genesis and Development. Revised and completed by Harriet Andrews Montague.

Eisenson, Jon and Mildred Berry. The Defective in Speech. New York: F. S. Crofts and Company, 1942. p. 330.

Ewing, Alexander William Gordon and Irene Ewing. The Handicap of Deafness. New York: Longmans Green and Company, 1938.

Goodenough, Florence L. Goodenough Intelligence Test for Kindergartens and Primary Grades. Yonkers-on-Hudson: World Book Company, 1954. 173 pp.

Hodgson, Kenneth W. The Deaf and Their Problems, A Study in Special Education. New York: Philosophical Library, 1954. 364 pp.

Introduction to Lip Reading. New York: Better Living Foundation, 1939. 66 pp.

Lassman, Grace. Language for the Preschool Deaf Child. New York: Grune and Stratton, 1950. 263 pp.

Merry, Frieda Kiefer and Ralph Vickers Merry. The First Two Decades of Life. New York: Harper and Brothers, 1950. 600 pp.

Montessori, Maria. The Montessori Method. New York: Fredrick A. Stokes Company, 1912. 377. pp.

New Aids and Materials for Teaching Lipreading. New York: Works Project Administration, 1939. 169 pp.

Pintner, Rudolph, Jon Eisenson, and Mildred Stanton. Psychology of the Physically Handicapped. New York: F. S. Crofts, and Company, 1941. 391 pp.

Skinner, Charles E. (ed.). Readings in Educational Psychology. New York: Farrar and Rinehart, Incorporated, 1937. p. 420.

Stutsman, Rachel. Mental Measurement of Preschool Children. New York: World Book Company, 1931. 368 pp.

Terman, Lewis and Maud A. Merrill. Measuring Intelligence. New York: New York: Houghton Mifflin, Incorporated, 1937. pp. 75-84.

Whildin, Olive Aida and M. A. Scally. The Newe r Method in Speech Reading for the Hard of Hearing Child. Westminister, Maryland: Newman Press, 1948. 148 pp.

Wrightstone, Wayne, Joseph Justman, and Irving Robbins. Evaluations in Modern Education. New York: American Book Company, 1956. p. 4.

2. Publications of the government, learned societies and other organizations

The Handicapped and the Gifted. Report of the Committee on Special Classes, Wh ite House Conference on Child Health and Protection, Section III, Education and Training. New York: The Century Company, 1931. pp. 277-346.

Heider, F. and G. Heider. "An Experimental Investigation of Lipreading," Psychological Monographs, Volume 52, #232, 1949. 153 pp.

Horn, Ernest. The Commonest Words in the Spoken Vocabularies of Children up to and Including Six Years of Age. The Twenty-Fourth Yearbook of the National Society for the Study of Education, 1925.

Hughes, Marie M. Teaching a Standard English Vocabulary With Initial Reading Instruction. Las Cruces, New Mexico: Bronson Printing Company, 1932. 177 pp.

Meyer, M. F. Fitting Into A Silent World. University of Missouri Studies, Volume 9, #2, 1934. 106 pp.

Thorndike, Edward L. A Teachers Word Book of the Twenty Thousand Words Found Most Frequently and Widely in General Reading for Children and Young People. New York: Bureau of Publication, Teachers College, Columbia University, 1932. 182 pp.

Waldman, John, Francis A. Wade, and Carl Aretz. Hearing and the School Child, Hearing, School Progress, and Achievement of Public School Children. Philadelphia: Teachers College, Temple University, Doctoral Dissertation; Part III "Hearing and Subject Achievement" Chapter IV "Speech Reading Achievement," 1930. pp 177-189.

3. Periodicals

"A Half Century of Progress in the New England Schools," The Volta Review, 42:73-74, February, 1940.

Andrews, Harriet U. "Home Training for Deaf Children," The Volta Review, 19:145-174, April, 1917.

Association Committee Report. "Speech Reading in Schools for the Deaf," The Volta Review, 44:614-617, November, 1942.

"A Summer Meeting Panel Discussion," The Volta Review, 54:421-, June, 1952.

Bell, Mable Hubbard. "Speech Reading," The Volta Review, 42:607, October, 1940.

Bennett, Daphne Nicholson. "Home Teaching of Young Deaf Children: A Pointer in Parent Education," The Journal of Speech and Hearing Disorders, 22:68-74, 1957.

Berg, Marie. "The Lip Reading Problem According to Brauchmann," The Volta Review, 29:268-273, June, 1927.

Berlinsky, Stanley. "Measurement of the Intelligence and Personality of the Deaf: A Review of the Literature," The Journal of Speech and Hearing Disorders, 17-39-54, March 1952.

Boshler, Irene E. V. "Mental Tests," American Annals of the Deaf, 20:193-195, April, 1918.

Bruhn, Martha E. "Relative Skill in Lip-Reading," The Volta Review, 19:220-222, May, 1917.

Buchman, Martha. "The Role of Language in Speech Training for the Hearing Impaired Child, The Volta Review, 56:205-208, May, 1954.

Bunger, Anna M. "Appraising Progress in Speech Reading," The Volta Review, 26:503-504, October, 1924.

_____. "On Being Converted to the Jena Method," The Volta Review, 31:705-708, October, 1929.

Carr, Josephine. "A Limited or Limitless Vocabulary Through Speech-Reading," The Volta Review, 56:109-113, March, 1955.

_____. "The Use of Spontaneous Speech," The Volta Review, 44:614-617, November, 1942.

Cavanaugh, Anita. "Nursery and Preschool: A Summer Meeting Panel Discussion," The Volta Review, 54:421-, October, 1953.

"Central Institute for the Deaf Language Outline," American Annals of the Deaf, 95:353-378, September, 1950.

Conklin, Edmund S. "A Method for the Determination of Relative Skill in Lip Reading," The Volta Review, 19:216-219, April, 1917.

Crawley, Edward,F. "Television and the Hearing Handicapped," Hearing News, 26:3-4, January, 1958.

Cypreansen, Lucile and Jack McBride. "Lipreading Lessons on Television," The Volta Review, 58:341-345, October, 1956.

Day, Herbert. "A Study of the Proceeding of the Convention of American Instructors of the Deaf, 1850-1949, Part IX, Bette LaVerne Rauth and Warren Wesly Rauth, American Annals of the Deaf, 100:445, November, 1955.

Di Carlo, Louis M. and Raymond Rataja. "An Analysis of the Utley Lip-reading Test," The Journal of Speech and Hearing Disorders, 16:226-240, September, 1951.

Doctor, Powrie V. "Bibliography for the Teaching of Vocabulary to the Deaf," The Volta Review, 56:217-218, May, 1954.

Ellis, Vaughn E. "Lipreading at Northwestern," The Volta Review, 52:26, January, 1950.

Ewing, Irene R. "Eleanor Has Made History, What Next?" The Volta Review, 50:151, April, 1948.

_____. "Training Deaf Babies," The Volta Review, 47:208-209, 254, April, 1945.

Groht, Mildred. "Language for the Deaf," The Volta Review, 55:243-245, May, 1953.

Heider, Grace Moore. "Psychological Research in Lip Reading and Language," The Volta Review, 36:517-520, September, 1954.

_____. "The Utley Lip Reading Test," The Volta Review, 49:457-458, October, 1947.

Hiskey, Marshall. "Determining Mental Competence Levels of Children With Impaired Hearing," The Volta Review, 52:349-406, August, 1950.

Hoffman, Virginia. "Preschool Classes at the Lexington School," The Volta Review, 42:144-146, March, 1940.

Hudgins, C. V. "Lipreading and Hearing Aids," Hearing News, 16:8-10, 20-22, 1948.

Kitson, H. D. "Psychological Tests for Lip-Reading Ability," The Volta Review, 17:471-476, November, 1915.

Levine, Edna Simon. "Psychological Sidelights, Tests and Teachers," The Volta Review, 50:152, April, 1948.

"Lip Reading in Present Day Education, The Lip Reading Vocabulary at John Tracy," The Volta Review, 50:445-449, September, 1948.

Mason, Marie K. "A Laboratory Method of Measuring Visual Hearing Ability," The Volta Review, 34:510-516, October, 1932.

_____. "Objective Scoring in Tests of Visual Hearing," The Volta Review, 39:576-581, October, 1937.

_____. "Teaching and Testing Visual Hearing by the Cinematographic Method," The Volta Review, 44:703-705, December, 1942.

Montague, Harriet. "Lip Reading for Soldiers," The Volta Review, 45: 640, 654, November, 1943.

Moore, Lucelia Miller. "Life Situation Motion Pictures for Teaching," The Volta Review, 44:705-707, December, 1942.

Myklebust, Helmer R. "Clinical Psychologists and Children With Impaired Hearing," The Volta Review, 50:55-56, February, 1948.

_____. "Function of a Psychologist in a Residential School for the Deaf," The Journal of Consulting Psychology, 4:236-237, September-October, 1945.

New, Mary C. "The Deaf Child's Speech Vocabulary," The Volta Review, 56:105-108, March, 1954.

Nitchie, Edward B. "Tests for Determining Skill in Lip Reading," The Volta Review, 19:222-223, 1917.

"Participation of the Hearing Impaired Child in Life Situations," Better Hearing, Spring, 1957, p. 12.

Peterson, Edwin G. and James M. Williams. "Intelligence of Deaf Children as Measured by Drawings," American Annals of the Deaf, 75:273-290, 1930.

Pintner, Rudolph. "Speech and Speech Reading Tests for the Deaf," Journal of Applied Psychology, 13:220-225, March, 1929.

_____. "Techniques and Methods of Testing and Interpretation," Psychological Bulletin, 51, March, 1954.

_____. "The Measurement of Language Ability And Language Progress of Deaf Children," The Volta Review, 20:755-764, December, 1918.

Pintner, Rudolph and Donald G. Patterson. "Some Conclusions from Psychological Tests of the Deaf," The Volta Review, 20:10-14, January, 1918.

Pittinger, Prischilla. "The Development of Language," The Volta Review, 60:12-20, January, 1958.

Pugh, Bessie. "The Speech Vocabulary of Young Deaf Children," The Volta Review, 48:267, May, 1946.

Reid, Gladys. "Problems in Testing," The Volta Review, 48:660-661, November, 1945.

Rodin, Frank H. "Lighting Problems in Lip Reading," The Volta Review, 34:367, August, 1932.

Shirley, M. and F. L. Goodenough. "A Survey of Intelligence of Deaf Children in Minnesota Schools," American Annals of the Deaf, 77:238-247, 1932.

Speech Reading in Schools for the Deaf," Association Committee Report, The Volta Review, 44:614-617, November, 1942.

Steed, B. "Speech Reading and How it Grows," The Volta Review, :69-74, 122, 123, February, .

Timberlake, Josephine B. "A Lipreader Less Than A Year Old," The Volta Review, 51:32, 46, January, 1949.

Utley, Jean. "Factors Involved in the Teaching and Testing of Lip Reading Ability, The Use of Motion Pictures," The Volta Review, 48:657-659, November, 1946.

APPENDIX

Clinical Speechreading Test

Name_____ Date_____ Score_____

Birthdate_____ Age_____Mental Age_____I.Q.___

Previous Training_____Teacher_____

Hearing_____Speech_____

Checklist for subjects who do not respond to test:

(1) Does child attend to face?_____

(2) Does he use gestures?_____

(3) Does he respond to gestures?_____

To what extent does family resort to gestures?_____

(4) Does he inhibit on command? (speech and/or gesture)____

(5) Will child comply with command, "Give me---." with gesture?_____

(6) Does child follow any other command or direction?_____

Example:_____

(7) Does child speechread the name of any object or person, including his own name?_____

Examples:_____

(8) Can child repeat what he speechreads?_____

Speechreading Evaluation:

Comments:

Directions:

Attract the child's attention to your face before giving item for speechreading. Items may be given up to four times. If child seems to be guessing, repeat previous items as a check.

Scoring:

Perfect score is 70.

Allow one point for each correct answer.

Do not credit guesses.

Score + for correct, - for incorrect, 0 for no response.

If an incomplete test is given, note number of questions attempted.

Part I. Identification of objects

Present objects on table in front of child in order named:
fish, shoe, ball, airplane.

_____(1) SHOW ME THE FISH.

_____(2) SHOW ME THE BALL.

_____(3) SHOW ME THE SHOE.

Replace objects and present:
top, bow, baby, gun.

_____(4) SHOW ME THE BOW. (alternate, button)

_____(5) SHOW ME THE TOP. (alternate, paper)

_____(6) SHOW ME THE GUN.

Replace objects and present:
chair, car, toothbrush, airplane.

_____(7) SHOW ME THE CHAIR.

_____(8) SHOW ME THE AIRPLANE.

_____(9) SHOW ME THE TOOTHBRUSH.

Replace objects and present:
candy, bell, watch, gun.

_____(10) SHOW ME THE BELL.

_____(11) SHOW ME THE CANDY.

_____(12) SHOW ME THE WATCH.

Replace objects and present:
bus, table, car, shoe.

_____(13) SHOW ME THE TABLE.

_____(14) SHOW ME THE CAR.

_____(15) SHOW ME THE BUS. (alternate, train or choo-choo)

Part 2 Numbers

Place the blocks on table in front of child. Demonstrate the task: say THREE. Take three blocks and place them close to you. Replace the block and repeat the word THREE, gesturing for the child to push them toward you. Proceed with test.

_____(16) ONE

_____(17) FOUR

_____(18) TWO

_____(19) THREE

Part 3 Picture identification

Present Test Card (a) Say,

_____(20) SEE BABY? WHERE IS BABY? (alternate: mommy, mama)

Present Test Card (b) Say,

_____(21) WHERE IS MOTHER? (alternate: mommy, mama)

_____(22) WHERE IS DADDY? (alternate: father, pappa)

_____(23) WHERE IS THE BOY? WHERE IS BROTHER? (alternate: girl or sister)

Present Test Card (c) Say,

_____(24) POINT TO THE BIRD.

_____(25) POINT TO THE DOG.

_____(26) POINT TO THE HAMMER. (alternate: scissors)

Present Test Card (d) Say,

_____(27) POINT TO THE T.V.(or television) (alternate: man)

_____(28) POINT TO THE BOAT.

_____(29) POINT TO THE HOME. (or house)

Part 4 Colors

Place the color squares before child two at a time. Say the name of one color and reach out your hand to receive it. Replace. Test until you are satisfied about the child's ability to read the color name.

_____(30) YELLOW-BLUE

_____(31) BLACK-WHITE (alternate any pair of colors in test box)

_____(32) RED-BROWN (may use alternate if you believe child knows other colors. Score plus for any three color pairs.)

Part 5 Longer sentences

Present Test Card (e) Say,

_____(33) WHO PUT ON HER SHOES?

_____(34) WHO EATS HER DINNER? (or supper)

Present Test Card (f) Say,

_____(35) WHICH ONE PLAYS BALL?

_____(36) WHICH ONE JUMPS ROPE? (alternate, which one takes a bath?)

Present Test Card (g) Say,

_____(37) WHO SLEEPS IN BED? (or who goes to bed?)

_____(38) WHO READS A BOOK? (alternate, who builds blocks?)

Part 6 Use of Comparatives

Place the large ball, small ball, large baby, small baby in a row on the table. Check against guessing.

_____(39) GIVE ME THE BIG BABY. GIVE ME THE LITTLE BABY.

_____(40) GIVE ME THE BIG BALL. GIVE ME THE LITTLE BALL.

(These must be correct with regard to object and size.)

Part 7 Foods

Present Test Card (h) to child. Allow him to examine it and proceed. (Alternates, foods not common to locality may be changed to other foods.)

_____(41) SHOW ME THE APPLE.

_____(42) SHOW ME THE WATER.

_____(43) SHOW ME THE PIE.

Continue with Card (i)

_____(44) SHOW ME THE ORANGE.

_____(45) SHOW ME THE MILK.

_____(46) SHOW ME THE BREAD.

Continue with Card (j)

_____(47) SHOW ME THE BANANA.

_____(48) SHOW ME THE MEAT.

_____(49) SHOW ME THE COOKIES.

Part 8 Parts of the body

Put your hand on your face and say, THIS IS MY FACE. WHERE IS YOUR FACE? SHOW ME YOUR FACE. Repeat this demonstration until child understands what is expected.

_____(50) WHERE IS YOUR ARM?

_____(51) WHERE IS YOUR MOUTH?

_____(52) WHERE ARE YOUR EYES?

_____(53) SHOW ME YOUR NOSE.

_____(54) SHOW ME YOUR THUMB.

_____(55) SHOW ME YOUR TEETH.

IMPORTANT!

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