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# A Comparative Analysis of the Untrained Lip Reading Ability of Mothers of Young Hard of Hearing Children Versus Mothers of Young Normal Hearing Children

Janet Andrews Boileau  
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A COMPARATIVE ANALYSIS OF THE UNTRAINED LIP READING  
ABILITY OF MOTHERS OF YOUNG HARD OF HEARING CHILDREN VERSUS  
MOTHERS OF YOUNG NORMAL HEARING CHILDREN

by

JANET ANDREWS BOILEAU

A substantial paper submitted in partial fulfillment  
of the requirements for the degree of

MASTER OF SCIENCE  
in  
SPEECH  
with emphasis in  
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Portland State University  
June 1970



The substantial paper of JANET ANDREWS BOILEAU has  
been approved as presented on May 18, 1970.

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James F. Maurer, Ph.D.

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## CHAPTER I

### HISTORICAL BACKGROUND

The growth of speechreading is parallel to, and interwoven with, the growth of the education of the deaf. Before the beginning of the twentieth century, information about the deaf was ". . . transmitted by tradition through literature, reinforced and demonstrated on the basis of anecdotal incidents, and formulated into general principles without factual support (DiCarlo, 1964, p. 8)." The deaf were considered mentally deficient and socially inadequate. The struggle to remove and discard such labels and misconceptions has been a centuries-long process. Today, the deaf still continue the fight to emancipate themselves from the prejudices and persecutions of the past.

In the years before A.D. 1400 the deaf were forced to seek survival alone. The deaf, often forced to live outside of organized society, had to struggle for existence. The weakest did not survive. Existence for those who were stronger was meager (DiCarlo, 1964, p. 10).

Unable to carry a normal load in groups struggling for existence, the deaf were then cast out from the chosen ranks of society. The Athenian people were governed by the concept of Harmony, which meant the functioning of parts as

a harmonious unit. The deaf clearly violated this principle and as a result they were not accepted by the Athenian society. Likewise, the Spartans allowed citizenship only to those who could contribute physical strength under arms. The deaf were once again rejected as they were unable to perform such duties.

During the Greek Empire, status was gained only when intellectual, physical, and cultural fitness exceeded all else. Individuals not capable of acquiring such skills did not survive. The forces of society as well as nature determined the fate of the handicapped (DiCarlo, 1964, p. 11).

The Hebrews were one of the first communities to accept the deaf. Hebrew law distinguished among the deaf who had speech, among those who were able to hear but were mute, and among those who were both deaf and dumb. They enacted laws which took all responsibility from the deaf-mute and specified legal rights of the deaf as well as the legal rights of the mute. These laws are considered to be one of the earliest examples of differential diagnosis (DiCarlo, 1964, p. 11).

An observation by Aristotle has had considerable bearing upon the problem of the deaf. He felt that deafness and dumbness (lack of speaking ability) were interrelated. In other words, he indicated that even though the deaf had voice, they were speechless. The term "dumbness" and Aristotle's incorrect inference of a cause and effect



relationship of deafness and mutism, delayed deaf education hundreds of years (O'Neill and Oyer, 1961, p. 10).

The Roman law classified the deaf and mute with the mentally deficient, as did the Greek. Although during the reign of Justinian (sixth century A.D.), the Justinian Code followed much of the same principles as the Hebrew laws, deaf-mutes were not allowed to enter into contracts or to witness in court, or to engage in other rights and obligations of citizenship. The Code made a sharp differentiation between those with congenital deafness and mutism and those whose deafness was acquired and who had learned to speak and read prior to becoming deaf. Classifications included:

- 1) The deaf and dumb in whom both infirmities were present from birth . . . .
  - 2) Those who became deaf and dumb from causes arising after birth. . . .
  - 3) Those deaf from birth, but not dumb. . .
  - 4) Those deaf from causes arising after birth, but not dumb. . . .
  - 5) Those who were dumb only
- (DiCarlo, 1964, p. 13).

Here again one observes the emergence of differential diagnosis (Davis and Silverman, 1970, p. 376).

With the fall of the Roman Empire, the church became a dominant institution in European civilization. This was unfortunate for the deaf, since the Mosaic Law, through its Code of Holiness (sixth century B.C.) requested the faithful to accept the deaf because their deafness was willed by the Lord. The Christian Church believed the Lord was the healer

of the oppressed and He was the only salvation for the deaf. Consequently, no attempt was made to educate those, who like the lepers, could not overcome the Lord's will through any effort of their own (Davis and Silverman, 1970, p. 376).

Although the Christian Church did permit the deaf the right of marriage, it looked with disdain upon the intellectual capabilities of the hearing handicapped. It was not until about the seventh century A.D. that Bede, in his writings, made reference to an attempt at deaf education. Bede wrote of Bishop John of York, who taught a deaf-dumb youth to speak intelligibly. This accomplishment was considered to be a miracle and no mention was ever made of the teaching method employed (Davis and Silverman, 1970, p. 376, and DiCarlo, 1964, p. 13).

Man's intellectual curiosity about deafness lay dormant and in darkness until about the middle of the sixteenth century, when the mists began to lift. Some people began to search for knowledge about the mute phenomena once again, only this time the search was tempered by the desire to contribute to humanity. The deaf, at last, received the attention of a few intellectually curious men (DiCarlo, 1964, p. 14).

Leonardo da Vinci was among the first to infer that speech reading was of value to the deaf. He observed that some deaf individuals were able to interpret conversation by watching gestures and movements of conversation. Da Vinci



stated:

I once saw in Florence a man who had become deaf, who could not understand you if you spoke loudly, while if you spoke softly without letting the voice utter any sound he understood you merely from the movements of the lips. . . .  
(DiCarlo, 1964, p. 14).

This was a significant contribution to the field of deaf education.

Girolamo Cardano, an Italian philosopher and physicist, insisted the deaf could be taught to express themselves through reading and writing. He proposed a set of principles which explained how the deaf could be taught to comprehend written symbols by associating the symbols with pictures or objects which they were supposed to represent. The value of Cardano's principles lies not in the method he suggested, but in his absolute rejection of the idea that the deaf were mentally incompetent and uneducable. Cardano contributed 230 books to the field of speech pathology and audiology, along with numerous experiments pertaining to research in audiology (Feldman, 1960, p. 14).

Pedro Ponce de Leon, a Spanish monk, is believed by most historians to be the first teacher of deaf-mutes. In 1555, Ponce de Leon was offering oral education to deaf children of the nobility. He not only inferred or philosophized about the ability of the deaf to learn language, but he also taught them (Davis and Silverman, 1970, p. 377, and DiCarlo, 1964, p. 15).

One of the first to distinguish between the deaf (people who heard no sound) and the hard of hearing (people who heard loud sounds) was Solomon Alberti of Germany (DiCarlo, 1964, p. 16). This has also been a major contribution to the study of deafness.

Juan Pablo Bonet wrote a book which was published in 1620 titled, The Method of Teaching Deaf Mutes to Speak. It is the first book written dealing with the oral method. Although Bonet believed that lip reading was a very valuable tool for the deaf, he felt that it was a skill that could be acquired by only a few. He believed that students practicing lip reading with devotion and concentrated efforts would be able to (lip) read only their teacher and no transfer would be made to other lip reading situations (O'Neill and Oyer, 1961, p. 10).

In 1648, John Bulwer wrote, The Deafe and Dumbe Man's Friend. Bulwer looked upon lip reading as the avenue through which the deaf could learn to speak. Dalgarno, Bulwer's Scotch contemporary, did not advocate lip reading as a part of deaf education. In his book, The Deaf and Dumb Man's Tutor, Dalgarno was enthusiastic about the use of finger-spelling or manual alphabetization. But he did believe that the deaf could learn to speak and write (DiCarlo, 1964, p. 20 and O'Neill and Oyer, 1961, pp. 10-11).

During the seventeenth and eighteenth centuries, continued interest in deaf education and especially in lip



reading continued to grow and develop. Differences in ideas resulted in the publication of numerous books defending either the oral language or sign language positions. The impact of the books meant the establishment of basic methods of instruction (Myklebust, 1966, pp. 246-272).

Johann Konrad Amman, a Swiss physician, became interested in teaching deaf-mutes. Because of his success with his pupils, in 1962 he published The Speaking Deaf. He wanted all deaf and hearing handicapped to benefit from his methods. He was a staunch believer in oral-language education. Among his major techniques were:

1. Names of familiar and obvious things were taught first . . . .
2. The pupils learned speech by seeing the positions of the different sounds. The use of mirrors was advocated for practicing speech, and the sense of touch was utilized for sounds which were not immediately visible. The pupils were able to learn the voiced sounds by touching their hands to their throats.
3. Amman's main concern was that the deaf develop their voices clearly and maintain the ability to control pitch and loudness.
4. Amman employed lipreading as an integral part of learning language and communication. He even had his pupils take lipreading dictation as he mouthed sentences from a book.  
(DiCarlo, 1964, p. 22)

Amman's method had a significant influence on the establishment of oral-language teaching methods in Germany. Two Germans, L. W. Kerger and Georg Raphael, were responsible for developing the oral teaching method in Germany, where it grew to be the national system for educating the deaf.

In the early eighteenth century, an Englishman, Henry Baker, became the instructor of a young deaf girl. He was so pleased with her success in lip reading, reading and writing that he established his own small private school. Baker did not write about his methods and to ensure secrecy of his methods, he asked a bond from his students.

About the same time (1720) Jacob R. Pereire, a Spaniard, worked with some of the deaf in France. His teaching included both lip reading and the manual alphabet. Pereire was recognized as an authority in deaf education, but little is known about his methods as he, too, failed to record his activities (Watson, 1961, p. 26).

Around 1784, Abbé de l' Epeé became known as one of the leaders of deaf education in France. At his own expense, he began a school for the deaf in Paris. He incorporated both lip reading and manual signing into the program. De l' Epeé devoted most of his life to the development of a successful on-going program for the deaf. The government of France eventually contributed funds to the school, resulting in an immediate population increase. De l' Epeé devoted time to training teachers of the deaf. The consequence of the soaring increase in the number of his pupils, coupled with a lack of instructor time, was that de l' Epeé changed to the more expedient manual method (Feldman, 1960, p. 2).

Abbé Sicard, one of de l' Epeé's teacher trainees, was selected to head a deaf school in Paris. Sicard published a



dictionary which included de l' Epee's principle of signs. The manual method became more firmly entrenched (O'Neill and Oyer, 1961, p. 12 and DiCarlo, 1964, p. 26).

In Germany, Samuel Heinicke promoted and supported the oral approach to language in teaching the deaf. Heinicke felt that deaf children were capable to speaking and he began teaching language from the very beginning stages in the program. He emphasized the importance of lip reading in understanding speech. Heinicke and de l' Epee argued about the appropriate methodology for educating deaf children. They engaged in a great letter-writing controversy on the matter, without convincing each other. The school switched from the oral to the manual method after Heinicke's death, and it was not until the next century that the oral method was revived by F. M. Hill (Quigley, 1965, p. B-3).

In England Thomas Braidwood was responsible for the development of lip reading instruction. Among his students was an American child, Charles Green. His father, Francis Green, realized the value of education for the deaf and began a large scale promotion in England and the United States for public-supported deaf education programs, but his efforts failed.

The grandson of Thomas Braidwood, John Braidwood, established a school for the deaf in 1815, in Cobbs, Virginia. His attempts were met with little success (O'Neill and Oyer, 1961, p. 13).

Thomas Hopkins Gallaudet in the United States became intensely interested in deaf education and went to England in 1817 to study the Braidwood method of oral education. Some authors feel the Braidwoods did not accept Gallaudet's desire to learn both the oral and manual method of teaching and were hesitant to accept him as a trainee (Davis and Silverman, 1970, p. 378 and DiCarlo, 1964, p. 29). Others feel that the Braidwoods were not eager to train someone who might return to the United States and open a school in competition with John Braidwood's Virginia school (O'Neill and Oyer, 1961, p. 13).

Quigley (1965, pp. B-3 - B-4), in a thorough review of this early history, suggests that Gallaudet was sent to Europe by Dr. Mason Fitch Cogswell to study methods of educating the deaf. Dr. Cogswell had a daughter, Alice, who became deaf at the age of two after an attack of cerebro-spinal meningitis. Gallaudet, a neighbor of Cogswell's, became very interested in the problems faced by nine-year-old Alice and attempted to give her written language. Because of his concern, Gallaudet was chosen to go to Europe to study new ways to educate the deaf.

Gallaudet explained to Thomas Braidwood (grandson of the elder Thomas Braidwood) that he intended to study the Braidwood method for a few months and then to study the *de l' Epee* method under Abbé Roch Ambroise Cucurron Sicard in Paris. Sicard was elected director of the Paris school



after de l' Epee's death. The Braidwoods felt Gallaudet should study their method for three years under Joseph Watson in the school for the deaf in London.

Quigley (1965, p. B-4) explains the events that led Gallaudet to Paris:

. . . At about this time the Abbé Sicard arrived on a lecture tour in London with two of his most famous pupils, Jean Massieu and Laurent Clerc. Gallaudet was so impressed with the demonstrations of these pupils that he abandoned negotiations with the Braidwoods and travelled to the school in Paris to study with Sicard.

At the school in Paris, Gallaudet became good friends with Laurent Clerc, a deaf student, and within two months the two men travelled to America to begin a school for the deaf. Four years later the school received federal subsidization and was established as the American Asylum for the Deaf.

The number of schools in America for the deaf grew until they numbered twenty in 1860. All of the schools adopted the manual method because of its outstanding success.

Two American educators, Horace Mann and Samuel Howe, visited schools for the deaf in England and Germany and returned home with very favorable and enthusiastic reports about the oral method. The manual system of teaching prevailed until 1867, when John Clarke donated \$50,000 to help establish a school for the deaf with the contingency that the oral method be stressed. Two years after the opening of Clarke School, a school was opened in Boston with Sarah Fuller as principal. After hearing a lecture by Alexander



Melville Bell on visible speech, she invited him to the school for the purpose of training teachers. Melville Bell was unable to accept, so he sent his son Alexander Graham Bell. From this time on, lip reading and oral language for the deaf received more support from the public. Teachers of the oral method soon became masters of their art and lip reading was accepted as a method of communication for the deaf (O'Neill and Oyer, 1961, pp. 14-15).

The American Annals of the Deaf, a magazine centered around the teaching of lip reading, was first published in 1847. A later publication, the Volta Review, was sponsored by the American Association to Promote the Teaching of Speech to the Deaf. In 1894, the Volta Bureau was formed in Washington, D. C. The Bureau focuses on problems encountered by the acoustically handicapped. It provides placement information for teachers, publishes materials for use with those with impaired hearing, and provides personal advice to the aurally handicapped.

After 1890 lip reading was offered to adults as well as children. Lillie E. Warren was one of the first adult lip reading instructors. Warren's approach was called the numerical cipher method. The students would associate certain numbers with certain sounds. Warren felt there were sixteen facial configurations for the English speech sounds. The number of each configuration was one of the sixteen basic sounds (O'Neill and Oyer, 1961, p. 15).



In 1894 Mrs. A. G. Bell suggested that teachers of the deaf make more use of the synthetic approach. Rather than analyzing the various mouth positions of sounds, she felt concentration should be placed on grasping the entire meaning of the message. She did not feel that each word or even each sentence had to be understood by the speechreader. Mrs. Bell's own personal experience with deafness made this an important consideration (O'Neill and Oyer, 1961, p. 16).

Martha Bruhn was a noted instructor for the deaf in the twentieth century. She became deaf herself and studied lip reading under Herr Julius Müller-Walle in Germany. Because of her success she founded her own school in America in 1902. The Bruhn method is based upon rapid drill on syllables and sentences and an analytic approach to the study of lip and mouth movements (O'Neill and Oyer, 1961, p. 16). In 1915 Bruhn wrote a book, The Müller-Walle Method of Lip-Reading for the Deaf, which describes the Müller-Walle method, and contains thirty lessons with materials for children from elementary school age up to high school and college age students. Bruhn explains their rationale behind a program for the deaf as being different from the hard of hearing.

. . . And this leads to the point that we wish to emphasize, namely: That the method applied to children is not adapted to the needs of those who lose their hearing in later life. Such persons do not need to learn to speak. It is not necessary for them to know the positions of the various organs of speech in the mouth. For them, the externally visible characteristics are the essential points. For, in natural conversation, when movements are not exaggerated, these external



characteristics alone are visible. Moreover, the hard-of-hearing adult is able to grasp the meaning of a sentence as a whole without a slow pronunciation of each word. He has a much higher aim in view in his wish to follow all conversation in which he was accustomed to take part before becoming deaf (Bruhn, 1915, p. 3).

Edward B. Nitchie was another contributor to deaf education. He was the founder of the New York School for the Hard of Hearing which is now called the Nitchie School of Lip-Reading, Inc. Mr. Nitchie directed all of his attention to lip reading instruction for adults. A tribute to Mr. Nitchie by Elizabeth Brand further explains the change in his method from the analytical to the synthetic:

. . . His great contribution to the teaching art has been the making of lip-reading instruction psychophysiological. The teaching of lip-reading had been up to his time, a physiological process; he made it a mental process . . . (Nitchie, 1930, p. XVI).

Another teacher instrumental in improving lip reading instruction was Cora Kinzie. Miss Kinzie, being aurally handicapped herself, took instruction from Martha Bruhn. In 1914 she opened the Müller-Walle School of Lipreading. Hoping to improve her own lip reading skills, Miss Kinzie went to New York to study under Nitchie. She then created her own method of lip reading instruction through combining the classification of introductory sounds from Bruhn with the psychological aspects from Nitchie. When Cora's sister, Rose, joined her, the school was changed to the "Kinzie School of Speech Reading." Upon retirement from the school, the two sisters developed a series of graded lip reading lessons



(O'Neill and Oyer, 1961, p. 17).

Several individuals, Bessie Whitaker, Jacob Reighard, and Anna Bunger were responsible for introducing the Jena method of Karl Brauckmann to the United States. Reighard translated Brauckmann's book into English and then persuaded Whitaker to use this method with an adult class in lip reading at Michigan State Normal College. Bunger wrote a book that explained the use of kinaesthetic as well as visual cues in the Jena Method.

Although no new methods of lip reading instruction have been introduced since 1930, a technique for supplementing oral speech with manual cues has been devised by Cornett.

Cued speech is designed so that a cue stands for a group of visually non-homophenous sounds; hand cues and lip movements must go together in order to tell exactly which sound is being said. (e.g., The cue for b, n, wh and the lip position for p, b, m have only one sound in common--b. By a process of elimination one learns that the sound being spoken and cued is b.)  
(Feldman, 1969, p. 4)

Marie K. Mason attempted to prepare a series of films for the purpose of teaching lip reading, but her death prohibited publication of the manual. Two others, Morkovin and Moore, advocated the use of films in training lip readers. They placed emphasis on lip reading in a variety of life situations. Everyday situations were also used in the "Film Test of Lip Reading" by the John Tracy Clinic and in Stepp's programmed instruction in lip reading.

Presently, speech pathology and audiology students as



well as teachers of the deaf are offered courses in lip reading instruction. Aurally handicapped children and adults receive lip reading training in many schools and clinics and Veterans Hospitals. The public is becoming aware of the problems of the acoustically handicapped, and much is being done to increase and improve their educational opportunities. Considerable research now centers around the acquisition of lip reading skills. The following pilot study is concerned with such abilities.



## CHAPTER II

### PILOT STUDY

#### Purpose:

Vicarious learning (imitation of the behavior of others) has been witnessed in the everyday activities of life. Mothers of deaf and hard-of-hearing children spend hours observing therapy in the clinic, as well as encouraging and reinforcing communication in the home. They become models for the children to follow and they also follow the model provided by the child. Under such conditions and circumstances, vicarious learning of speech reading skills might be expected to take place. Therefore, if this relationship exists, it could be hypothesized that mothers of deaf and hard-of-hearing children, as a result of observation of speech reading instruction, should obtain a higher degree of speech reading proficiency than mothers of normal hearing children.

This pilot study is to provide a comparative analysis of the lip reading ability of mothers not formally trained in lip reading. A comparison will be made of mothers who have deaf or hard-of-hearing children between the ages of four and seven years and mothers who have normal hearing children of the same age range. This study investigates



whether significant differences exist between the lip reading ability of mothers of hard-of-hearing children as opposed to the lip reading ability of mothers of normal hearing children.

Procedure:

A sample of thirty (30) mothers who had had no formal training in speech reading instruction was obtained from the clinical files at Portland State University Speech and Hearing Clinic and from university volunteers. This group was divided into two samples of fifteen. Form A of the Utley Lip Reading Test (Utley, 1946) was administered to both groups. The mothers of deaf and hard-of-hearing were placed in the experimental group, and mothers of normal hearing were placed in the control group. The Utley Lip Reading Test is a standardized instrument for adults (Appendix B).

The sample was selected on the basis of the results of a questionnaire (Appendix A). Each examinee was provided with the questionnaire, which was designed to determine familial background of hearing loss, amount of formal training in lip reading, if any, amount of observation and/or participation in any formal lip reading training for another member of the family, and amount of training in speech pathology and/or audiology. Only mothers without formal training in speech reading were selected.

The tests were administered in a speech clinic setting.



Two-way mirrors were used as a way to eliminate all auditory cues from the examinees. In addition, each examinee was fitted with a set of aural domes to further insure the elimination of all auditory cues.

All tests were administered by the same individual, a graduate student trained in the administration of speech reading tests. Ten of the subjects were tested at random by another examiner (Examiner II) as a precaution against experimenter bias. Examiner I administered form B of the Utley Test and examiner II administered form A. The Pearson's Product Moment Correlation ( $r$ ) was determined to check the potential bias of the investigator. The result of 0.95 was considerably higher than the test-retest  $r$  for this standardized instrument (.866) (Utley, 1946, p. 113); consequently, the influence of the examiner would appear to be minimal. Raw scores obtained by experimenter I and experimenter II are shown in Figure 1.

MOTHERS	EXAMINER I	EXAMINER II
	Raw Score - Form B	Raw Score - Form A
1	9	11
2	26	24
3	6	5
4	8	8
5	25	24
6	42	45
7	32	23
8	45	54
9	7	12
10	3	7

Figure 1. Test results of two examiners administering separate forms of the Utley Test for Lip Reading to ten mothers, drawn randomly from the experimental and control groups.



Each examinee was told that the examiner would read thirty-one common phrases or sentences. Each sentence would be read twice with a pause following each sentence pair to allow the examinee time to write down the response. The number of each item was not given. The examiner was unable to view the examinees; therefore, the examiner instructed the examinees to tap on the window twice when they were ready to move on to the next item. All items were delivered in a soft conversational voice.

### Results:

Each test answer was scored as either entirely correct or incorrect, according to the instructions on the Utley Test. The raw score values obtained for the control and experimental groups are shown in Figures 2 and 3. Instructions for scoring the Utley Test indicate that lip reading ability may be rated as poor, fair, good, or excellent, according to

#### DEAF AND HARD-OF-HEARING - RAW SCORES

POOR	FAIR	GOOD	EXCELLENT
9	14	17	25
6	13		24
8	16		26
7			
3			
11			
1			
5			

Figure 2. Raw score values obtained from the Utley Test for Lip Reading (Form A) for the fifteen mothers in the control group.



numerical raw score values (Appendix B). In order to determine whether there was a significant difference between the experimental group and the control group, the Chi-square formula was used (Thompson, 1965, p. 40).

#### NORMAL HEARING - RAW SCORES

POOR	FAIR	GOOD	EXCELLENT
0	13	0	24
2	13		
8	13		
6	16		
10			
2			
7			
4			
9			
11			
7			

Figure 3. Raw score values obtained from the Utley Test for Lip Reading (Form A) for fifteen mothers in the experimental group.

Since the expected values were not known, a contingency table was constructed in order to calculate Chi-square.

#### LIP READING ABILITY

	Poor	Fair	Good	Excellent	TOTAL
Mothers					
Deaf	Cell 1 8	Cell 3 3	Cell 5 1	Cell 7 3	15
Normal	Cell 2 10	Cell 4 4	Cell 6 0	Cell 8 1	15
TOTAL	18	7	1	4	30

Figure 4.

The expected values were then determined from the row and



column totals. The expected values were then placed on another contingency table and were shown as follows:

	Poor	Fair	Good	Excellent	TOTAL
Deaf	Cell 1 9	Cell 3 3.5	Cell 5 .5	Cell 7 2	15
Normal	Cell 2 9	Cell 4 3.5	Cell 6 .5	Cell 8 2	15
TOTAL	18	7	1	4	30

Figure 5.

The last step was computing Chi-square, which is determined by the differences between obtained and expected values. The statistical data for Chi-square were as follows:

	O	E	O-E	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E	df=(no. rows-1) (no. cols.-1) =1(3) = 3
Cell 1:	8	9	-1	+1	.1	
Cell 2:	10	9	1	1	.1	
Cell 3:	3	3.5	-.5	.25	.071	
Cell 4:	4	3.5	.5	.25	.071	
Cell 5:	1	.5	.5	.25	.5	
Cell 6:	0	.5	-.5	.25	.5	
Cell 7:	3	2	1	1	.5	
Cell 8:	1	2	-1	+1	.5	
					<u>2.342</u>	

The table value for Chi-square at the .05 level of confidence for 3 degrees of freedom is 7.82. In this analysis the null hypothesis was accepted due to the fact that the Chi-square obtained (2.34) was smaller than the above table value.

There was no significant difference between the lip reading scores of mothers of deaf and hard-of-hearing children and the mothers of normal hearing children within this sample.



Discussion:

Vicarious learning of speech reading skills might be expected because mothers of deaf and hard-of-hearing children must provide visual discriminative stimuli for communication. The basic means for transmitting information becomes visual (facial movements) and tactile, of which the mother is probably much more dependent on visual. With this reliance on the child's visual perception, the mother seemingly would be more aware of herself as a visual model for communication. Since it would seem essential for the mother to provide visual discriminative stimuli for communication, it might be assumed further that she would be more aware of facial movements in general. Hence, it was hypothesized that lipreading skills would be learned vicariously.

However, there was no significant difference between the two groups tested, which indicates that within the limitations of this sample and testing procedure, vicarious learning did not differentiate the experimental and the control groups of mothers.

The Utley Test itself may not have been an accurate measuring device for this particular investigation. The Utley Test is based on adult language patterns and ideas, so that many of the words are not part of the vocabulary used by most pre-school children. The mothers of deaf and hard-of-hearing children have observed lipreading training which emphasized a child-level vocabulary (e.g., What is



that? It is a ball; an apple, etc.). Included are items necessary for a deaf child's language needs at home, at play, and at school. Future research may find differences between similar control and experimental groups, if such a measuring device as the Children's Speechreading Test (Butt, 1968, pp. 225-239) is employed.

Secondly, in this test each sentence was entirely different, so no information was given through either situational context or repetition of words or phrases. Yet in the English language, contextual and redundant features aid the lip reader in predicting many meanings. Word guessing by the mothers resulted in close approximations many times. However, the scoring of the Utley does not allow for approximations to correct answers and may not have been sufficiently sensitive as a measure of the vicarious elements in question.

If future research is undertaken on vicarious learning pertaining to speechreading skills, investigators should consider testing: a) mothers utilizing the Children's Speechreading Test and, b) abilities of normal hearing peers and/or siblings. Since deaf and hard-of-hearing children spend considerable time at play and in discussion groups at school with other children, vicarious learning of lipreading skills by peers may be a fruitful area of investigation.



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## APPENDIX B

### UTLEY LIP READING TEST

#### Practice Sentences

- |                 |                 |            |
|-----------------|-----------------|------------|
| 1. Good Morning | 3. Hello        | 5. Goodbye |
| 2. Thank you    | 4. How are you? |            |

<u>TEST FORM A</u>	<u>SCORE</u>	<u>%</u>	<u>TEST FORM B</u>	<u>SCORE</u>	<u>%</u>
1. All right.			1. What happened?		
2. Where have you been?			2. It is all over.		
3. I have forgotten.			3. How old are you?		
4. I have nothing.			4. What did you say?		
5. That is right.			5. O. K.		
6. Look out.			6. No.		
7. How have you been?			7. That is pretty.		
8. I don't know if I can.			8. Pardon me.		
9. How tall are you?			9. Did you like it?		
10. It is awfully cold.			10. Good afternoon.		
11. My folks are home.			11. I cannot help it.		
12. How much was it?			12. I will see you tomorrow.		
13. Good night.			13. You are welcome.		
14. Where are you going?			14. You are all dressed up.		
15. Excuse me.			15. What is your number?		
16. Did you have a good time?			16. I know.		
17. What did you want?			17. It is cold today.		
18. How much do you weigh?			18. I am hungry.		
19. I cannot stand him.			19. I had better go now.		
20. She was home last week.			20. What is your address?		
21. Keep your eye on the ball.			21. What does the paper say about the weather?		
22. I cannot remember.			22. It is around four o'clock.		
23. Of course.			23. Do you understand?		
24. I flew to Washington.			24. They went around the world.		
25. You look well.			25. The office opens at nine o'clock.		
26. The train runs every hour.			26. None of them are here.		
27. You had better go slow.			27. Take two cups of coffee.		
28. It says that in the book.			28. Come again.		
29. We got home at six o'clock.			29. The thermometer says twenty above.		
30. We drove to the country.			30. It is your turn.		
31. How much rain fell?			31. It is hard to keep up with the new books.		



APPENDIX A

QUESTIONNAIRE

SPEECH 490

Jan Andrews - Graduate Student

1. NAME \_\_\_\_\_ AGE \_\_\_\_\_
2. ADDRESS \_\_\_\_\_
3. PHONE \_\_\_\_\_ OCCUPATION \_\_\_\_\_
4. NUMBER OF CHILDREN \_\_\_\_\_ NAMES AND AGES \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Does any member of your family possess a hearing loss? \_\_\_\_\_
6. How long has he/she possessed the loss? \_\_\_\_\_
7. How many hours do you spend with this individual during the day? \_\_\_\_\_
8. Has he/she received lipreading training? \_\_\_\_\_
9. Where? \_\_\_\_\_ When? \_\_\_\_\_
10. Length of time he/she received lipreading? \_\_\_\_\_
11. Did you observe or participate? \_\_\_\_\_
12. If so, for how long? \_\_\_\_\_
13. Have you ever been a member of a class in speech pathology & audiology? If so, how many hours of credit have you received? \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



TEST FORM A (cont.)CONDITIONS:

Aid? \_\_\_\_\_

Voice? \_\_\_\_\_

TEST FORM B (cont.)CONDITIONS:

Aid? \_\_\_\_\_

Voice? \_\_\_\_\_

## SCORING TABLE: No. Correct = % Correct.

1.	3%	7.	23%	13.	42%	19.	61%	25.	81%
2.	7	8.	26	14.	45	20.	65	26.	84
3.	10	9.	29	15.	49	21.	68	27.	87
4.	13	10.	32	16.	52	22.	71	28.	90
5.	16	11.	36	17.	55	23.	74	29.	94
6.	19	12.	39	18.	58	24.	78	30.	97

Excellent = 70% or over.

Good = 55 69%

Fair = 40 54%

Poor = under 40%