



129
801
THS

THE EFFECTS OF EXAGGERATED
AND NON-EXAGGERATED STIMULI
ON LIPREADING ABILITY

Thesis for the Degree of M. A.
MICHIGAN STATE UNIVERSITY
Linda Jerrine Vos
1965

THESIS




G 15 DEC 223

 246

NOV 06 1995
m036193

ABSTRACT

THE EFFECTS OF EXAGGERATED AND NON-EXAGGERATED STIMULI ON LIPREADING ABILITY

Lipreading is one way in which deaf and hard-of-hearing persons can communicate with others. Very little research has been done concerning lipreading and how to teach it. Several authors have discussed the question of exaggerated lipreading stimuli versus non-exaggerated lipreading stimuli, but none have done studies to support their statements. These authors feel that exaggerated stimuli should not be employed in teaching lipreading.

This study was designed to determine the relationship between lipreading scores that result from the use of non-exaggerated stimuli and lipreading scores that result from the use of exaggerated stimuli. Thirty-two fourth grade students were subjects in this study. Sixteen of these students received non-exaggerated stimuli and the other sixteen received the same stimulus sentences presented in an exaggerated manner.

Statistical analysis showed no significant difference between the mean scores of the group receiving the

exaggerated stimuli and the mean scores of the group receiving the non-exaggerated stimuli. Since the exaggerated stimuli did not significantly increase lipreading scores, it would probably be wise to use the non-exaggerated stimuli until further research would indicate otherwise. On the basis of the results of this study, suggestions for further research were made.

THE EFFECTS OF EXAGGERATED
AND NON-EXAGGERATED STIMULI
ON LIPREADING ABILITY

By

Linda Jerrine Vos

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Speech

1965

ACKNOWLEDGMENTS

**The writer wishes to acknowledge the following
for their cooperation and assistance in completing this
study:**

**Mr. Robert Clements, Principal
Beckwith Elementary School
Grand Rapids, Michigan**

**Mrs. Iva Frits, Fourth Grade Teacher
Beckwith Elementary School
Grand Rapids, Michigan**

**Members of the Fourth Grade
Beckwith Elementary School
Grand Rapids, Michigan**

**Mrs. R. H. Vos, Speaker
Grand Rapids, Michigan**

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS.	11
LIST OF TABLES.	111
LIST OF APPENDICES.	1v
Chapter	
I. STATEMENT OF THE PROBLEM.	1
Introduction	
Purpose of the Study	
Null Hypothesis	
Importance of the Study	
Definition of Terms	
Organisation of the Thesis	
II. REVIEW OF THE LITERATURE.	8
III. SUBJECTS, MATERIALS, AND PROCEDURES.	15
IV. ANALYSIS AND DISCUSSION.	19
V. SUMMARY AND CONCLUSIONS.	23
APPENDICES.	26
BIBLIOGRAPHY.	29

LIST OF TABLES

Table	Page
1. The difference between the mean scores of a group of fourth grade children who received non-exaggerated lipreading stimuli and a group of fourth grade children who received the same stimulus sentences but spoken in an exaggerated manner.	21

LIST OF APPENDICES

Appendix	Page
A. SENTENCES USED FOR LIPREADING TESTING.	26
B. SAMPLE ANSWER SHEET.	27
C. RAW SCORES FOR THE SIXTEEN CHILDREN WHO RECEIVED THE EXAGGERATED STIMULI AND THE SIXTEEN CHILDREN WHO RECEIVED THE NON-EXAGGERATED STIMULI.	28.

CHAPTER I

STATEMENT OF THE PROBLEM

INTRODUCTION

Lipreading can provide an important avenue of communication between the world of the hearing and the world of the deaf and hard-of-hearing. By watching a speaker's lips, some deaf or hard-of-hearing persons can learn to understand what is being said without having to resort to pencil and paper or sign language. Both of these latter methods attract attention to themselves and to the person using them as being different from the way other people communicate.

The method by which lipreading is taught has been the subject of much controversy. In the past there have arisen four different methods of teaching lipreading. Several minor methods have evolved, but these minor methods are basically modifications and continuations of the major methods. These four major methods are: (1) the Nitchie method, (2) the Kinsie method, (3) the Bruhn or Mueller-Walle method, and (4) the Jena method.

Nitchie set forth six underlying principles which he felt the teacher of lipreading should always

keep in mind.

1. Be natural.
2. Be thorough.
3. Make the work interesting.
4. Get the maximum values out of all work.
5. Prevent the formation of bad habits.
6. Seek to meet the particular needs of each individual. 1.

The Kinzie sisters made a contribution to the field of lipreading in the form of three graded lessons. In the Preface to Grade I, they have this to say about their method:

In a word, the method, which has been prepared to cover completely the needs for the successful handling of this important subject, makes the study of lipreading for children highly pleasurable as well as distinctly systematic and practical. All material has been carefully expressed in visible movements in Grade I, with skilful adaptation of both movement and idea in Grade II, furnishing proper extension appropriate to the child's speech-reading progress.²

Bruhn, in the Mueller-Walle method of lipreading, places particular emphasis on syllables. The following paragraph from her book of lessons illustrates this point.

It would be possible to conduct the rhythmical syllable practice to the extent of practically covering the entire field of possibilities of combinations in our language. And one might think that in doing so the necessary training of the eye to read speech from the lips would thereby be complete. And, from one point of view it would be so, for the elements of speech as represented by movements and positions would be mastered.

¹Elizabeth H. Nitchie, New Lessons in Lipreading (Philadelphia: J. B. Lippincott Company, 1930), pp. 42-43.

²Cora Elsie Kinzie and Rose Kinzie, Lipreading for Children, Grade I (Cora Elsie Kinzie and Rose Kinzie, 1936), p.2.

³Martha E. Bruhn, Conversational Efficiency (Boston: May H. Leavis, 1936), Introduction.

Karl Brauckmann's Jena Method was introduced to the United States by Bessie Whitaker and by Anna Bunker. This method placed a great deal of importance upon syllables and rhythms as well as upon kinesthetic cues.

The Jena Method owes its demonstrated success to the emphasis on the syllable, and on the syllable in context.

The grouping and stress of the syllables in feet and in phrases constitutes the rhythm of the syllable train which is the vital factor in understanding spoken language.

These methods are similar in that they emphasize the whole or synthetic approach to teaching lipreading; however, they vary considerably in their approach to the teaching of lipreading. From this arises a need for research to determine the best way of teaching lipreading.

There are at least four areas to be considered in the field of lipreading research. These include: (1) the speaker, (2) the listener, (3) the environment, and (4) the stimulus. O'Neill and Oyer further divide these areas into subcategories.

Speaker-Sender

1. Facial characteristics
2. Articulatory movements
 - a. Rate of speaking
 - b. Distinctiveness of speaking
3. Gesture activity
4. Amount of voice used
5. Feedback characteristics

Environment

1. Lighting conditions
2. Physical arrangements

⁴Anna M. Bunker, Speech Reading, Jena Method (Danville, Illinois: The Interstate Printers and Publishers Inc., 1944), p. 12.

3. Number of senders
 4. Physical distractions
- Lipreader-Receiver
1. Visual acuity and discrimination
 2. Communication "set"
 3. Residual hearing
 4. Personality
 - a. Intelligence
 - b. Behavior patterns
 - c. Past communicative experience
 - d. Visual feedback
- Code or Stimulus
1. Visibility
 2. Familiarity
 3. Structure
 4. Ease of transmission
 5. Auditory-visual aspects⁵

In the area of speaker characteristics under the subcategory of articulatory movements, it has been said that the speaker should not exaggerate his lip movements but should allow his lips to move only as they do in normal speech.

Newby⁶, in setting forth some general principles to be follow in teaching lipreading, states that the speaker must talk naturally and not exaggerate. He states that if the listener does not comprehend, one must repeat what was said or rephrase it but still not exaggerate.

PURPOSE OF THE STUDY

Since Newby offers no research evidence to support

⁵John J. O'Neill and Herbert J. Oyer, Visual Communication for the Hard of Hearing (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1962), p. 35.

⁶Hayes A. Newby, Audiology (New York: Appleton-Century-Crofts, 1958), p. 246.

the statement paraphrased above and since in the course of this investigation no other research evidence has been found to support it, the purpose of this study will be to determine the validity of his statement. The following question is asked: Do people more easily lipread exaggerated or non-exaggerated lip movements? It would seem, from casual observation, that one might more easily lipread the exaggerated lip movements.

NULL HYPOTHESIS

The following null hypothesis was devised to correspond to the question asked above:

There is no difference between the lipreading performance of persons given exaggerated stimuli and of persons given non-exaggerated stimuli.

IMPORTANCE OF THE STUDY

In order to communicate effectively with others, the deaf or hard-of-hearing person must be able to understand what others say. An important way of accomplishing this is through lipreading.

It would be beneficial to determine the best way of teaching the deaf or hard-of-hearing person to lipread. If more effective lipreading results from exaggerated stimuli being presented during the learning process, then exaggerated stimuli should be presented during lipreading training; however, if the reverse is

true -- that is, if non-exaggerated stimuli during training should prove to be the more effective -- then such stimuli should be used during training.

DEFINITIONS OF TERMS

Within the limits of this study, the following terms are defined as:

1. Lipreading: the ability to gain information from watching a speaker's lips, this information to be written on paper.

2. Stimulus: that which the speaker says. The stimuli in this study are presented without voice.

3. Exaggerated stimuli: the movements of any person's lips when he is told to exaggerate his articulatory movements.

4. Non-exaggerated stimuli: the movements of any person's lips in ordinary conversation when he is told not to exaggerate his articulatory movements.

ORGANIZATION OF THE THESIS

Chapter I is a consideration of the problem to be studied, the statement of the purpose of this study, the null hypothesis to be tested, the importance of the study, definitions of the major terms, and the plan of organization of the thesis.

Chapter II will be a review of the literature on speaker characteristics in lipreading, and more specifically, on the articulatory movements of speakers.

Chapter III will discuss the subjects, the materials, and the procedures used in this study.

Chapter IV will contain a statistical analysis of the results obtained in the study.

Chapter V will summarize and draw conclusions from the results of this study and will make recommendations for further research.

CHAPTER II

REVIEW OF THE LITERATURE

In reviewing the literature in the area of lipreading, the thing which impresses one most is the startling lack of literature to review. To be sure, journals such as the Volta Review display many articles offering materials to be used in lipreading and articles written by deaf or hard-of-hearing people who have learned to lipread as a means of communication. But objective studies concerning lipreading are few in number. This chapter will be a review of the literature concerning the speaker-sender in the lipreading situation with particular emphasis placed upon the articulatory movements of the speaker-sender.

Wilmer Pomeroy had an article published in the Volta Review concerning what he called "trained lips." The following quotation which consists of the first and last paragraphs of Mr. Pomeroy's article, would seem to indicate that he feels that articulatory movements should be emphasized in order to be more easily read by the lipreader.

"He had a different mouth." So spoke a man of a public speaker whom he had seen engaged in quiet conversation a few minutes before beginning a public address to soldiers. To the army boys he spoke with fervor, and every movement of his visible organs of speech was clear, distinct, and true, whereas in the quiet conversation scarcely a movement was seen.

. Movement is the grist of the lipreader's mill. He cannot read lips which make no movement. Hence, a little thought, a little practice, a little care on your part in making the proper, natural movements for the vowels (the consonants will take care of themselves, as they cannot be sounded without their own special movement), will give him his grist and make you the happy possessor of those "trained lips" for which he has so often to search in vain, and which to him seem to be heavenly messengers of hearing.¹

Miriam D. Pauls² says that careless, indistinct, shouted, or exaggerated speech serves only to increase the lipreader's difficulties. She claims, also, that the person with an expressionless face is much more difficult to lipread than is the person with a mobile face.

Several persons who are concerned with the teaching of lipreading have stated the opinion that the speaker should keep his lip movements as natural as possible and not exaggerate at any time. These persons, however, do not offer research evidence to support their opinions.

Nitchie feels that one should speak naturally

¹Wilmer Pomeroy, "Have You Trained Lips?," Volta Review (XX, 1919), p. 262.

²Miriam D. Pauls, "Speech Reading," Hearing and Deafness, ed. H. Davis (New York: Murray Hill Books, 1947), pp. 257-276.

while being lipread:

There are certain underlying principles which a teacher should make so much a part of his mental equipment that he cannot forget them, and they are:

1. Be natural in everything that you do. That was the underlying principle in all Mr. Nitchie's work in lipreading. He said "The teacher who 'mouths' or speaks word-for-word or very slowly is deviating from the natural and is doing the student positive harm rather than good. It may make the work easier for the student temporarily, but ultimate success is made more difficult. Phrases or sentences not in accord with natural speech and utterance, or in the literary style rather than the spoken style are not natural."³

In giving instructions to her student lipreaders,

Anna Bunker says:

Our friends are eager to help, and they appreciate having from us suggestions similar to these:

.
3. Speak in the same tone of voice as you would if we were going to hear you.
.
6. Be careful not to become unnatural in any way.⁴

Ordman and Ralli list several "do's and don'ts" to be used as a guide by the teacher of lipreading.

When you are giving the lesson:

- | | |
|----|--|
| Do | 1. Speak at an average rate of speed. |
| | 2. Speak with natural inflection. |
| | 3. Always say a whole sentence without stopping. |

³Elizabeth Helm Nitchie, New Lessons in Lipreading (New York: J. B. Lippincott Company, 1930), p. 42.

⁴Anna M. Bunker, Speech Reading, Jena Method (Danville, Illinois: The Interstate Printers and Publishers Inc., 1933), pp. 19-20.

- Don't
1. Don't speak over slowly.
 2. Don't pause between words.
 3. Don't exaggerate the movements of your mouth.
 4. Don't repeat one word or phrase over and over.⁵

Grace Harris Lassman, in her book, says:

TALK: DON'T GESTURE

There is often a temptation to gesture to a deaf child, even while talking to him, especially if he does not understand immediately. For instance, while saying, "Go and get your coat, we're going out," it may seem easy to make the gesture of putting on a coat. Unfortunately, the child will pay more attention to the gesture than to the speaker's face. This is natural for him since he tends to be impressed by the "bigness" of things and the movements of the arms and the body are "bigger" and more noticeable than the movements of the mouth.⁶

These have been the opinions of people who have been concerned with lipreading as a teacher of lipreading or as a student of lipreading or as an observer. The next section of this chapter will be a discussion of some of the research evidence which pertains to this area of study.

Byers and Lieberman⁷ did a study comparing lip-

⁵Kathryn Alling Ordman and Mary Pauline Ralli, What People Say, The Nitchie School Basic Course in Lipreading (Washington D. C.: Volta Bureau, 1955), p. xii.

⁶Grace Harris Lassman, Language for the Preschool Deaf Child (New York: Grune and Stratton, 1950), p. 35.

⁷V. W. Byers and L. Lieberman, "Lipreading Performance and the Rate of the Speaker," JSHR, II (1959), p. 271.

reading ability with the rate of the speaker. In order that they might precisely measure the number of words spoken per minute, the test was photographed at a normal rate and the speed of the projector was varied to produce the desired rate of speaking. The subjects were students at the Kentucky School for the Deaf, Danville, Kentucky. The subjects were divided into four groups, each group consisting of six good lipreaders and six poor lipreaders. The results of this test were treated by an analysis of variance. The results showed that the only significant difference was the difference between the means of the good and the poor lipreaders. There were no significant relationships between lipreading ability and speaking rate. A particularly interesting point was that the speaker was asked to speak all sentences "with the same 'expressionless' countenance in order to cut down extraneous visual cues"⁸. This might imply that an expressive countenance would be distracting, an opinion which is in direct opposition to Pauls' opinion, namely that an expressionless face is more difficult to read than a mobile face.

O'Neill⁹ explored the possibility that speakers

⁸ Ibid.

⁹ John J. O'Neill, "Contributions of the Visual Components of Oral Symbols to the Speech Comprehension of Listeners with Normal Hearing" (Doctoral dissertation, Ohio State University Department of Speech, 1951).

may differ in their ability to communicate visually and auditorily. He concluded that the speakers who were most intelligible in the lipreading situation were also the most intelligible under auditory conditions.

Aylesworth¹⁰ investigated the differences of scores on a lipreading test as a result of presentation by the same speaker, presentation by different speakers, and the sex of the speakers and lipreaders. He used forty-eight subjects and four speakers in a face-to-face test. He found no significant difference on any of these variables. He did find, however, that as a group, female lipreaders scored significantly higher than did the male lipreaders as a group.

The study that relates most directly to the subject of this chapter is one by Louis Stone as discussed by O'Neill and Oyer.¹¹ Stone studied the influence of three variables of facial context upon lipreading. These three variables were facial exposure, facial expression, and lip mobility. Stone presented colored motion pictures of a trained actor to 256 college students who had normal hearing. The results of the test showed that better lipreading performance was evident when the speaker

¹⁰Donald L. Aylesworth, "The Talker vs the Lip-reader as a Variable in Face-to-Face testing of Lipreading Ability" (Masters thesis, Michigan State University Department of Speech, 1964).

¹¹John J. O'Neill and Herbert J. Oyer, Visual Communication for the Hard of Hearing (Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1961), p. 48.

used normal articulatory movements. This did not occur when the speaker used tight articulatory movements. Better lipreading performance was found when the speaker's expression was plainly set rather than smiling.

Of the opinions presented in this chapter, most seem to agree that natural articulatory movements should be used for lipreading; however, Mr. Pomeroy suggested that the better and more clearly lips move, the better it is for the person who is trying to read them. Research evidence leads one to the conclusion that lip mobility must be natural for the best lipreading results. Lip movements that are too exaggerated or are too tight seem to make it more difficult for the lipreader.

CHAPTER III

SUBJECTS, MATERIALS, AND PROCEDURES

SUBJECTS

The subjects in this study were thirty-two children enrolled in the fourth grade in a public elementary school. It was originally planned to use thirty subjects in this study, but since the class contained thirty-two children, all participated as subjects. School records indicate that none of these children had hearing losses. Six of the subjects had mild vision losses that were corrected by glasses. None of the children had any previous formal lipreading training.

One speaker was chosen by a trained speech clinician for the purpose of presenting the test stimuli to both groups. She was chosen as an example of a standard American speaker who has had no experience as a lipreading teacher or as a public speaker.

MATERIALS

The stimulus material that was employed consisted of sentences frequently used in everyday speech.¹ The spec-

¹Hallowell Davis and S. Richard Silverman, Hearing and Deafness (New York: Holt, Rinehart, and Winston, Inc., 1961), pp.549-550.

ifications for these sentences, prepared at Central Institute for the Deaf, were laid down by a Working Group of the Armed Forces -- National Research Council Committee on Hearing and Bio-Acoustics. Two groups of ten sentences each were used. Each group of ten sentences contained fifty italicized words which were used for purposes of scoring. For each italicized word that a subject wrote on his answer sheet he was given one point; no points were given for words which were not of the italicized one hundred and no points were subtracted for words omitted.

PROCEDURES

The subjects were divided randomly into two groups of sixteen each. Each group of subjects received the same twenty sentences presented in the same order as stimuli. The same speaker presented the words to both groups. This was done in the same room and with the same seating arrangements for each group. The lighting and the room noise level were approximately the same for both groups.

The experimental variable was the exaggeration of the speaker's articulatory movements while presenting the stimulus sentences. The first group received the stimuli spoken in a non-exaggerated way, the speaker being told to say the sentences without voice and to speak them as normally as possible. The second group received the stimuli spoken in an exaggerated way, the

speaker being told to say the sentences without voice and to exaggerate her articulatory movements.

The experiment took place in the Art Room of the school in which the subjects were enrolled. One wall of this room consisted completely of windows. The subjects sat with their backs toward these windows. The speaker stood facing the subjects and approximately ten feet from the middle row of the subjects.

The school had a noise level such as is found in most schools. There was the noise in the background of another grade playing outside for recess, of the janitor emptying wastebaskets, etc.

The subjects sat at small tables (approximately $1\frac{1}{2}$ feet by 5 feet) facing the speaker. The tables were placed in three rows of two tables each. Five subjects sat at each of the first two rows of tables and six sat at the last row.

The subjects were told to watch the speaker's lips carefully and to see if they could tell what the speaker said. Two sample sentences (not from the list of twenty) were presented without voice and the subjects responded to these orally. The two sentences were, "What is your name?" and "How old are you?" The subjects were then instructed to watch the next twenty sentences carefully and to write them on the paper provided.

The sentences were presented in the following sequence: the number of the sentence was said aloud,

the sentence was immediately said without voice, and then the subjects were given thirty seconds to write their responses. This same procedure was followed for every sentence. The list of sentences from which the speaker read contained no italicized words. This was to guard against the possibility of the speaker emphasizing these words more than the other words.

CHAPTER IV

ANALYSIS AND DISCUSSION

In scoring the responses of the subjects, each italicized word was given one point if it was correct. If an italicized word was incorrect or omitted, no point was given. When these points were tallied for each group, a t test was employed to determine if the difference between the means of the two groups was statistically significant.¹ In calculating these statistics, the following symbols were used:

X_1 -- each score of the group which received the non-exaggerated stimuli.

X_2 -- each score of the group which received the exaggerated stimuli.

\bar{X}_1 -- the mean of the scores of the group which received the non-exaggerated stimuli.

\bar{X}_2 -- the mean of the scores of the group which received the exaggerated stimuli.

¹Hubert M. Blalock Jr., Social Statistics (New York: McGraw-Hill Book Company, 1960), pp. 169-187.

- N -- the number of subjects in each group.
- S_1 -- the standard deviation of the scores of the group which received the non-exaggerated stimuli.
- S_2 -- the standard deviation of the scores of the group which received the exaggerated stimuli.
- S_1^2 -- the variance of the scores of the group which received the non-exaggerated stimuli.
- S_2^2 -- the variance of the scores of the group which received the exaggerated stimuli.
- \sum -- the sign which represents the process of summation.

The mean of the scores for each group was obtained by using the formula:

$$\bar{X} = \frac{\sum X}{N}$$

The standard deviation of the scores for each group was obtained by the formula:²

$$S = \frac{1}{N} \sqrt{N \sum X^2 - (\sum X)^2}$$

The variance for the scores of each group was obtained by squaring the standard deviation for each group.

The value of t , for determining if the difference between the means of the two groups was statistically significant, was obtained by the formula:³

²Ibid, p. 69.

³Ibid, pp. 172-174.

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{N_1 s_1^2 + N_2 s_2^2}{N_1 + N_2 - 2}} \sqrt{\frac{N_1 + N_2}{N_1 N_2}}}$$

By using a two-tailed test and a .05 level of significance, it was possible to determine whether there was a significant difference between the means of the two groups. A t test was computed on the results of the lipreading test. The results of the t test are presented in Table 1.

TABLE 1. The difference between the mean scores of a group of fourth grade children who received non-exaggerated lipreading stimuli and a group of fourth grade children who received the same stimulus sentences but presented in an exaggerated manner.

\bar{X}_1	\bar{X}_2	df	t*
11.875	12.125	30	.073

* at the .05 level of confidence $t = 2.042$

DISCUSSION

At the .05 level of confidence with a two-tailed test, there was no significant difference between the mean scores of the subjects who received the non-exaggerated lipreading stimuli and the scores of the subjects who received the exaggerated lipreading stimuli. The subjects who received the exaggerated lipreading stimuli

had a total score of 194 while the subjects who received the non-exaggerated lipreading stimuli had a total score of 190. This shows that the subjects who received the exaggerated stimuli were able to lipread more words than were the subjects who received the non-exaggerated stimuli, but this difference was not large enough to be significant statistically.

The results of the t test indicate that there is no significant difference in the lipreading ability of persons receiving non-exaggerated stimuli and of persons receiving exaggerated stimuli. Since the exaggerated stimuli did not significantly increase lipreading scores, it would probably be wise to use non-exaggerated stimuli until further research would indicate otherwise.

These findings corroborate the opinions and evidence of those persons, referred to in Chapter II, who feel that lipreading should be taught using normal or natural articulatory movements. They do not agree with Mr. Pomeroy's⁵ opinion that the movements of a speaker's articulators should be clear and distinct.

⁵Wilmer Pomeroy, "Have You Trained Lips?," Volta Review (XX, 1919), p. 262.

CHAPTER V

SUMMARY AND CONCLUSIONS

SUMMARY

Deaf and hard-of-hearing persons have lost part of their means of communicating with others. Lipreading is one means by which these persons can compensate for their problem. A still relatively unanswered question is how best to teach these persons to lipread.

Several authors have emphasized that the stimuli to be lipread should not be exaggerated, whereas others feel that exaggerated stimuli makes lipreading easier. There has been no research dealing directly with this question of exaggeration versus non-exaggeration.

This study has attempted to show whether a relationship exists between lipreading ability and degree of articulatory movement. Thirty-two fourth grade children from a public elementary school were chosen as subjects. Sixteen of these received non-exaggerated lipreading stimuli, and the other sixteen received the same stimulus sentences presented in an exaggerated manner. A t test was employed which showed that there was no significant

difference between the mean scores of the two groups of subjects. A clinical application of these results was discussed.

CONCLUSIONS

This study has attempted to determine whether there was a significant difference between the lipreading ability of persons receiving non-exaggerated stimuli and the lipreading ability of persons receiving exaggerated stimuli. The results of this investigation lead to the following conclusions:

There is no significant difference between the mean score of the subjects who received the non-exaggerated lipreading stimuli and the mean score of the subjects who received the exaggerated lipreading stimuli. This would indicate that one could use either exaggerated stimuli or non-exaggerated stimuli in teaching lipreading. Since the exaggerated stimuli did not significantly increase lipreading scores, it would probably be wise to use non-exaggerated stimuli until further research would indicate otherwise.

IMPLICATIONS FOR FURTHER RESEARCH

Much further research needs to be done in the area of lipreading. In reference to this investigation, the same procedures could be employed with subjects of different age groups to determine whether the same

results would hold. This could also be done with different stimuli and with different types of masking noise in the background. The same procedures could be used with deaf or hard-of-hearing persons -- controlling such additional variables as amount of hearing loss and amount of lipreading training each subject has received previous to the administration of the lipreading test.

APPENDIX A

1. SENTENCES USED FOR LIPREADING TESTING

1. Walking's my favorite exercise.
2. Here's a nice quiet place to rest.
3. Our janitor sweeps the floor every night.
4. It would be much easier if everyone would help.
5. Good morning.
6. Open your window before you go to bed.
7. Do you think that she should stay out so late?
8. How do you feel about changing the time when we begin work?
9. Here we go.
10. Move out of the way.
11. The water's too cold for swimming.
12. Why should I get up so early in the morning?
13. Here are your shoes.
14. It's raining.
15. Where are you going?
16. Come here when I call you.
17. Don't try to get out of it this time.
18. Should we let little children go to the movies by themselves?
19. There isn't enough paint to finish the room.
20. Do you want an egg for breakfast?

APPENDIX B

SAMPLE ANSWER SHEET

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

APPENDIX C

RAW SCORES FOR THE SIXTEEN CHILDREN WHO RECEIVED THE
EXAGGERATED LIPREADING STIMULI AND THE SIXTEEN CHILDREN
WHO RECEIVED THE NON-EXAGGERATED STIMULI

Non-exaggerated Stimuli	Exaggerated Stimuli
6	1
2	21
15	27
8	24
9	13
20	10
1	33
0	3
19	2
25	4
19	17
0	5
18	7
21	5
8	8
9	14
TOTAL	194

BIBLIOGRAPHY

Books

- Blaock, Hubert M. Jr. Social Statistics. New York: McGraw-Hill Book Company, 1960.
- Bruhn, Martha E. Conversational Efficiency. Boston: May H. Leavis, 1936.
- Bunger, Anna M. Speech Reading, Jena Method. Danville, Illinois: The Interstate Printers and Publishers Inc., 1944.
- Davis, Hallowell and Silverman, S. Richard. Hearing and Deafness. New York: Holt, Rinehart, and Winston, Inc., 1961.
- Kinsie, Cora Elsie and Kinsie, Rose. Lipreading for Children, Grade I. Cora Elsie Kinsie and Rose Kinsie, 1936.
- Lassman, Grace Harris. Language for the Preschool Deaf Child. New York: Grune and Stratton, 1950.
- Newby, Hayes A. Audiology. New York: Appleton-Century-Crofts, 1958.
- Nitchie, Elizabeth H. New Lessons in Lipreading. New York: J. B. Lippincott Company, 1930.
- O'Neill, John J. and Oyer, Herbert J. Visual Communication for the Hard of Hearing. Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1962.
- Ordman, Kathryn Alling and Ralli, Mary Pauline. What People Say, The Nitchie School Basic Course in Lipreading. Washington D. C.: Volta Bureau, 1955.
- Pauls, Miriam D. "Speech Reading," Hearing and Deafness, Hallowell Davis (ed.). New York: Murray Hill Books, 1947.

Articles and Periodicals

Byers, V. W. and Lieberman, L. "Lipreading Performance and the Rate of the Speaker," JSHR, II (1959), p. 271.

Pomeroy Wilmer. "Have You Trained Lips?," Volta Review, XX (1919), p. 262.

Unpublished Material

Aylesworth, Donald L. "The Talker vs the Lipreader as a Variable in Face-to-Face testing of Lipreading Ability." Unpublished Masters thesis, Department of Speech, Michigan State University, 1964.

O'Neill John J. "Contributions of the Visual Components of Oral Symbols to the Speech Comprehension of Listeners with Normal Hearing." Unpublished Doctoral dissertation, Department of Speech, Ohio State University, 1951.

MICHIGAN STATE UNIV. LIBRARIES



31293010136145