

Evaluation of an Alternate Test Form
of the Diagnostic Test of Speechreading

An Honors Thesis (ID 499)

by

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REVIEW OF THE LITERATURE

Lipreading tests can be administered live or filmed presentation. Several research studies have been conducted to evaluate the performance of subjects on both live versus filmed presentations of lipreading tests.

In a study done by Shephard, et al (1977), the Utley Sentence Test of Lipreading Ability, Form B was presented to 20 adult subjects who had normal hearing and no previous training in speechreading. A video-taped version of this test was employed with a female speaker. In the discussion of the results of the study, the authors mentioned that each subject was required to "quickly synthesize what was seen and write a response." The mean sentence score of the subjects in this study was 48.4 out of a possible 125 which is comparable to the score of 39.13 determined by a study by Jeffers and Barley (1971) who also experimented with live versus filmed presentation. The mean sentence score for live presentation of the test was 80.82. The fact that both studies indicated low scores in the lipreading test with filmed presentation points out a possible disadvantage to filmed tests: perhaps, filmed tests may not allow enough time for subjects to respond adequately before the presentation of the next stimulus. In addition to this, the two-dimensional versus the three-dimensional presentation may have had some effect, also.

The Utley Test was also used in a study done by Jeffers and Barley (1971). The methods utilized in this study involved

administering the Sentence Test Form A "live" and Form B filmed to a group of university students and to four groups of hard-of-hearing adults. Separate talkers were used for the students and the hard-of-hearing adults. The results of the study indicated that the "live" presentation was established as a less difficult task for the subjects than the filmed version. Thirty-one subjects were tested and scores ranged from 36 to 115 on the "live" presentation and 19 to 61 on the filmed presentation. The highest possible score was 125. In addition to this, the mean score for the "live" presentation was 80.82 while the mean for the filmed presentation was 39.13. These results were obtained despite the fact that the "live" version was presented first for all groups in the study. Also, Form B was given live two weeks prior to the filmed version to the hard-of-hearing adults, and they still obtained higher scores on the live presentation. Jeffers and Barley concluded from the results of their study that the difficulty of the Utley Sentence Tests was related to its mode of presentation and not to its content.

In a similar manner, Jackson (1971) cited a study by DiCarlo (1964) in which he compared live and filmed presentations of visual stimuli. The subjects consisted of college students who were either experienced or inexperienced with lipreading. They were given speechreading lessons which were both live and filmed. The results of DiCarlo's study indicated no significant difference in scores obtained on live and filmed presentations.

However, performance tended to be slightly better with the live version of the lesson.

Jackson (1971) also did a study on the "Effects of Lighting Condition and Mode of Presentation on the Speechreading Accuracy of Deaf Children." The Illinois Communication Scale was administered in four parts to twenty students ranging from 4 to 16 years of age. All subjects had a hearing loss of at least 50 decibels. The four parts of the test were executed in both a live and filmed manner.

The statistical analysis of the data indicated that there was a significant difference between the scores obtained on the test from both the television presentation and the face-to-face presentation. The scores demonstrated a greater number of errors for the television mode of presentation as compared to the scores with the live mode of presentation.

In addition to this, Erber (1972) conducted an experiment on "Auditory, Visual, and Auditory-visual Recognition of Consonants by Children with Normal and Impaired Hearing." She chose five children with normal hearing, five with severe hearing impairments, and five with profound losses. A video-tape of a female talker who presented specific stimuli was administered to the subjects. This video-tape was made using special lighting to illuminate the talker's articulatory movements. By utilizing the special lighting, ideal lighting conditions of the articulators were presented to the subjects. In her discussion of the results, Erber pointed out that by using the special lighting, the general principles of place and voicing/nasality reception

could be noted, but the data which was obtained could not reliably predict the reception of consonants under ordinary testing conditions. One may infer from this that by using video-taped tests which employ special lighting, diagnostic results may not validly represent the subject's speechreading ability.

Visual memory is the topic of a study conducted by DeFilippo (1982). In her study, she administered three tests: one of lipreading, one of visual memory, and a third utilizing a combination of both skills. All three tests were given via black-and-white video-tapes. The subjects of the experiment included 23 children, 11 to 16 years of age, and 16 adults, 23 to 59 years of age. All 23 children had been wearing hearing aids since they were young children and had been enrolled in schools for oral communication. Several of these students had performed poorly on auditory word recognition after being given a 25-spondee closed-set test.

The results of the experiment indicated a wide range of lipreading ability displayed by the subjects in her experiment. The range spanned from 12 to 98% words correct. After a regression analysis was performed on the data, 35% variance among children's scores could not be explained. Element-recognition which was not part of the visual memory tests accounted for the greatest variable portion of the children's scores. On the other hand, the majority of the variance for adults could be explained. They had the most difficulty with visual memory of mouth-shape sequences. This fact combined with the lipreading skills

suggested that memory for visible sequences may have an effect on adult lipreading skills but not necessarily affect the lipreading skills of children.

In her discussion of the results, DeFilippo (1982) mentioned that children in the classroom become accustomed to more pronounced mouth movements from their teachers which contrasts with the movements supplied by the talker on the video-tape. This fact may have accounted for some of the children's poorer scores on the lipreading tests as compared to the adults' scores. She also suggested that there could be an effect from "age differences in the ability to recognize sequenced elements that are reduced in cue detail."

Taking these findings into consideration, these results may also lend some support to presenting live versions of speechreading tests rather than filmed versions to children. By administering a live version of a speechreading test to children, the talker may adjust his or her rate and distinction of lip movements to meet the needs of each child, whereas, a filmed version stays the same, regardless. There of course, would have to be a limit on the degree of pronounced movement which is made, but when presented live it allows for at least a small degree of variance which would be subject to the talker's discretion.

Various research experiments have discovered that there are several disadvantages to using video-taped presentations of tests rather than live presentations. Some of these disadvantages which have been mentioned include not allowing adequate response time, presentation of a two-dimensional rather than a

three-dimensional effect, and the use of special lighting which may overaccentuate the articulators and , therefore, provide inaccurate data about the actual speechreading ability of the tested subject. Also by having a live presentation which is standardized, prevention could be taken against leaving the diagnostician in a dilemma if the video-tape equipment malfunctions. All of the aforementioned disadvantages do not necessarily mean that video-tapes should not be used. However, these disadvantages should be considered when analyzing test results. As research in the area of lipreading tests expands, possibly some of the disadvantages of using filmed lipreading tests may perhaps be eliminated by using live presentation lipreading tests.

Of the lipreading tests available for use with children, the Diagnostic Test of Speechreading by Myklebust and Neyhus (1970) was designed to be administered by filmed presentation only. At the beginning of the standardization process, a sample of thirty boys and thirty girls enrolled in public schools was selected to participate. Three age level groups were established: four and five, six and seven, and eight and nine year olds. All of the subjects had a pure-tone hearing loss of at least 75 dB in the better ear. Also, each child obtained a score of normal or above on a standardized intelligence test.

There are three separate portions to the test: words, phrases, and sentences. These portions are divided into two film cartridges. Only words appear on the first cartridge, while phrases and sentences appear on the second cartridge.

The contents of the test contain vocabulary taught to four to nine year old children enrolled in deaf schools. An instructor experienced in filming language material lipped the contents on the film. The items which appear on the test consist of 36 words, ten phrases, and eighteen sentences. The phrases and sentences were created from combinations of the 36 words in the word portion of the test.

The test has no time limit, and each item is presented twice. One advantage of the test is that it does allow enough response time. There are, in contrast to this, several disadvantages to the Diagnostic Test of Speechreading being administered by film presentation only. For instance, since this test is administered by film presentation only, it is possible that the projector could malfunction and disrupt the testing procedure. Also, filmed tests could cause subjects with vision problems to have difficulty responding and differentiating between articulatory movements. Difficulty for those individuals with vision problems could be caused by the projection of a two-dimensional rather than a three-dimensional image on the screen. A third disadvantage to filmed tests compared to live tests is that most filmed tests illuminate the mouth with special lighting to make it easier for the articulatory movements of the speaker to be seen. By doing this, it may result in test results which do not accurately represent the subjects' actual speechreading performance.

After considering all of these disadvantages, it becomes evident that it could be beneficial for an examiner to have a

live version of the Diagnostic Test of Speechreading which may be presented, too. Ideally, by presenting the test live, it would require much less preparation time prior to testing. The examiner could also benefit from an alternate test form which is equivalent to the original Diagnostic Test of Speechreading. This alternate test could be used to evaluate progress in lipreading ability over time.

The purpose of this research project is therefore to devise an alternate, valid form of the Diagnostic Test of Speechreading that may be administered by live presentation. By creating a second test form of this test which is equal to the original, it would enable an examiner to use the Myklebust and Neyhus test for both pretherapy and posttherapy testing.

METHODOLOGY

SUBJECTS:

Ten six and seven year old normal hearing girls were selected as subjects for this study. A standard hearing screening was administered to each girl to determine normal hearing. All ten girls attend elementary school in Muncie, Indiana.

MATERIALS:

The alternate test, Form B, which was administered in the experiment was devised from the original test (Form A) of the Myklebust and Neyhus Diagnostic Test of Speechreading which was also administered to the subjects. The alternate test form consisted of three subtests: words, phrases, and sentences. The word subtest was comprised by randomly selecting one word from a group of four words which were pictured for each item in the original test. The remaining two subtests were created in the same manner as the word subtest except that each test item was chosen in order to be as similar in syntactical structure as the original test. In addition to this, the phrases and sentences were constructed using the words which were previously tested in the word subtest of Form B. Form B was scored in the same manner as Form A with each correct response receiving one point. A copy of test Form B is provided in Appendix I.

PROCEDURE:

All testing was conducted at Ball State University Speech, Language, and Hearing Clinic. The group of ten subjects was divided into two subgroups, Group A and Group B. Both groups consisted of five girls each.

On the first day of testing, each girl in Group A was given the original test form (Form 1) of the Diagnostic Test of Speechreading. Following a break of a minimum of twenty minutes, each individual subject was retested with the alternate test form (Form 2). Each subject from Group B was given Form 2 of the test followed by a break. After this, each subject from Group B was given Form 1 of the test.

Each item on both forms of the test was lipped twice. Also, both tests in the experiment were scored according to the scoring procedure used for the original form of the test. Each correct response by the subjects received one point. A correct response consisted of pointing to a picture which correctly corresponded with what the examiner lipped to the subject. The total number of points possible was 64.

STATISTICAL DESIGN AND ANALYSIS OF DATA:

The statistical design utilized in this study was the Spearman Rank-Order Correlation. This type of statistical design was employed to determine if there was a significant difference between the scores obtained on the original and the alternate test form of the Myklebust and Neyhus Diagnostic Test of Speechreading.

RESULTS

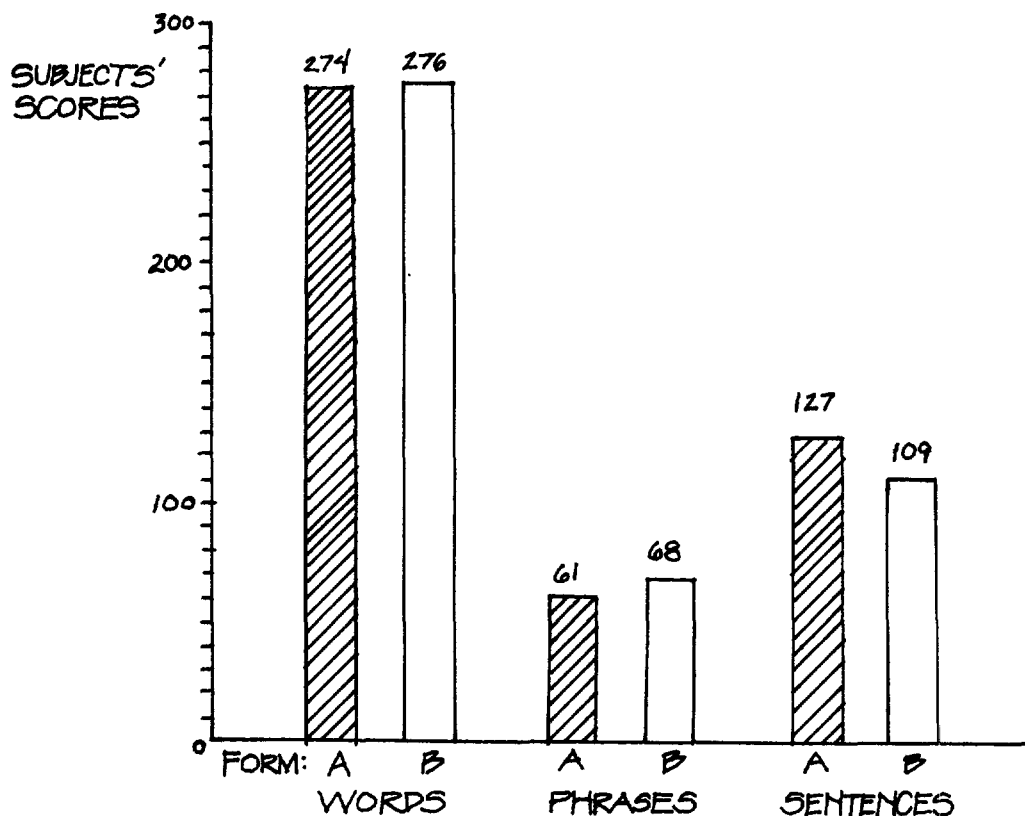
Appendix VIII presents the individual subjects' scores on each subtest (word, phrase, and sentence) of Forms A and B of the Diagnostic Test of Speechreading. As can be seen from this appendix, the individual scores on the word subtests ranged from 19 to 33 out of a possible 36 on Form A and from 20 to 33 out of a possible 36 on Form B. The total score obtained on Form A was 274, and on Form B, the total score 276. A Spearman rank correlation was run to determine whether there was a significant correlation between the scores obtained on the word subtests of Form A as on Form B. In Appendix X, it is indicated that the correlation coefficient of .7122 was determined for the word subtests of Form A and Form B.

The second subtest of each test which was analyzed using the Spearman rank correlation was the phrase subtest. Scores for this subtest can be found in Appendix VIII. They ranged from 2 to 9 out of a possible 10 on Form A and from 4 to 9 out of a possible 10 on Form B. The total score achieved on Form A was 61 while a total of 68 points were obtained on Form B. By looking at Appendix X, it can be seen that a very low correlation coefficient of .2879 was calculated.

The final section of the tests which was analyzed consisted of sentences. In Appendix VIII, the range of scores for this subtest on Form A was 8 to 17 out of a possible 18 and from 6 to 16 out of a possible 18 on Form B. The correlation coefficient

of .7061 was also determined by using the Spearman rank correlation and can be seen in Appendix X.

In addition to the previously mentioned data shown in the appendices, Appendix IX depicts the range of scores for total performances to be from 29 to 57 out of a possible 64 on Form A and from 30 to 58 out of a possible 64 on Form B. Also, the correlation coefficient for total performances on both tests can be found in Appendix X. A correlation coefficient of .8031 was calculated. At first glance, this would appear to indicate a high correlation between both test forms. However, since these tests are two forms of the same test a higher correlation is more desirable in order to prove equivalence. In order to provide a clearer view of the total performances on each subtest, the total scores for both forms of the test are pictured in the histogram below:



Summary

Results indicated that there was a correlation between the scores obtained on Form A and Form B of the Diagnostic Test of Speechreading which was not high enough to justify the use of Form B of the test as an alternate equivalent form of the original filmed version of the test. The performances of all subjects demonstrate correlations on the words, phrases, and sentences portions of the tests which are insufficient enough to support the validity of Form B.

DISCUSSION

In several studies cited in the review of the literature, filmed presentations of speechreading tests were proven to have various disadvantages when compared with live presentations. A speechreading test of particular interest was the Diagnostic Test of Speechreading by Myklebust and Neyhus. The primary disadvantage of the test was that the only existing form of the test consisted of a filmed presentation. The purpose of this study was to create a valid, alternate test form of the Myklebust and Neyhus Diagnostic Test of Speechreading which could be given through live presentation.

The alternate test form which was created for the experiment was modeled after the original test form. Form B was divided into three subtests: words, phrases, and sentences. The words selected for the first section were chosen randomly from each group of four pictures administered for each test item on Form A. Next, the Form B phrase and sentence subtests were selected from the pictures used in Form A in a manner which would maintain similarity in structure between the items on both forms. Also, the phrases and sentences on Form B were created from the words previously tested in the word subtest of Form B. The scoring procedure for Form B was the same as the procedure for the original Form A with each correct response receiving one point.

The participants in the study were ten six and seven year old girls whose parents were informed about the purpose and the methods involved in the experiment prior to the subjects'

participation in the study. Also, all parents granted consent for their daughters to participate.

The procedure for the study involved administering both Form A and Form B of the test to all ten subjects. A break of a minimum of twenty minutes was given between the administration of each form of the test. Upon completion of the testing, all data were collected and each subtest was analyzed using the Spearman rank correlation. Also, the total scores for both forms of the test were analyzed using the Spearman rank correlation.

A Spearman rank correlation of .7122 was obtained on the word subtests of Forms A and B. This value indicated that the two forms of the word subtests of the Diagnostic Test of Speechreading were not highly correlated. The same is also true of the phrase and sentence subtests. Correlation coefficients of .2879 and .7061, respectively, were calculated for these subtests.

Before Form B is disregarded as an invalid alternative form of Test Form A, several factors which originated during the experiment should be considered. The first and probably most influential problem was that of the very small number and age range of the subjects. There were only 10 subjects, all of whom were six and seven year old girls. Perhaps, if this experiment had been attempted with a larger number of subjects of a wide age range which corresponds to that used by the original persons devising Form A of the Diagnostic Test of Speechreading, different results may have been obtained.

Another problem which might have influenced the results of the study was that the subjects were given both tests on the same day. The reason both tests were given on the same day was because it was difficult for the subjects to secure transportation to the testing location on separate days. If the tests had been given on different days, possibly the subjects would not have remembered the test pictures and would not have become overconfident with the testing procedure. It was thought that some of the subjects became less careful in their selection of responses on the second test administered to them.

In addition to this, fatigue clearly became a factor in the performance of several of the subjects. The total number of responses which were required for the young girls was 128, and in conjunction with this, some fatigue became evident toward the end of the second test. It appeared that some of the subjects may have answered more quickly and haphazardly during the administration of the second test in order to complete it quickly.

Similarly, the short attention span may effect the visual memory of the subjects. Each subject may not have focused on the movements and studied the pictures well enough to respond correctly. At the same time, the experimenter noticed that not all of the subjects understood exactly what each drawing was supposed to depict because they would ask what certain pictures represented. If each picture was identified out loud prior to the presentation of the lipped stimulus, maybe each subject could

better visualize the movements which were lipped as the test stimulus and, therefore, improve his or her score.

To sum up, an alternate form of the Myklebust and Neyhus Diagnostic Test of Speechreading was devised which could be presented through the use of live presentation. The performance of 10 six and seven year old girls was evaluated using the original Diagnostic Test of Speechreading (Form A) and the newly devised Form B. Statistical analysis indicated that all subtests (words, phrases, and sentences) of Forms A and B were not highly correlated. Various influences on the subjects' performances were discussed which, if improved upon in a second experiment might possibly change the results to indicate a significant correlation between both forms.

Appendix I
Test Record Form B

Name: _____ Sex: _____ Grade: _____

School: _____ Examiner: _____

Date of Birth: _____ Chronological Age: _____

Date of Test: _____

Raw Score:

Words _____

Phrases _____

Sentences _____

Phrases and Sentences _____

Total Score _____

WORDS

Plate	Word	Key	Response	Correct
1	soap	1	_____	_____
2	shoes	2	_____	_____
3	cone	4	_____	_____
4	two	4	_____	_____
5	four	1	_____	_____
6	turn on	2	_____	_____
7	grandmother	4	_____	_____
8	foot	3	_____	_____
9	vegetables	4	_____	_____
10	coat	3	_____	_____
11	trees	4	_____	_____
12	girl	3	_____	_____

13	man	4	_____	_____
14	hat	3	_____	_____
15	toothbrush	2	_____	_____
16	short	3	_____	_____
17	eats	1	_____	_____
18	white	2	_____	_____
19	cry	2	_____	_____
20	drink	2	_____	_____
21	car	2	_____	_____
22	cake	4	_____	_____
23	glasses	2	_____	_____
24	television	1	_____	_____
25	sweater	4	_____	_____
26	ride	3	_____	_____
27	little	2	_____	_____
28	table	4	_____	_____
29	potatoes	2	_____	_____
30	bow	3	_____	_____
31	dirty	3	_____	_____
32	strawberries	3	_____	_____
33	Santa Claus	4	_____	_____
34	zoo	3	_____	_____
35	doctor	2	_____	_____
36	fire engine	3	_____	_____

Number Correct _____

PHRASES

Plate	Phrases	Key	Response	Correct
37	two boats	4	_____	_____
38	a bow	4	_____	_____
39	short white boots	2	_____	_____
40	a little pig	1	_____	_____
41	two short doctors	1	_____	_____
42	some dirty shoes	4	_____	_____
43	a white sweater	2	_____	_____
44	a little white hat	1	_____	_____
45	some strawberries	3	_____	_____
46	a toothbrush and some glasses	3	_____	_____
			Number Correct	_____

SENTENCES

Plate		Key	Re- sponse	Correct
47	The birds eat.	1	_____	_____
48	The girl drinks milk.	3	_____	_____
49	Turn on the light.	2	_____	_____
50	The girl wears white boots.	2	_____	_____
51	Two clowns wear hats.	2	_____	_____
52	The man is so short.	3	_____	_____
53	The cat played with the bow.	1	_____	_____
54	The boy went to the car.	1	_____	_____
55	The man never wears glasses.	1	_____	_____
56	The farm has some trees.	2	_____	_____

- | | | | | |
|----|--|---|-------|-------|
| 57 | Santa Claus is wearing boots. | 4 | _____ | _____ |
| 58 | The short boy points to the man. | 1 | _____ | _____ |
| 59 | The boy eats some birthday cake. | 4 | _____ | _____ |
| 60 | There are some animals on
the farm. | 2 | _____ | _____ |
| 61 | The tree is white and has lights
on it. | 4 | _____ | _____ |
| 62 | The boy in the white sweater
has a car. | 1 | _____ | _____ |
| 63 | The girl needs to wear a hat
and boots. | 1 | _____ | _____ |
| 64 | Santa Claus has not put gifts
under the tree. | 2 | _____ | _____ |

Number Correct _____

Appendix II

Subjects' Scores on Individual Items
on the Word Subtest of Form A
of the Diagnostic Test of Speechreading

Key: + = Correct 0 = Incorrect

<u>Item No.</u>	<u>Subjects</u>									
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
1	+	+	+	0	+	0	+	0	0	+
2	+	+	0	+	+	+	+	+	0	+
3	+	+	+	0	+	0	+	0	+	+
4	+	+	+	+	+	0	+	+	+	+
5	+	+	+	0	+	0	+	+	+	0
6	+	+	+	+	+	+	+	0	+	+
7	+	+	+	+	0	0	+	+	0	+
8	+	+	+	+	+	+	+	+	+	+
9	+	+	+	0	+	0	+	+	+	+
10	+	+	+	0	+	+	+	0	0	+
11	+	+	0	+	+	+	+	0	+	+
12	0	+	+	0	+	0	+	0	0	+
13	+	+	+	+	+	+	+	+	0	+
14	+	0	+	+	+	+	+	+	0	0
15	0	+	+	0	+	+	+	+	+	+
16	0	+	+	+	+	+	+	+	+	+
17	0	+	0	+	+	+	+	+	+	+
18	+	+	+	+	+	+	+	0	+	+

Appendix II (continued)

<u>Item No.</u>	<u>Subjects</u>									
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
19	0	0	0	+	+	+	0	0	0	+
20	+	+	0	+	+	0	+	0	+	+
21	+	+	+	+	+	+	+	+	+	+
22	0	+	+	0	0	0	+	0	+	+
23	+	+	+	+	+	+	+	0	+	+
24	+	+	+	0	+	+	+	+	+	+
25	0	+	+	0	+	+	0	0	+	+
26	+	+	+	+	+	0	+	0	+	0
27	0	0	0	+	0	0	+	+	+	+
28	+	+	+	+	+	+	+	0	+	+
29	+	+	+	+	+	+	+	+	+	+
30	+	+	0	+	+	+	0	+	+	+
31	+	+	+	+	+	+	+	+	0	+
32	+	+	+	+	+	0	0	0	0	+
33	+	+	+	+	+	+	+	0	0	+
34	0	0	+	+	+	+	0	+	0	+
35	+	+	+	+	+	+	0	+	+	+
36	+	+	+	0	+	0	+	0	0	+

Appendix III (continued)

<u>Item No.</u>	<u>Subjects</u>									
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
19	+	+	+	+	+	+	+	+	+	+
20	+	+	+	0	+	+	+	+	+	+
21	+	+	+	+	+	+	+	0	0	+
22	+	+	+	+	+	+	0	+	+	+
23	+	+	0	+	+	+	0	+	+	0
24	+	+	+	+	0	0	+	+	0	+
25	+	+	+	+	+	+	+	0	0	+
26	+	+	+	0	+	+	+	0	+	+
27	0	+	0	+	+	0	+	+	0	+
28	+	+	+	+	0	+	+	+	+	+
29	+	+	+	0	0	+	0	+	+	+
30	+	+	+	+	+	+	+	+	+	+
31	0	+	+	+	+	+	+	0	+	+
32	+	+	+	+	+	+	+	+	0	+
33	+	+	+	+	+	+	+	0	+	+
34	+	+	0	+	+	+	+	+	0	+
35	+	+	+	0	+	+	+	0	+	+
36	+	+	+	+	+	+	+	0	0	+

Appendix IV

Subjects' Scores on Individual Items
of the Phrase Subtest of Form A
of the Diagnostic Test of Speechreading

Key: + = Correct 0 = Incorrect

<u>Item No.</u>	<u>Subjects</u>									
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
1	0	+	+	0	+	+	+	+	0	+
2	+	+	+	+	+	+	+	0	0	+
3	+	+	+	0	+	+	+	0	0	+
4	0	0	0	0	+	+	0	0	0	0
5	+	+	0	+	+	0	+	0	+	0
6	0	+	+	+	+	+	+	0	+	0
7	0	+	+	0	+	+	+	0	0	+
8	+	0	0	0	0	+	+	0	+	+
9	+	+	0	0	+	+	0	0	0	+
10	+	0	+	0	+	+	+	+	+	+

Appendix V

Subjects' Scores on Individual Items
of the Phrase Subtest of Form B
of the Diagnostic Test of Speechreading

Key: + = Correct 0 = Incorrect

<u>Item No.</u>	<u>Subjects</u>									
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
1	+	+	+	+	+	+	0	+	0	+
2	+	+	+	+	+	+	+	+	+	+
3	+	+	0	+	0	+	0	0	0	+
4	+	+	+	+	+	+	0	0	0	+
5	0	0	0	+	0	+	+	+	0	0
6	+	+	+	+	0	0	0	0	+	+
7	+	+	0	0	+	+	0	0	0	+
8	+	+	0	0	+	+	+	0	0	+
9	+	+	0	+	+	0	+	+	+	+
10	+	+	+	+	0	+	+	+	+	+

Appendix VIII

Subjects' Scores on Each Subtest on
Forms A and B
of the Diagnostic Test of Speechreading

Subjects	Form A			Form B		
	Word	Phrase	Sentence	Word	Phrase	Sentence
1	27	6	17	28	9	13
2	32	7	14	33	9	15
3	29	6	13	27	5	8
4	25	3	11	27	8	12
5	33	9	15	29	6	14
6	23	9	14	29	8	9
7	30	8	10	28	5	8
8	19	2	8	22	5	8
9	23	4	11	20	4	6
10	33	7	14	33	9	16
	—	—	—	—	—	—
Totals	274	61	127	276	68	109

Appendix IX

Subjects' Total Scores on Forms A and B
of the Diagnostic Test of Speechreading

Subject	Form A	Form B
1	50	50
2	53	57
3	48	40
4	39	47
5	57	49
6	46	46
7	48	41
8	29	35
9	38	30
10	54	58
	—	—
Totals	462	453

Appendix X

Spearman Rank Correlation Coefficients for Form A and Form B
of the Diagnostic Test of Speechreading

	Words	Phrases	Sentences	Totals
Correlation Coefficients	.7122	.2879	.7061	.8031

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