

THE DEVELOPMENT OF LISTENING  
COMPREHENSION TESTS FOR  
MICHIGAN STATE COLLEGE FRESHMEN

Thesis for the Degree of Ed. D.  
MICHIGAN STATE COLLEGE  
Clyde Walton Dow  
1952



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The Development of Listening  
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State College Freshmen

presented by

Clyde Walton Dow

has been accepted towards fulfillment  
of the requirements for

Ed.D. degree in Higher Education

Milosh Muntyan

Major professor

Date August 1, 1952

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THE DEVELOPMENT OF LISTENING COMPREHENSION TESTS  
FOR MICHIGAN STATE COLLEGE FRESHMEN

By  
Clyde Walton Dow

A THESIS

Submitted to the School of Graduate Studies of Michigan  
State College of Agriculture and Applied Science in  
partial fulfillment of the requirements  
for the degree of

DOCTOR OF EDUCATION

School of Education

1952

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Born, September

Undergraduate

Graduate Stu

Experience:



## VITA

Clyde Walton Dow  
candidate for the degree of  
Doctor of Education

**Final examination:** August 1, 1952, 10:00 A.M.

**Dissertation:** The Development of Listening Comprehension  
Tests for Michigan State College Freshmen

**Outline of Studies:** Major subject -- Higher Education  
Cognate field -- Speech

**Biographical Items:**

Born, September 18, 1907, Wakefield, Massachusetts

Undergraduate Studies, Emerson College, 1927-31.

Graduate Studies, University of Massachusetts, 1935-37;  
University of Denver, Summers 1939,  
1946, 1947;  
University of Wisconsin, Summer 1940;  
Teachers College, Columbia University,  
Summer 1942;  
Michigan State College, 1947-1952.

**Experience:** Graduate Assistant, University of Massachusetts, 1935-37;  
Instructor in English, University of Massachusetts, 1937-41;  
Assistant Professor of English in Charge  
of Speech, University of Massachusetts,  
1941-45;  
Associate Professor of Speech, University  
of Denver, Summer, 1941;  
Assistant Professor of Written and Spoken  
English, and Speech, Drama and Radio  
Education, Michigan State College,  
1945-47;  
Associate Professor of Written and Spoken  
English, and Speech, Drama and Radio  
Education, Michigan State College,  
1947-51;  
Associate Professor, Communication Skills,  
Michigan State College, 1951-

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AN ABSTRACT

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DOCTOR OF EDUCATION

School of Education

Year 1952

Approved Milva Muntz

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Purpose: The purpose of this study was to develop a test of listening having the following characteristics: (1) Limited to comprehension; (2) Limited to expository materials; (3) Adapted to first-term freshmen at Michigan State College; (4) Capable of being administered to large groups of students; (5) Short enough to be administered in a fifty minute listening "laboratory"; (6) Constant in presentation at different times; (7) Including a minimum of printed material to be read; (8) Including a maximum of oral material to be heard; (9) Capable of being easily and rapidly scored; (10) Meeting the requirements of good test construction, namely: a. Reliability, b. Validity, and c. Discrimination.

Procedure: First, Three passages ("Instructions for Taking the Test", "A Definition of Listening", and "Listening Can Be Taught") were prepared.

Second, implications from a speech text and four reading manuals suggested seven "standardized" foils as indicative of the major aspects of listening comprehension. Briefly, they are: (A) Those concerned with the central idea: (1) Quote. Exact repetition of the central idea. (2) Same central idea, but stated in different words. (3) False, twisted, or wrong statement of central idea. (B) Those concerned with details:

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## ABSTRACT OF THESIS BY CLYDE W. DOW

(4) Quote. Exact repetition of a detail. (5) Same or similar detail, but stated in different words. (6) False, twisted or wrong statement of a detail. (C) The one concerned with both central idea and details: (7) Unrelated. Not given nor implied in the passage.

Third, passages and foils were submitted to staff members and students in various trial forms to obtain items, and to determine their discrimination and difficulty. Numerous revisions and item analyses were made in arriving at the final form.

Results - Three Tests: Printed instructions, printed foils, and the scripts for materials to be recorded (a. Practice exercise, b. Passage, c. Thirty-two items) are given for each test.

Analysis: Reliabilities of the tests obtained by the test-retest method were: Test I .70, Test II .77, and Test III .71. Validity was studied by several methods: (a) Correlations with two parts of the Nichols Test were found to be .50 for Test I, .51 for Test II, and .81 for Test III. (b) Two of three experts reported favorable inspectional validity. (c) Correlations with A.C.E. psychological scores showed .44 for Test I, .51 for Test II, and .52 for Test III. (d) Correlations with A.C.E. reading scores were Test I, .53,

## ABSTRACT OF THESIS BY CLYDE W. DOW

Test II, .39, and Test III, .61. (e) Sex differences were found to be lacking in significance. (f) The tests were found to emphasize factors pertinent to comprehension as taught in the course and as derived from the speech text and reading manuals used in conjunction with the course. (g) The present tests compare favorably with other listening comprehension tests in the factors of reliability and validity considered.

The average difficulty of the tests was found to be 38.90, 46.87, and 52.43 respectively. Therefore two of the three tests, in their present form, meet the purpose for which they were developed.



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## CHAPTER I

## CHAPTER I

### INTRODUCTION

#### A. Listening in General

Listening in our society. The citizen in our society is expected to acquire knowledge, skills and attitudes not only for the discharge of his political responsibilities, but also for the purpose of earning a satisfactory living, raising a healthy family, and participating happily in general social and recreational activities.

In our society, reading and listening constitute the basic tools of learning as well as the prime media of social intercourse. In the fulfillment of these roles, the importance of reading has never been questioned. More recently, particularly since the advent of radio, the significance of listening is receiving increased recognition.<sup>1</sup>

Today, the "average" person in our society acquires information not only through the media of the printed page and the radio as Goldstein mentioned, but also through the increased use of telephone, recordings, sound-motion pictures and television. As he lives his regular life he will not only read, write, and talk, but he will also spend a significant part of his time in listening. He will, according

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<sup>1</sup> Harry Goldstein, Reading and Listening Comprehension At Various Controlled Rates, Teachers College, Contributions to Education, No. 821, Bureau of Publications, Teachers College, Columbia University, N. Y., 1940, 1.

to one report,<sup>2</sup> distribute his time among the several communication activities in the following proportions: 9 per cent in writing, 16 per cent in reading, 30 per cent in speaking, and 45 per cent in listening.

Listening in education. When our young future citizen begins attending school he will be subjected to a veritable barrage of talk to which he is expected to listen; and from which he is expected to begin acquiring some of the knowledge and some of those characteristics which will enable him to operate effectively in our society. In the elementary school he may be expected to listen 57.5 per cent of the total school day.<sup>3</sup>

At the secondary school level teachers talk, and students are apparently supposed to listen, an average of well above 50 per cent of the time.<sup>4</sup> The extremes range from 20 per cent to 95 per cent.

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<sup>2</sup> Paul T. Rankin, "Listening Ability: Its Importance, Measurement and Development", Chicago Schools Journal, XII (January, 1930), 179.

<sup>3</sup> Miriam E. Wilt, "A Study of Teacher Awareness of Listening As A Factor in Elementary Education", Ph.D. Thesis, Education Department Research Contribution, Pennsylvania State College, State College, Pennsylvania, 1949, 3.

<sup>4</sup> D.W. Morris and A.W. Huckleberry, "The Student Teacher's Speech", Quarterly Journal of Speech, XXIX (December, 1944), 485-489. This is a report of self-ratings from approximately 1,000 elementary and secondary public school teachers.

No studies of the amount of time college students spend in listening are available at present, but a casual consideration of the number of lectures, discussions, and recitations in the schedule of the average college student will suggest that both the amount of time spent in listening, and the amount of information expected to be acquired through listening is not insignificant.

#### B. Listening at Michigan State College

Stated course objectives. The importance of listening as a part of education at Michigan State College was given concrete form when the committee responsible for the organization of Basic Education included among the stated objectives a specific reference to skill in listening. "The Report of the Committee Appointed 'for Study and Recommendation' Concerning Basic Education at Michigan State College",<sup>5</sup> stated that the broad objective of the "Area of Written and Oral Communication"<sup>6</sup> is:

To improve the student's ability to communicate clearly in speech and in writing and also to comprehend spoken and written discourse.<sup>7</sup>

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<sup>5</sup> "Report of Committee Appointed 'for Study and Recommendation' Concerning Basic Education at Michigan State College", Faculty Meeting, May 22, 1944.

<sup>6</sup> The name originally recommended for the course was "Written and Oral Communication." This was changed to "Written and Spoken English" at the Faculty Meeting of May 22, 1944. The title "Communication Skills" became effective July 1, 1952.

<sup>7</sup> Underline is the writer's.

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Among the specifically listed objectives of the course is the following pertaining exclusively to listening: "To listen with comprehension and critical evaluation".

The listening program. To achieve the listening objectives stated in the "original charter" of the course the Department of Communication Skills established a listening "laboratory". This "laboratory" consisted of a fifty minute weekly lecture period in which large groups of students (up to 350) listened to forty to forty-five minute lectures by members of the department on some aspect of language or communication. The students took notes on this lecture material. The lecture and notes were later discussed in some regular class period.

This method of "practicing" listening without receiving instruction about the skill was generally unsatisfactory. There was little if any difference between this practice, and similar lecture situations which the student attended in Biology, History, or other disciplines. During the fall of 1947, the head of the department expressed a desire to have the listening program improved. At that time several members of the department, including the writer, met and began a search for studies and teaching materials on the subject of listening. Eventually an improved listening program was

developed.<sup>8</sup> While a member of this group the writer became interested not only in improving listening instruction, but also in developing a test instrument that would measure the amount of listening skill possessed by students in Communication Skills classes.

#### C. The Need for An Instrument to Measure Listening Skill

If listening skill was to be taught much information was needed concerning it: What was it? What were its most important constituents? How much of it existed in college freshmen? How much improvement could be made by instruction? What kinds of instruction would bring about the greatest improvement? Would improvement be permanent or would regression take place? Basic to an understanding of many of these questions was some type of measuring instrument that would give an indication of the amount of listening skill possessed by the students in the Communication Skills classes.

#### D. The General Statement of the Problem

In 1947, a great deal of information was needed concerning the subject of listening. One small area of needed information was selected by the writer. He undertook the limited objective of developing a test which would give some indication of the amount of listening skill possessed by

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<sup>8</sup> See Charles E. Irvin, "An Analysis of Certain Aspects of A Listening Training Program Conducted Among College Freshmen at Michigan State College," Unpublished Ed.D. Thesis, Michigan State College, 1952, for one report of the program.

freshmen students in the Michigan State College Communication Skills program.

E. Factors in the Course Influencing the General Nature  
of the Measuring Instrument and the Specific  
Statement of the Problem

Exposition. The first two quarters of the course in Communication Skills are devoted to the study and improvement of reading, writing, speaking and listening in the area of exposition. The third term is devoted primarily to persuasion. As a first objective, it seemed desirable to concentrate on the development of a measuring instrument paralleling the first two quarters of the course, and thus limit the content of the test to expository materials.

Comprehension. The primary objective of expository speaking and writing as stated in the Syllabus of the course is clear understanding on the part of the receiver. In view of both the organization of the course and the end objective of expository communication, it seemed desirable to limit the test to comprehension. Persuasive communication, which may require critical analysis, calls for a measure of critical listening. The writer proposes to develop such a test, but it is outside of the scope of the present study.

Size. Since the normal listening "laboratory" is composed of groups of students ranging up to 350 in number,



the test should be so constructed that it could be administered to large groups of subjects at one time.

Time. The first important time factor that influenced the construction of the test was the requirement that a maximum amount of time be devoted to listening instruction and to practice in listening. Those factors suggested that the test should require a relatively short time to administer: It should not consume several periods.

The second important time factor was the fifty minute class period. If large numbers of students were to assemble in one room, receive the necessary materials, take a test, and be dismissed in time for the next class, then the test would have to be timed to be administered in considerably less than fifty minutes.

The third important time factor was related to size of the total freshman class. If large numbers of students (from 2,500 to 5,000) were to receive results of the test in reasonable time, or if the staff members were to receive results in a reasonable time, then the test had to be capable of rapid and easy scoring. This factor lead to the desirability of an objective examination which was capable of being rapidly hand scored or of being machine scored.

Motivation. Because the primary objective of the listening "laboratory" is to have students improve their listening skill, a motivation toward that end might result

if students could know how their listening ability compared with that of their classmates. Stroud has said,

The examination holds possibilities for motivating pupils, realization of which will depend upon the way it is used. . . . Knowledge of attainment based upon an examination whose validity the pupil respects should, in the light of psychological data, be an important motivational force. Properly used, the examination may also possess diagnostic value in that it informs the student where his strength or weakness lies.<sup>9</sup>

This factor of possible motivation suggested that the test might be short enough to administer and easy enough to score to permit students to both take and score the test within the fifty minute "laboratory" period.

Student level. All regular freshmen students are required to enroll in the Communication Skills course during their first quarter at the college. The general level of student development is therefore representative of a relatively uniform group. There are some transfer students, and some more mature students, as well as a few foreign students, but these latter constitute a small percentage of the total. In view of the predominance of "typical" first quarter freshmen in the course, the test material was prepared for beginning freshmen students.

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<sup>9</sup> James B. Stroud, Psychology in Education, Longmans, Green and Co., Inc., N. Y., 1946, 476.

F. Factors of Listening Influencing the General Nature  
of the Measuring Instrument and the Specific

Statement of the Problem

The act of listening. The process or the act of listening as a part of the process of communication is an extremely complex one. In essence, some stimulus within or without one person causes a sensory impression which after going through pre-verbal states takes on symbolic forms which are transformed into verbal formulations (a) air waves and (b) light waves, which stimulate the listener or receiver who in turn, through a similar complex process, in his own nervous system, translates these stimuli into meaning something near that of the person who spoke.<sup>10</sup> Too simply stated this means that listening is concerned primarily with the aural (ear) reception and translation by one person of oral (spoken) language symbols (words) of another person. The implication of these factors for the construction of a test to measure listening meant that a speaker as well as a receiver had to be involved. This speaking could be done in at least four ways: (1) The speaker actually could be present, (2) A sound-motion picture could be made of a speaker, (3) A recording could be made of a speaker, or (4) A speaker

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<sup>10</sup> Wendell Johnson, "The Spoken Word and the Great Unsaid", Quarterly Journal of Speech, XXXVII (December, 1951), 42.

could talk over a public address system and not be visible to the listeners.

Standardization. To prevent variations in presentation of the spoken material that would normally result from having a speaker deliver the same test material ten different times in each listening "laboratory" the test had to be presented either on sound-motion picture film or by recording. Primarily because of the expense involved in producing synchronized sound pictures, the test was recorded. The recording on tape or records maintained a relatively standard presentation for all ten sections of the listening "laboratory". The omission of the visual cues (opportunity to see the speaker) have been shown to result in some loss of comprehension<sup>11</sup> but the gain in constancy of presentation and the reduction of cost would compensate for the omission of visual cues. Moreover, since the administration of test materials was relatively constant, an adjusted interpretation of the results could be made if desired.

Minimum Reading. Since listening as here used is primarily an auditory receptive skill, the introduction of reading material in the form of printed questions or multiple-choice answers would introduce another variable into the

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<sup>11</sup> Edward J.J. Kramar and Thomas R. Lewis, "Comparison of Visual and Nonvisual Listening," Journal of Communication, I (November, 1951), 16-20.

measuring situation. Standard reading tests are administered to all incoming freshmen, and some of the students were known to have low scores on the reading rate and comprehension tests. Furthermore, Goldstein,<sup>12</sup> in a very carefully controlled study, indicated that some of his college students were definitely superior in their understanding of either spoken or printed language. Although investigators<sup>13</sup> have found correlations ranging from .27 to .82 with an average of .70 between listening and reading skills, the less reading there was in the test the more valid the test would be. Therefore, the test was constructed to keep reading materials at a minimum. The ideal would probably be no reading, but that ideal was not attained.

Simple answer sheet. In relation to reading and answer sheets both Villarreal<sup>14</sup> and Kaulfers,<sup>15</sup> although they were writing about aural comprehension of foreign languages, point out the great discrepancy that may exist between understanding spoken language and being able to read it or

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<sup>12</sup> Harry Goldstein, op. cit., 59.

<sup>13</sup> Ralph G. Nichols, "Needed Research in Listening Communication", Journal of Communication, I (May, 1951), 48.

<sup>14</sup> Jesse J. Villarreal, "A Test of Aural Comprehension of English for Native Speakers of Spanish", Speech Monographs, XV (No. 2, 1948), 121-132.

<sup>15</sup> Walter V. Kaulfers, "Wartime Developments in Modern-Language Achievement Testing", Modern Language Journal, XVIII (1944), 139-150.

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to write it. Although the comparison between reading English and hearing English by native Americans is not identical with that of Americans learning a foreign language, a degree of similar difficulty can well exist between the person who may possibly possess a high degree of understanding of what is said in English and at the same time possess a low understanding of what is written in English. Therefore, questions, foils, and answer sheet were constructed to contain the least amount of reading possible.

#### G. Specific Statement of the Problem

The specific problem for this investigation thus became: To develop a test of listening having the following characteristics:

1. Limited to comprehension.
2. Limited to expository material.
3. Adapted to first-term freshmen at Michigan State College.
4. Capable of being administered to large groups of students.
5. Short enough to be administered in a fifty minute listening "laboratory".
6. Constant from section to section (recorded).
7. Including a minimum of printed material (to be read).
8. Including a maximum of oral material (to be heard).
9. Capable of being easily and rapidly scored.

10. Conforming to the requirements of good test construction; and therefore possessing:

- a. Reliability
- b. Validity
- c. Discrimination

#### H. Definition of Listening Comprehension

The terms "listening" and "listening comprehension" have been subjected to numerous interpretations.

Rankin<sup>16</sup> defined listening as follows:

Listening ability is the ability to understand spoken language. I do not mean the readiness to pay attention, as teachers often mean when they say, "He won't listen". Rather, I mean the trait that has the same relation to speech that reading has to writing. Ability to listen well is to understand what one hears.

Nichols<sup>17</sup> stated:

The present study was concerned with aural assimilation when visual and oral cues were both present, when speakers confronted audiences in face-to-face situations, being seen as well as heard, when the time of testing comprehension of speeches immediately followed their delivery, . . . For the sake of clarity, the term listening comprehension is arbitrarily used throughout this paper to refer only to this kind of performance. Similarly, auditory comprehension is hereafter arbitrarily used to refer only to aural assimilation in which oral cues alone are operative.

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<sup>16</sup> Paul T. Rankin, op. cit., 177.

<sup>17</sup> Ralph G. Nichols, "Factors in Listening Comprehension", Speech Monographs, XV (No. 2, 1948), 155.



In another place Nichols<sup>18</sup> has further clarified his use of the term listening by dividing it into three main types:

1. Discriminative listening to informative materials which is limited to comprehension. This is sometimes referred to as discriminatory listening.
2. Critical listening to persuasive materials. This involves evaluation as well as comprehension.
3. Appreciative listening to any aural presentation gratifying to the senses.

Villarreal<sup>19</sup> gave an "Operational definition of the term 'aural comprehension'", as follows:

By aural comprehension of English is meant the ability to extract appropriate meaning from connected samples of the English system presented orally. It is recognized that there are many levels of comprehension, depending upon the type of material presented and the measure of comprehension applied. Comprehension may conveniently be thought of as a continuum, grading from very simple instances (for example, a horse stopping on command) to much more complex situations (such as the interpretation of highly metaphorical poetry). This study is concerned primarily with that segment of the continuum represented by the communication of factual information. At this level of understanding, it may be assumed that the listener understands if he is able to say what happened, describe objects and persons talked about, and repeat explanations.

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<sup>18</sup> Ralph Nichols, "Teaching of Listening", Chicago Schools Journal, XXX (June, 1949), 274.

<sup>19</sup> Jesse J. Villarreal, op. cit., 122.

James Brown<sup>20</sup> said:

By listening comprehension is meant the aural assimilation of spoken symbols in a face to face speaker-audience situation, with both oral and visual cues present. Listening comprehension assumes the ability to hear, but hearing and listening are not to be considered synonymous. The medical doctor's concern is with hearing; the instructor's concern is with listening.

John Caffrey<sup>21</sup> objected to the term listening comprehension, and proposed instead the term auding coined by Don Brown of Sequoia (California) High School.

As long as we confuse auding with "listening", we shall achieve results comparable to those which we might obtain by confusing reading with "looking". Reading is not "looking comprehension;" I can comprehend the purpose of objects such as revolvers or medicine droppers without being able to read. Similarly, I can comprehend the probable purposes or sources of barking, slapping, or shooting without being able to "aud".

Blewett<sup>22</sup> defined it as follows:

Listening is the process of attaching meanings to the spoken word. According to this definition hearing is not necessarily equivalent to listening. One may hear, that is to say apprehend, an unfamiliar foreign tongue, but he may be unable to comprehend, understand, or attach meaning to that which he hears.

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<sup>20</sup> James I. Brown, "The Construction of A Diagnostic Test of Listening Comprehension", Journal of Experimental Education, XVIII (December, 1949), 140.

<sup>21</sup> John Caffrey, "The Establishment of Auding-Age Norms", School and Society, 70 (November 12, 1949), 310.

<sup>22</sup> Thomas T. Blewett, "An Experiment in the Measurement of Listening at the College Level", Journal of Communication, I (May, 1951), 50.

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<sup>23</sup> Charles Irvin

Irvin<sup>23</sup> defined listening along similar lines:

. . . In the first place, listening is to be differentiated from hearing, although the layman often uses the two synonymously. Hearing is the awareness of sound. You may hear a foreign language; you may hear the motor of your car. Listening is more than hearing. It is important to remember that. . . listening involves the comprehension of what is heard. Listening to a foreign language involves the understanding of that language. Listening to the motor of your car involves listening for something; a knock, or a jumping spark.

. . . This writer has, . . . defined [listening] as "reception and comprehension; reception and evaluation of orally presented materials".

For purposes of the present study, listening is defined in considerable detail. The definition contains six major divisions:

1. The first important factor in listening is the reception of sound. There must be the physical presence of sound waves. When people listen to the telephone, radio, recordings, or a person not visible, they depend exclusively on the ear. When people "listen" to television, sound-motion pictures, or a speaker before them, they receive not only auditory impressions (sound waves), but also visual impressions (light waves). The visual element may or may not be present. If present, it is a further aid to understanding; but visual impressions may be entirely excluded and people can still listen. The primary (but not exclusive) requirement is, therefore, the reception of sound.

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<sup>23</sup> Charles Irvin, op. cit., 4.

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2. The human ear is sensitive to a multitude of sound vibrations. An extremely broad classification of these sounds ranges from simple noise to complex musical tones. The term listening as used herein is arbitrarily limited to those speech sounds produced by human beings. Excluded are all other auditory impressions such as telegraphic code, tom-toms, instrumental music, train whistles, the drumming of horses' hoofs, etc. It is not that these auditory sensations do not communicate meaning to those who know how to interpret them, but that the chief act of listening in communication is with those sounds produced by human beings.

3. Human beings produce a wide variety of speech sounds. Humming may be cited as one example that may or may not be communication. The babbling stage of language development in children is another example. In listening we are generally concerned with those sounds produced by human beings that we call language symbols. In reading, the communication is received through printed language symbols; in listening the communication is received through spoken language symbols, or word sounds. Singing also makes use of "spoken" language symbols, but generally with greater and more abrupt variations in pitch, force and rate; and these variations normally conform to a set of pre-determined notes. However, the major type of human sound involved in the act of listening is the reception of spoken language symbols.

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4. In the act of listening there must be a receiver.

It seems unnecessary here to debate the argument, If a tree falls and there is no one present to hear it, is there any sound? If no one is present to hear a human being producing spoken language symbols, there is no act of listening.

Listening includes a receiver.

5. Observation will confirm the fact that people do not always "pay attention" to the flow of spoken language which reaches their ears. The common phrase, "I wasn't paying attention", or "I wasn't listening", suggests that within limits, the act of listening involves some degree of "attending". The distinction between the terms "hearing" and "listening" is sometimes drawn by the statement, "I heard it, but I wasn't listening". This latter statement indirectly implies the requirement of attention. It is assumed that one factor in listening is at least some degree of a "physical-mental set" of attention on the part of the person receiving the orally produced language symbols.

6. Listening, as herein used, includes the comprehension of the heard language symbols.

Comprehension, as Latin students know, means "taking together", or as we would say, "taking in". This involves both memory and the organization of thought, as well as recognition of words.<sup>24</sup>

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<sup>24</sup> Ruth Strang, Study Type Reading Exercises, Bureau of Publications, Teachers College, Columbia University, N. Y., 1935, 1.



The common synonyms "get", "catch", "see", and "understand" tend to convey the idea of "meaningfulness" on the part of the listener who comprehends.

The question, "What is the meaning of the term 'reading comprehension'?" brought the following reply from a reading clinic director: "Reading comprehension involves interpreting the word symbols and getting the meaning the writer intended. When you define reading, you define comprehension."

"Comprehension", as Villarreal<sup>25</sup> noted, "may conveniently be thought of as a continuum, grading from very simple instances . . . to much more complex patterns. . . ."

In the sense of this study, comprehension is concerned with that segment of the continuum devoted to the understanding of factual expository material. At this level of understanding it was assumed that if the listener "got the meaning" intended by the speaker as confirmed by colleagues and students in previous test trials, then the listener had "comprehended".

Summary of definition. Listening may thus be defined as the act of an attentive person, receiving and understanding spoken language symbols.

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<sup>25</sup> Jesse J. Villarreal, op. cit., 122.

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## I. Basic Assumptions Involved in the Study

Inherent in the development of a test to measure the listening ability of Michigan State College freshmen were the following assumptions:<sup>26</sup>

1. Listening ability exists in different degrees in different people.

2. Listening ability, like other abilities, is distributed among the general population according to the principle of normal probability.

3. Any measure of listening ability should involve a minimum use of other means of communication such as reading and writing.

4. Listening ability can be measured in quantitative terms, provided a suitable measuring instrument can be devised.

5. Since listening involves some form of response, either overt or covert, the amount and quality of listening can be measured in terms of some observable behavior.

6. The ability to identify clearly the major thought of an orally presented passage, as well as some of the details; the ability to distinguish clearly between exactly what has been heard and what has not been heard; and the ability to distinguish relevant from irrelevant materials,

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<sup>26</sup> Thomas Blewett, op. cit., 50, listed a set of basic assumptions similar to several underlying the present study.

indicate the degree of listening comprehension skill possessed by freshmen college students.<sup>27</sup>

7. Material which is of instructional value can also be used as test material.

8. Listening ability, as understood in this study, assumes the ability to hear: auditory acuity is assumed to be "normal".

#### J. Preview of Organization of Thesis

Chapter II of this study gives a brief review of the tests that have been developed to measure listening comprehension, Chapter III explains the development of the seven standardized foils, Chapter IV presents the material selected for the three oral passages, Chapter V reports the method used for obtaining the items used in the three tests, Chapter VI presents the study of reliability, Chapter VII explains the procedures used to make the tests valid, and Chapter VIII presents the complete scripts for all three tests. Appendix A contains a description of tests used to measure listening comprehension. The individual test scores for all students participating in the final phases of the study are given in Appendix B.

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<sup>27</sup> See Chapter III, "The Development of the Foils" for a more detailed statement.

### K. Summary of Chapter

Chapter I has presented (a) a general picture of listening in our society, (b) listening at Michigan State College, (c) the need for an instrument to measure listening skill, (d) a general statement of the problem, (e) factors in the course influencing the general nature of the measuring instrument, (f) factors of listening influencing the general nature of the measuring instrument, (g) a specific statement of the problem, (h) a definition of listening, (i) basic assumptions involved in the study, and (j) a preview of the organization of the thesis.

## CHAPTER II

## CHAPTER II

### A BRIEF SUMMARY OF TESTS MEASURING LISTENING COMPREHENSION

Nearly all students of listening have reported some of the research preceding their own studies. Nichols,<sup>1</sup> as part of his work, compiled a bibliography of studies relating to listening. Schneider<sup>2</sup> reviewed some of the literature, and Brown<sup>3</sup> gave a brief description of tests together with a summary of the findings.

No previous research, however, has devoted space to a detailed description of the tests used in the several studies to date. Because this test material is difficult to obtain, and because it is widely scattered among various periodicals, in unpublished theses, and in mimeographed, unpublished form, the present writer undertook a detailed description of many of the tests developed for earlier research. Thirty-four

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<sup>1</sup> Ralph G. Nichols, "Factors Accounting for Differences in Comprehension of Materials Presented Orally in the Classroom", Unpublished Ph.D. thesis, State University of Iowa, 1948, 298 pp.

<sup>2</sup> Wallace A. Schneider, "A Review of Some of the Literature Related to Listening", Unpublished MA. thesis, University of Denver, 1950, 86 pp.

<sup>3</sup> James I. Brown, "The Construction of a Diagnostic Test of Listening Comprehension", Unpublished Ph.D. thesis, University of Colorado, 1949, 184 pp.

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studies have been reported, and thirty-two tests have been described. Also details of administration, and analyses of reliability and validity have been recorded whenever such information was reported. The material has been compiled in Appendix A. Studies concerned primarily with persuasive material, shift-of-opinion, note-taking vs. no note-taking, and those whose objective was aesthetic listening, have been omitted since they were considered as being largely outside the limits of the present study emphasizing the measurement of listening comprehension for expository lecture material.

In this chapter, the tests used to measure listening comprehension have been classified and listed. Pertinent findings from earlier research have been incorporated into the body of the study at appropriate places. Material concerning the reliability of earlier studies is concentrated primarily in Chapter VI; and material concerning the relationship of earlier findings to such factors as intelligence, and reading ability is concentrated in Chapter VII. The major description of previous tests has been placed in Appendix A.

A. Studies in Which the Development of a Listening  
Comprehension Test has been a Relatively  
Minor Part

1. Tests based on adaptations of silent reading and vocabulary tests. Among the studies utilizing silent reading

and vocabulary tests are those by Anderson and Fairbanks,<sup>4</sup> Burton,<sup>5</sup> Goldstein,<sup>6</sup> Johnson,<sup>7</sup> Larsen and Feder,<sup>8</sup> and Sims and Knox.<sup>9</sup>

2. Tests based on classroom lectures. Six studies have used a type of classroom lecture as basic materials for a listening test. These are represented in studies by Corey,<sup>10</sup>

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<sup>4</sup> Irving H. Anderson and Grant Fairbanks, "Common Differential Factors in Reading Vocabulary and Hearing Vocabulary," Journal of Educational Research, 30 (January, 1937), 317-324.

<sup>5</sup> Mary Burton, "The Hearing and Reading Comprehension of Vocabulary Among High School Seniors", School Review, 52 (January, 1944), 47-50.

<sup>6</sup> Harry Goldstein, Reading and Listening Comprehension at Various Controlled Rates, Contributions to Education, No. 821, Bureau of Publications, Teachers College, Columbia University, New York, 1940, 69 pp.

<sup>7</sup> Kenneth O. Johnson, "The Effect of Classroom Training Upon Listening Comprehension," Journal of Communication, I (May, 1951), 57-62.

<sup>8</sup> Robert P. Larsen and D. D. Feder, "Common and Differential Factors in Reading and Hearing Comprehension", Journal of Educational Psychology, XXXI (April, 1940), 241-252.

<sup>9</sup> V. M. Sims and L. B. Knox, "The Reliability and Validity of Multiple-Response Tests When Presented Orally", Journal of Educational Psychology, XXIII (December, 1932), 656-662.

<sup>10</sup> Stephen M. Corey, "Learning from Lectures vs. Learning from Readings", Journal of Educational Psychology, 25 (September, 1934), 459-470.

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<sup>18</sup> Franklin H.  
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Greene,<sup>11</sup> Loder,<sup>12</sup> Russell,<sup>13</sup> Stump,<sup>14</sup> and Young.<sup>15</sup>

3. Tests based on special types of material or utilizing special situations. Nelson and Moll<sup>16</sup> used sound-films, Roulon<sup>17</sup> and his associates used standard, published recordings, while Knower, Phillips and Koeppel<sup>18</sup> used specially

- <sup>11</sup> Edward B. Greene, "The Relative Effectiveness of Lecture and Individual Reading as Methods of College Teaching", Genetic Psychology Monographs, IV (December, 1928), 457-563.
- <sup>12</sup> Edwin J. Loder, "A Study of Aural Learning With and Without the Speaker Present", Journal of Experimental Education, VI (September, 1937), 46-60.
- <sup>13</sup> R. G. Russell, "A Comparison of Two Methods of Learning", Journal of Educational Research, XVIII (October, 1928), 235-238.
- <sup>14</sup> N. F. Stump, "Oral Versus Printed Method in the Presentation of True-False Examination", Journal of Educational Research, XVIII (December, 1928), 423-424.
- <sup>15</sup> William E. Young, "The Relation of Reading Comprehension and Retention to Hearing Comprehension and Retention", Journal of Experimental Education, V (September, 1936), 30-39.
- <sup>16</sup> Harold E. Nelson and Karl R. Moll, "Comparison of the Audio and Video Elements of Instructional Films", Journal of Communication, I (May, 1951), 62-66.
- <sup>17</sup> Phillip J. Roulon and others, "A Comparison of Phonographic Recordings with Printed Material in Terms of Knowledge Gained through Their Use Alone", Harvard Educational Review, XIII (January, 1943), 63-76.
- <sup>18</sup> Franklin H. Knower, David Phillips, and Fern Koeppel, "Studies in Listening to Informative Speaking", Journal of Abnormal and Social Psychology, 40 (February, 1945), 82-88.

prepared informative speeches. Stanton<sup>19</sup> used orally presented advertising material for checking ability to remember trade names. Selover and Porter<sup>20</sup> had material from a recent book read aloud to subjects. Kreuger<sup>21</sup> used a type of printed word list, and Carver<sup>22</sup> prepared materials emphasizing selected words, phrases, and sentences.

Studies by Erickson and King,<sup>23</sup> and by Spache<sup>24</sup> give no descriptive details of the tests used.

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- <sup>19</sup> Frank N. Stanton, "Memory of Advertising Copy Presented Visually vs. Orally", Journal of Applied Psychology, XVIII (February, 1934), 45-64.
- <sup>20</sup> Robert B. Selover and James P. Porter, "Prediction of the Scholarship of Freshman Men by Tests of Listening and Learning Ability", Journal of Applied Psychology, XXI (October, 1937), 583-588.
- <sup>21</sup> David H. Kreuger, "A Study of the Results of Teaching Factors of Listening Comprehension to College Freshmen in the Basic Communication II Course", Unpublished M.A. Thesis, Whittier College, 1950, 176 pp.
- <sup>22</sup> Merton E. Carver, "Listening Versus Reading", Chapter IX, 159-180, in Hadley Cantril and Gordon W. Allport, The Psychology of Radio, Harper and Brothers, N. Y., 1935.
- <sup>23</sup> C. I. Erickson and Irving King, "A Comparison of Visual and Oral Presentation of Lessons in the Case of Pupils from the Third to the Ninth Grades", School and Society, VI (August, 1917), 146-148.
- <sup>24</sup> George Spache, "The Construction and Validation of a Work-Type Auditory Comprehension Reading Test", Educational and Psychological Measurement, X (1950), 249-253.

## B. Studies in Which the Development of A Listening Test was A Significant or Major Part

Among the studies in which the development of a test of listening comprehension was a major objective are the following which have been arranged in chronological and then alphabetical order:

Rankin<sup>25</sup> (1930) was apparently the first person who was interested in measuring listening for itself rather than for some related problem. Sullivan<sup>26</sup> (1937) although primarily interested in reading, developed a test of auditory comprehension for children. Nichols<sup>27</sup> (1948) appears to have been the first person to make a carefully controlled attempt to build a test of listening ability at the college level. Following him in rapid order came tests by Prince<sup>28</sup> (1948),

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<sup>25</sup> Paul T. Rankin, "Listening Ability, II, Its Importance, Measurement, and Development", Chicago Schools Journal, XII (June, 1930), 417-420.

<sup>26</sup> Helen Blair Sullivan, "The Construction and Evaluation of a Measure of Auditory Comprehension", Unpublished M.A. thesis, Boston University, 1937, 44 pp.

<sup>27</sup> Ralph G. Nichols, "Factors in Listening Comprehension", Speech Monographs, XV (No. 2, 1948), 154-163.

<sup>28</sup> Bernice L. Prince, "A Study of Classroom Listening Effectiveness in Basic Communication and its Relationship to Certain Other Personal Factors", Unpublished M.A. thesis, University of Denver, 1948, 93 pp.

Brown<sup>29</sup> (1949), Harwood<sup>30</sup> (1950), The Nashville (Tennessee) Public Schools<sup>31</sup> (1950), Stromer<sup>32</sup> (1950), Widner<sup>33</sup> (1950), Blewett<sup>34</sup> (1951), Heilman<sup>35</sup> (1951), Kramar and Lewis<sup>36</sup> (1951), and the Stephens College Test of Listening Ability, Form A.<sup>37</sup> (1951).

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- <sup>29</sup> James I. Brown, "The Construction of A Diagnostic Test of Listening Comprehension", Unpublished Ph.D. thesis, University of Colorado, 1949, 184 pp.
- <sup>30</sup> Kenneth Albert Harwood, "An Experimental Comparison of Listening Comprehensibility with Reading Comprehensibility", Unpublished Ph.D. thesis, University of Southern California, 1950, 157 pp.
- <sup>31</sup> No author, "Listening Abilities of Pupils in the Nashville Public Schools, A Survey: Grades 1-12", Nashville Public Schools, Nashville, Tennessee, September, 1950, 20 pp.
- <sup>32</sup> Walter F. Stromer, "Strength of Opinion, Auditory Memory Span, and the Ability to Gather Meaning from Contextual Clues as Factors in Listening", Unpublished M.A. thesis, University of Denver, 1950, 44 pp.
- <sup>33</sup> Ralph William Widner, Jr., "A Preliminary Study of the Effects of Training in Listening", Unpublished M.A. thesis, University of Oklahoma, 1950, 152 pp.
- <sup>34</sup> Thomas T. Blewett, "An Experiment in the Measurement of Listening at the College Level", Journal of Communication, I (May, 1951), 50-57.
- <sup>35</sup> Arthur W. Heilman, "Measuring and Improving Listening Ability", Speech Monographs, XVIII (No. 4, 1951), 302-308.
- <sup>36</sup> Edward J. J. Kramar and Thomas R. Lewis, "Comparison of Visual and Nonvisual Listening", Journal of Communication, I (November, 1951), 16-20.
- <sup>37</sup> Stephens College Test of Listening Ability, Form A, (Mimeographed) Prepared by the Division of Communication, Stephens College, Columbia, Missouri, 1951, 20 pp.





### C. The Present Tests in Relation to Previous Tests

No tests identical to the present tests appear to have been developed. Particularly, no tests appear to have been, as the present tests were, based upon an analysis of the implications for listening comprehension as derived from speech texts and reading improvement manuals; and no tests utilizing seven "standard" foils for all items appear to have been used previously; nor does subject matter material about listening appear to have been used in earlier tests.

### D. Summary of the Chapter

The purpose of this chapter was to give a brief listing of studies that have included a test to measure listening comprehension. A detailed description of such tests is given in Appendix A.

Among the twenty-one studies in which the development of a test was of secondary concern, only one mentioned an attempt at item analysis, only three mentioned validity, and nine mentioned reliability.

In thirteen studies having the development of a listening test as significant part Rankin appears to have been the first to be interested in exploring the possibilities of developing a test to measure listening itself. Sullivan did careful work in developing a test to measure the auditory comprehension of younger children. It was nearly ten years later that Nichols did the first careful work of constructing

a test to measure the listening comprehension of college students. Since Nichols, studies in which the construction of a test to measure listening was a significant part have increased rapidly.

The present tests differ from previous tests in their emphasis upon factors in listening comprehension as derived from speech and reading manuals, in the use of seven "standard" foils for all items, and in the use of material about listening as subject matter passages.

### CHAPTER III

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## CHAPTER III

### THE DEVELOPMENT OF THE FOILS

#### A. Development and Failure of A Completely Auditory Test

The first attempt to develop a test of listening comprehension for Michigan State College freshmen was begun in the spring of 1948. This test was a completely auditory (no reading) test. Even though this particular attempt failed, because it brought to light a number of significant factors that were important to the tests finally developed, and because these testing methods may be capable of refinement by future scholars, a brief description, as well as a brief statement of their trial, has been included here.

Brief description. The completely auditory test consisted of five parts:

Part 1 was composed of digits for recall. A series of numbers composed of from three to eight digits were presented. Then five other numbers also composed of from five to eight digits were presented. One of the five numbers was the same as the original. The purpose of this part of the test was to measure the listener's auditory memory span for numbers. There were five questions in Part 1.

Part 2 was composed of four short passages of about 150 to 175 words each. Each passage was developed by one of the common methods of speech development such as details, statistics, analogy, or illustration. Immediately after hearing the passage the listener heard five statements, one of which was a correct representation of the central idea of the passage. The purpose of this part of the test was to see if the listener could grasp the main idea of a passage when the idea was presented in varying developmental techniques. There were four questions in Part 2.

Part 3 was composed of words and sounds. The listeners heard a list of from five to eight words or sounds. Then they heard five separate words or sounds, only one of which was in the original list. They were asked to mark the space on the answer sheet which indicated the repetition of the one word or sound that occurred in the original list. The purpose of this part of the test was to see if the listener could understand and carry in mind exactly what he had heard. There were four questions in Part 3.

Part 4 presented lists of either words, or sounds, or numbers composed of from five to nine words, sounds, or numbers. Then the listener heard five other words, or sounds, or numbers, four of which were exactly the same as the words, sounds, or numbers heard originally; but the fifth had not been included in the original list. Listeners were asked to mark the space on the answer sheet corresponding to the one

word, sound, or number not originally presented. The objective was to determine whether the listener could distinguish exactly between what he had heard and what he had not heard. There were five questions in Part 4.

Part 5 consisted of four short expository passages of about one hundred words each. Each selection was followed by three questions. The first question asked, "What was the selection mainly about?" Then five statements were heard. One was correct. Then two questions about details in the selection followed. Five responses were heard, and the listener marked the appropriate space on the answer sheet. The objective was to determine whether the listener could comprehend the central idea of the selection, and also to comprehend and remember two details. There were twelve questions in Part 5.

The entire test consisted of twenty-seven questions.

Recording. The test was first tape recorded and was then put on both sides of two twelve-inch records.

Trial. The recorded test was tried out in two sections of the listening "laboratory" during the fall quarter of 1950.

Analysis. An item analysis of the answer sheets revealed that the test was far too "easy". The test also failed to discriminate between "good" and "poor" listeners.

Observations. Observations made by the writer while students were taking the test indicated that there were certain weaknesses and strengths in the test.

1. Students could be influenced too easily by other students when the five foils were presented orally. It was amusing to watch two hundred students hear the foils read; and then all bend over and mark answer sheets at the same time.

2. Students can apparently "hold in mind" five to eight numbers, sounds, or words, while they also hold in mind five possible foils.

Interesting. One interesting aspect of this test was the fact that all material was presented orally. The listeners received all instructions, all materials, and all foils for the five-choice multiple-response answers from the recording. The listeners had only a standard IBM answer sheet and a regular scoring pencil. Students apparently found this completely oral method easy to understand and follow.

Discard. In view of the failure of the test to be sufficiently difficult and to discriminate satisfactorily; and in view of the impossibility of removing from the group test situation the influence of one student on another when the foils were presented orally, this approach was discarded.

## B. The Concept of Seven Printed Foils

After the failure of the completely auditory test of listening, a new approach to the problem of measuring listening comprehension in the specific listening "laboratory" situation became necessary. Since one of the major difficulties in the "completely auditory test" had been the opportunity for students to observe the reactions of other students when the one correct answer was heard, some method of preventing such "communication by bodily behavior" had to be evolved. The solution finally chosen was to have a common set of seven printed foils, and present the material and questions orally. Then each student responded to each statement or question by referring to the set of standard printed foils and marked the appropriate place on an answer sheet. All students were then responding to all statements rather than waiting for the correct one of five. The opportunity for one student to observe the behavior of another student was thus reduced to the average situation of group examinations. Such a procedure, furthermore, permitted the increase of the number of possible test questions or items in the same amount of time, since a student was responding to each question rather than waiting to hear five statements follow each question.

This chapter reports the sources examined, and the methods used in developing the seven printed foils used for the tests.



C. Implications from Selected Literature on Speech  
as A Guide to the Development of the Foils

Since there is a considerable amount of material in speech texts on the subject of informative speeches (reports, instruction, lectures, etc.), the speech text<sup>1</sup> used in the course on Communication Skills was first examined for suggestions important to comprehension. The significant factors gleaned from this text suggest the following:

1. The purpose (central idea) should be clearly stated.
2. There should be from two to four divisions of the material.
3. Fasten these divisions or topics in the listeners' minds.
4. Be specific rather than abstract.
5. Transitions between materials should be made clear to the listener.
6. The purpose and main divisions must be elaborated by fact, example, illustrations, etc. (details).

Under a heading, "Ways and Means of Making Ideas Clear" Brigrance,<sup>2</sup> emphasizes the value of specific words, simple words, illustrations, specific instances, figures and statistics, testimony, restatement and repetition. (The writer

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<sup>1</sup> William N. Brigrance, Speech Communication, F. S. Crofts, N. Y., 1947, 220 pp.

<sup>2</sup> Ibid., 104-114.

refers to such material as developmental material, or details.)

Implications for listening comprehension. Restating these factors from the listener's point of view produced the following:

1. The listener should comprehend clearly the central idea of the talk.
2. The listener should clearly identify the main divisions of the talk.
  - a. He should know where he is at all times.
  - b. He should know when he moves from one division to another.
3. The listener should remember the main divisions of the talk.
4. The listener should separate the essential from the non-essential:
  - a. Select and remember the major aspect of the information.
  - b. Distinguish clearly between the various uses of developmental material (details): those for clarity, emphasis, interest.
5. Remember such developmental materials (details) as are significant to the comprehension of the ideas.



#### D. Implications from Selected Literature on Reading as A Guide to the Development of the Foils

Working on the assumption that some parallels might exist between the devices used to test reading comprehension and those which might be used to test listening comprehension, an examination of selected materials on the subject of reading was next made.

Guides from reading manuals. Four different reading manuals are used by the Reading Improvement Service of the Communication Skills Department to help students improve their reading rate and comprehension. Therefore, these four manuals were selected for sources of devices and methods used to measure reading comprehension, with the thought that they might offer some suggestions in the objective measurement of listening comprehension.

The first manual consulted was Improving Reading Ability.<sup>3</sup> An examination of the "General Directions" and the specific sections of the manual reveal that reading comprehension is measured in the following observable ways:

1. Speeded comprehension of word meanings is achieved by first presenting a single word, then following this by five different words. The reader is directed to mark the word closest in meaning to the first word.

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<sup>3</sup> James B. Stroud and Robert B. Ammons, Improving Reading Ability, Appleton-Century-Crofts, N. Y., 1949, 200 pp.

2. Speeded comprehension of phrases is indicated in the same manner as that used for words.

3. Speeded comprehension of sentences consists of:

. . . a general statement followed by ten statements, some of which are similar and some different in meaning. Write the letter S after each of the ten sentences that agrees with - is similar to - the original statement. Write the letter D after each that is different in meaning from the original statement. Sentences should be marked S when they say the same thing in the same or different words or express the same general idea or an idea closely related to the original statement. Sentences should be marked D when they are unrelated in meaning or are contradictory in meaning, although they pertain to the same topic.<sup>4</sup>

4. Speeded comprehension of connected text is measured by a series of questions designed to test the reader's comprehension. These true-false or multiple-choice questions cover facts, explanations, positions, purposes, methods, reasons, and relationships.

5. That part of comprehension called "Discerning General Significance" is objectively indicated by having the reader choose one of four best general statements:

Encircle the number of the statement that contains the most accurate, comprehensive account of the general significance of the paragraph. The correct statement may take the form of the best general statement of the content, the best summary, or the most complete statement of the main idea presented.<sup>5</sup>

6. A section labeled "Supporting and Non-supporting Paragraphs", is similar in form and pattern to speeded com-

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<sup>4</sup> Ibid., 10.

<sup>5</sup> Ibid., 13.

prehension of sentences: A short paragraph is presented, and this is followed by several other paragraphs which are to be marked as supporting or not supporting the initial paragraph. The authors advise the reader to:

Read the stem paragraph thoughtfully, trying to form an idea of its central thought or purpose. It will be good practice to ask yourself what the purpose of the paragraph is.<sup>6</sup>

Implications for listening comprehension.

1. Comprehension includes the understanding of individual words, phrases, and sentences.
2. Comprehension of connected text includes the understanding of such factors as facts, explanations, positions, purposes, methods, reasons, and relationships stated or implied in the text material.
3. The ability to "discern the general significance" of what has been read is a part of comprehension. General significance is represented by such things as the best general statement of content, the best summary, or the best statement of the main idea.
4. The ability to detect relationships (similarities) and lack of relationships is a part of comprehension.
5. Comprehension of connected text may be evaluated by multiple-choice questions involving various factors.

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<sup>6</sup> Ibid., 14.

6. General significance of text material may be evaluated by multiple-choice statements of content, summary, or main idea.

7. The ability to distinguish between supporting and non-supporting ideas or material may be evaluated by indicating whether a statement, or paragraph is related (supports) or is unrelated to (does not support) a given text.

The second manual consulted<sup>7</sup> lists the following reading exercises which appear to be concerned with comprehension:

1. Word Perception.
2. Word Meaning, Simple Contexts.
3. Word Meaning, Complex Contexts.
4. Equivalent Statements.
5. Paragraph Scanning.
6. Full Comprehension.

The new or different ways of measuring comprehension presented in this manual are "Word Meaning, Complex Contexts" and "Paragraph Scanning". The first is a sort of analogy type exercise, and the second raises a question with two possible answers, "a" and "b". The reader is to scan the paragraph until he arrives at the correct answer.

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<sup>7</sup> Christian O. Webber, Reading and Vocabulary Development, Prentice-Hall, Inc., N. Y., 1951, v, vi.

Implications for listening comprehension. As a means of testing listening comprehension the two new types of material referred to above seem to offer the following possibilities:

1. If a question is raised in advance of orally presented material, listeners might listen to a passage until they heard the correct answer and then indicate the answer on some type of answer sheet.

2. Analogies might be used, but the writer sees no way at present of transferring this device in a "simple" way to testing listening comprehension.

The manual by Wilking and Webster<sup>8</sup> includes the following major aspects of reading comprehension<sup>9</sup> all preceded by the statement "Thorough Reading":

1. Summarizing.
2. Main Ideas.
3. Details.

The authors define "Thorough Reading" as follows:

Thorough Reading is so called because the term closely describes the skill which will be developed. Before you can read critically or evaluatively, it is of primary importance that you understand thoroughly the meaning of what the author is attempting to say. You must not only be able to understand his meaning, but you must also be

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<sup>8</sup> S. Vincent Wilking and Robert G. Webster, A College Developmental Reading Manual, Houghton Mifflin Co., Boston, 1943, 336 pp.

<sup>9</sup> Ibid., vii, viii.



able to communicate to others the proof that you understood what you have read. The most convincing proof is a complete, written recall of what you have read.<sup>10</sup>

The exercises and the ways in which the comprehension of the material is measured are stated as follows:<sup>11</sup>

The first exercise you will be required to do demands only that you pick out the correct summary sentence of a paragraph. There will be three summaries given, one of which is just right, and two others which may be too broad or too narrow. Your job will be to discriminate between these choices and, if possible, give your reasons. A few additional words on the concepts of "narrow" and "broad" may be helpful. A summary is considered as being too narrow if it presents only some of the details given in the original paragraph. These details may really occur in the paragraph but the summary presents too few of them to be considered adequate. A summary is too broad if it goes beyond the data which is given in the paragraph. This means that any overstatement or false statement in a summary is a signal that the summary in question is too broad for the paragraph with which it deals.

The second type of exercise is a list of main ideas (central thought) and details (minor ideas) of the paragraphs in a selection. You will be asked to label the main ideas and the details. Once you can discriminate between the two you will be ready for the next step.

You will be introduced to a device called the "Idea line". This is nothing more or less than your old friend (or enemy) the outline. On the first horizontal line you will place the main idea or central thought of the paragraph. Directly below this main idea you will list in numbered order the ideas or details which support the main idea. In the early lessons you will be given the main ideas of the paragraphs and will be asked to fill in the supporting details. The job will then "step up" a little and you will be given the minor ideas or details and be asked to fill in the main idea which covers all the details. The final step will be to fill in the idea line in toto.

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<sup>10</sup> Ibid., ix.

<sup>11</sup> Ibid., x, xi.

Implications for listening comprehension. There appear to be numerous implications applicable to listening comprehension in the foregoing manual. They are:

1. Convincing proof of understanding is obtained by a complete written recall of what has been heard.
2. Identifying a correct summary sentence indicates comprehension.
3. Identification of correct central ideas is necessary for, and is indicative of, comprehension.
4. Identification of correct details is necessary for, and is indicative of, comprehension.
5. Discrimination between central ideas and details is necessary for, and is indicative of, comprehension.
6. The ability to derive a central idea from details is necessary for, and is indicative of, comprehension.
7. The ability to combine details to form a central idea is necessary for, and indicative of, comprehension.

The manual by Strang<sup>12</sup> designed to improve reading speed and comprehension states four important reading skills,<sup>13</sup> three of which apply directly to comprehension:

1. To discover the central thought of what we read.
2. To recognize and remember the important facts.

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<sup>12</sup> Ruth Strang, Study Type of Reading Exercises, Bureau of Publications, Teachers College, Columbia University, N. Y., 1945, 111 pp.

<sup>13</sup> Ibid., 3.

3. To see where the facts lead, or, in other words, to draw conclusions.

In another place<sup>14</sup> Strang says,

One group of skills is used to answer the question: "What is the book or article about?" These skills are:

1. The ability to get facts and details.
2. The ability to get the central idea.
3. The ability to make a summary of the content.

In clarifying these skills she points out that readers must guard against confusing facts with illustrations used for interest and clarification. In other words, they must separate main points from the details which develop them.

She further tells the reader that:

In some cases, we need only to get the central idea of what we read. In order to do this, we must ask ourselves: "What is the main thought?" The answer to this will be the most important idea in a paragraph, a chapter, or a book. If we have selected what is called the central thought, we will find that the other facts in the passage explain or prove it. In this way, we can test whether or not we have selected the central thought in our reading. The central thought is sometimes expressed in the "topic sentence". . . . .

In our school work, we are often required to write a summary of what we have read. A summary is a fuller answer to the question "What is it about?" than either the facts alone or the central thought alone can be. If we have learned to select the central thought and to remember the facts and details which explain and prove it, we shall have no difficulty in writing a summary of what we have read.<sup>15</sup>

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<sup>14</sup> Ibid., 26.

<sup>15</sup> Ibid., 27, 28.

The method of having the reader test himself to see whether he has acquired the skills for comprehending is by the use of objective multiple-choice questions:

One question will ask for the central thought of the exercise; one will ask for facts; one will ask for conclusions which may be drawn from what has been read.<sup>16</sup>

Implications for listening comprehension. The implications for listening comprehension suggested in the Strang manual do not differ greatly from those given by Wilking and Webster. Strang does, however, propose a more objective way of evaluating the specific factors of comprehension. They may be summarized thus:

1. Comprehension includes the ability to grasp the central idea of what is read or heard.
2. Comprehension includes the ability to select important details.
3. Comprehension includes the ability to separate facts (main points?) from developmental material.
4. A summary statement of comprehended material is based on remembering central idea and details.
5. The conclusions from material read are significant to comprehension.
6. Memory (remembering) is important to comprehension.
7. The comprehension of central idea may be tested objectively.

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<sup>16</sup> Ibid., 3.

8. The comprehension of details may be tested objectively.

9. Conclusions from what has been read (or heard) may be tested objectively.

Summary of implications for listening derived from reading manuals used by the Reading Improvement Service.

1. The ability to identify and remember the central idea of material is important to comprehension.
2. The ability to identify and remember the details of material is important to comprehension.
3. The ability to derive a central idea from details, or to combine details to form a central idea is important to comprehension.
4. The ability to distinguish between central idea and details is important to comprehension.
5. The ability to distinguish between important and unimportant material is important to comprehension.
6. The ability to distinguish between related and unrelated material is important to comprehension.
7. The ability to draw conclusions or inferences from material is important to comprehension.
8. The ability to make or evaluate a summary statement of material is important to comprehension.
9. The ability to make or evaluate a summary statement of comprehended material is based on remembering central idea and details.



10. The ability to remember is important to comprehension.
11. The ability to understand individual words, phrases, and sentences is important to comprehension.
12. The ability to discern the general significance of material is based upon either a summary statement or a statement of the central idea.

Summary of implications for measuring listening as derived from reading manuals used by the Reading Improvement Service. The examination of the four reading manuals suggested definite procedures for the construction of multiple-choice questions which might be used for measuring listening comprehension. The following things appeared to be capable of identification or/and evaluation by the use of multiple-choice items:

1. The listener's ability to remember and/or identify a central idea.
2. The listener's ability to remember and/or identify a detail (or details).
3. The listener's ability to differentiate between central idea and detail.
4. The listener's ability to correctly identify a central idea derived from stated details.
5. The listener's ability to determine relationship or lack of relationship.
6. The listener's ability to select the best summary statement.

7. The listener's ability to identify the correctness, and/or relatedness of conclusions of a factual nature derived from total material.

#### E. Influence of Two Articles on the Development of the Foils

Two articles which were influential in developing the seven foils were encountered in the literature surveyed.

The first, by Ewing<sup>17</sup> reported the use of a very simple device used primarily for the purpose of improving speaking.

. . . This study deals with one aspect of the speaking-listening problem: Finding an index of the degree of accuracy with which the theme and main ideas of the speaker are communicated to the listener.

In order to clarify the purpose of the study, it should be explained that the word "theme" here means a sentence summary or gist of the talk. The main ideas mean the main statements or divisions in the body of the talk which support, describe or develop the theme. . . . Since the students were concerned only with speeches to clarify or to inform, the purpose of this study was to find a simple measure of the extent to which the speaker made his theme and main points clear.

The procedure was very simple. Each student gave a five-minute clarifying talk based on a prepared outline which included theme, main ideas, and supporting details. At the end of the talk each listener was asked to write on a prepared form what he considered were the theme and main ideas of the speaker. Thus we obtained a written record of what the speaker intended and what the listener understood to be the theme and main ideas.<sup>18</sup>

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<sup>17</sup> William H. Ewing, "Finding a Speaker-Listening Index", Quarterly Journal of Speech, XXXI (October, 1945), 368-370.

<sup>18</sup> Ibid., 368.



This article emphasized the importance of what the reading manuals called summarizing, and significance; and also suggested the possibility of having listeners give a more objective report by preparing specific statements which represented the "theme" of the talk and which could be reacted to as being "exactly as stated by the speaker"; "saying approximately the same thing, but in different words"; and "not the same idea at all". It suggested furthermore the possibility of using approximately the same approach with supporting details.

The second article which influenced the final specific statement of the foils was Sondel's.<sup>19</sup> Her presentation and clarification of the "controlling idea", and its relationship to the essential and non-essential developmental material (details), was largely responsible for the idea of emphasizing the ability to distinguish between related and unrelated material; and to make the further distinction between a central idea and details.

#### F. The Assumption of Minimum Reading

The assumption that there should be a minimum of reading served as a significant guide in developing the seven foils finally selected for the test. Whereas some earlier

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<sup>19</sup> Bess Sondel, "Everybody's Listening", National Parent Teacher, 46 (January, 1951), 14-16.

tests<sup>20</sup> had included samples of materials to be "looked at", and had then been followed by such oral directions as "There are three different kinds of figures in this problem, what is the number of the figure that precedes a square and follows a triangle?"; and whereas many other tests<sup>21</sup> had used printed or oral questions with many varying printed multiple-choice responses, the present test attempted to reduce the amount of reading and the variation in reading to a minimum in all parts of the test. The printed multiple-choice questions normally used were therefore unsatisfactory for the objectives and assumptions of the present test. A true-false test could have been developed, but in view of some of the criticism involving this type of test<sup>22</sup> and the stated values of multiple-choice items, it was deemed desirable to

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<sup>20</sup> See Arthur W. Heilman, "Measuring and Improving Listening Ability", Speech Monographs, XVIII (No. 4, 1951), 302-308. The sample question is from one part of the test, the "Manual of Test Directions for Directions and Statements", and was given to the writer by Dr. Heilman.

<sup>21</sup> See Appendix A "Description of Tests Used to Measure Listening Comprehension".

<sup>22</sup> James B. Stroud, Psychology in Education, Longmans, Green and Co., N. Y., 1946, 482.

and

Herbert E. Hawkes, E. F. Lindquist, and C. R. Mann (Editors), The Construction and Use of Achievement Examinations, Houghton Mifflin Co., Boston, 1936, 136-147, 152-158.

and

William J. Micheels, and M. Ray Karnes, Measuring Educational Achievement, McGraw-Hill Book Co., N. Y., 1950, Chapters 6 and 7.

attempt the construction of a multiple-choice test. The final form was a multiple-choice-true-false combination.

After numerous exploratory attempts to solve the problem of varying choice response and yet use a minimum amount of reading and variation of reading, a set of eight standard foils was evolved. These eight foils appeared to include the significant aspects of listening comprehension as implied from studies of the speech text used in the course and from the reading manuals used in the Reading Improvement Service. When used in conjunction with orally presented passages and orally presented items (or questions) these eight printed foils offered combinations to test nearly all significant aspects of listening comprehension.

#### G. Presentation to Staff Members

In a preliminary evaluation of Test 1 by four staff members, one member suggested that two foils were in need of modification. If an item was unrelated to the passage heard it was probably impossible to determine whether it was unrelated to the major idea of the passage or to a detail in the passage. Therefore, these two foils were combined, and the other foils re-numbered.

#### H. Presentation to Students

During the fall quarter of 1951, Test 1, with the seven foils, was tried out in three classes of Communication Skills. Students commented on the way in which the foils were worded,

arranged, and the amount and kind of explanations. In some instances students revised and re-worded the foils to convey the ideas more accurately to them; in other cases they gave suggestions to the writer, who revised the written form of the foils.

#### I. The Seven Foils Used in the Test

1. This is a quotation (exact repetition) of the central idea of the passage. It was actually stated in these same words in the passage.
2. This statement implies or suggests the same central idea as the passage. It "truly" represents the central idea of the passage, but it is stated in different words from those used in the passage.
3. This is a mis-statement or mis-representation ("false", twisted, deceiving, partially true, partially false) of the central idea of the passage.
4. This is a quotation (exact repetition) of one of the details in the passage. It was actually stated in these same words in the passage.
5. This statement implies or suggests one of the details, or a similar detail, stated in the passage. It "truly" represents a detail in the passage, or a similar detail, but it is stated in different words from those used in the passage.

6. This is a mis-statement, or mis-representation ("false", twisted, deceiving, partially true, partially false) of a detail in the passage.
7. This statement is unrelated to either the central idea or a detail of the passage. It is neither a "true" nor "false" quotation or implication of the central idea or a detail; but is rather entirely unrelated to either the central idea or a detail of the passage. The information is neither given in nor implied by the passage.

These seven responses may be stated in a shorter form as follows:

(A) Those concerned with the central idea.

1. Quote. Exact repetition of central idea.
2. Same central idea, but in different words.
3. False, twisted, or wrong central idea.

(B) Those concerned with the details.

4. Quote. Exact repetition of a detail.
5. Same, or similar detail, but in different words.
6. False, twisted, or wrong detail.

(C) The one concerned with both central idea and details.

7. Unrelated. Not given or implied.

## J. Summary of Chapter

This chapter has indicated how the seven foils were developed by tracing: (a) the trial and failure of a completely auditory test which lead to (b) the concept of seven printed

foils, (c) implications from selected literature on speech as a guide to developing the foils, (d) implications from selected literature on reading as a guide to developing the foils, (e) the influence of articles by Ewing and Sondel on the development of the foils, (f) influence of the assumption that there should be a minimum of reading, (g) revisions by staff members, (h) revisions by students, and (i) the final statement of the seven printed foils which were used for all three tests.

## CHAPTER IV

## CHAPTER IV

### THE SELECTION OF MATERIALS FOR THE PASSAGES

When connected, meaningful material is presented for a test of comprehension, whether the objective be to measure reading or listening, some care must be exercised to assure, as far as possible, lack of previous acquaintance with the material by the subjects to be tested. If such care is not exercised then some testees may have an undue advantage over other testees simply because they have had an opportunity to become familiar with the material at an earlier time.

#### A. Selection Methods Used by Some Other Studies

Many of the research workers<sup>1</sup> in listening have used adaptations of standardized reading test materials on the assumption that such materials are reasonably secure from examination prior to the test situations.

Some investigators who have selected their own materials have used different ways to reduce the influence of possible knowledge of materials in advance of the testing situation.

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<sup>1</sup> See Appendix A, "Description of Tests Used to Measure Listening Comprehension".



Nichols<sup>2</sup> selected six different subject matter areas "in order to neutralize the advantage which would accrue to listeners who had already had college training in one or two of them".

Blewett<sup>3</sup> chose five informative passages that "were fictitious in content in order that no advantage would accrue to those subjects possessing specialized knowledge".

Kramar and Lewis<sup>4</sup> chose an expository lecture on New Zealand "because it was believed that it would limit the factor of previous knowledge as a variable".

#### B. Selection Method Used in This Study

The passages of meaningful material for the present tests were selected not only with a view of preventing previous knowledge, but also of contributing some significant information and motivation to the students in the listening "laboratory".

Conversations held by the writer with Michigan high school teachers indicated quite clearly that high school teachers were not presenting any information about nor giving any instruction in listening. Reports from students

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<sup>2</sup> Ralph Nichols, "Factors in Listening Comprehension", op. cit., 156.

<sup>3</sup> Thomas Blewett, op. cit., 51.

<sup>4</sup> Edward J. J. Kramar and Thomas R. Lewis, op. cit., 16.

enrolled in the writer's own classes as well as those enrolled in classes of his colleagues, confirmed the judgment that students were relatively unacquainted with information about listening. Therefore, subject matter on listening was chosen for the content of the test passages on the assumption that such material would be reasonably unfamiliar to most students.

Secondly, subject matter on listening was chosen because it offered information of some value to the freshmen students in a Communication Skills program.

### C. The Three Passages

Following are the three test passages of connected, meaningful material. Each passage was revised approximately seven times before reaching the form reported here. The revisions were based on trials with students, and comments by students and colleagues.

It should be noted that the passage for Test 1 consists of the instructions, or directions, for taking the test. This conforms to those life situations in which students must understand and carry out instructions they have received. The passage for Test 2 consists of a definition similar to the kind that might be given in a carefully prepared lecture. The passage for Test 3 consists of reports of two studies similar to those stated in numerous classroom lectures.

## Passage for Test 1

INSTRUCTIONS

This is a test of listening comprehension. Just as you take reading comprehension tests to learn how much you understand when you read, this test is designed to tell you how much you understand when you listen.

This passage tells you how to take the test.

First, do not make any noise or you may prevent yourself and others from hearing the necessary material. Second, do not take any notes; just listen attentively. Third, listen carefully for you will need the information you are now hearing to do this test.

After you hear this passage on instructions you will hear a number of statements. Any statement may or may not be related to these instructions you are now hearing. You are to assign each statement to one of seven possible responses. As soon as you hear a statement you should decide which of the seven possible responses that statement belongs in, and mark the appropriate space on your answer sheet immediately. For example, if you should hear the statement, "How to listen to a classroom lecture", you would mark space 7, for that statement is entirely unrelated to this passage on instructions for taking the test.

Each statement will be given only once; It will not be repeated.

Throughout the test you should mark only one space for each statement. If you don't know, guess. Your score will be computed on the number of correct answers.

This completes the instructions for taking the test. No additional information will be given. Do not ask any questions. See how well you can classify some statements about the instructions you have just heard.

End of Passage for Test 1.

## Passage for Test 2

DEFINITION

As human beings we are constantly bombarded with all kinds of stimuli from the world around us. We see things with our eyes, taste with our tongues, smell with our noses, and feel with our senses of touch.

For the next few minutes we will confine our attention to those stimuli we receive through the ear - those called sound - in an attempt to answer the question, What do we mean by the term listening?

The first important factor in our definition of listening is the reception of sound. When listening to television, sound-movies, or a speaker before us, we receive both auditory and visual impressions. When we listen to the telephone, radio, recordings, or a person talking even though we cannot see him, we depend exclusively on the ear. The visual element may or may not be present. If present it is a further aid to understanding; but visual impressions may be excluded, and we can still listen.

Second, we should note that we receive a great many different kinds of impressions through our ears. A broad classification of sound ranges from noise to music. We shall limit these impressions to word sounds or language symbols. So, in this definition we include only a person talking; and we exclude all other auditory impressions such

as train whistles, instrumental music, telegraphic code, tom-toms, etc.

Third, we must have an attentive receiver. The most significant factor of listening is not that it involves sound, nor language symbols, but that these symbols are interpreted by a receiver to have meaning. If a recording of a speech is playing, but you are not present to hear it, we say you are neither hearing nor listening. If you are present, but looking out the window day-dreaming you may be hearing, but you are not listening.

We can summarize our definition in this way: Listening is the act of an attentive person interpreting word symbols received primarily through the auditory sense.

End of Passage for Test 2.

## Passage for Test 3

LISTENING CAN BE TAUGHT

One of the basic assumptions about the skill of listening is that listening can be taught. Following are brief summaries of two research studies testing that assumption:

In 1949, Professor Arthur Heilman did a study to measure the improvement of listening brought about by direct instruction. Heilman met students in the usual small classroom situation. The students received direct instruction in listening for six separate periods of about ten minutes each. Tests were given these 450 students before and after instruction. Results showed that the listening ability of college freshmen could be significantly improved through a program of training. Such training appeared to be particularly effective with those students whose listening ability was originally lower than average.

In the fall of 1950, Professor Charles Irvin conducted a study involving large groups of students at Michigan State College. Seven ten-minute units of listening instruction were given to about half the freshmen students. The instruction was given in the regular large lecture situation. Students were tested prior to training and immediately afterward. The 1400 students who received listening training did from 9 per cent to 12 per cent better than the 1400 who did not get training. However, the major gains were made by

those students who were classified as "poor" listeners at the beginning of the term. Over 50 per cent of the poor listeners who received training raised themselves from the category of "poor" up to the category of "above average"; while only 11 per cent of the poor listeners who did not receive training raised themselves to "above average".

From these two studies it appears that the assumption "listening can be taught", is a safe assumption to make.

End of Passage for Test 3.



#### D. Summary of Chapter

This chapter has discussed the selection of materials for the passages to be used in the three tests, and has given: (a) a brief summary of some methods used by previous investigators in selecting their material, (b) the method used for this study, and (c) the three passages of connected, meaningful material used in the present tests.

## CHAPTER V

## CHAPTER V

### THE SELECTION OF ITEMS IN THE TESTS

#### A. Method Used to Obtain the Trial Items

After the preliminary foils or responses (Chapter III) and the preliminary passages (Chapter IV) had been developed, it was necessary to obtain items that would be suitable for each passage. The items could have been constructed by the author, but he desired to have them represent the student viewpoint as much as possible. Therefore, the trial items were obtained from first term freshmen students enrolled in the Communication Skills course during the summer of 1951.

Duplicated sheets were prepared giving the following information:

This is an exercise in listening and writing.

A short passage will be read to you, then you will be asked to write eight short statements about the material you have heard.<sup>1</sup>

Read the following eight classifications of possible statements.

After you hear the passage write one short statement for each of the eight classifications that will apply to the passage you have heard.

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<sup>1</sup> In the early development of the foils (responses) eight, rather than seven, foils were used. See Chapter III.

Write each statement on a separate card, and number the cards from 1 to 8.

- - -

1. Write a statement or quotation of the central idea (Other terms for central idea are main idea, main point, controlling idea, thesis sentence, topic sentence, purpose sentence, etc.) that was actually stated in the paragraph you heard.
2. Write a short statement that represents or conveys the central idea that is implied or suggested, rather than actually stated, in the passage you heard.
3. Write a short statement that is a mis-statement or mis-representation (That is, one that is "twisted", or deceiving, or "false") of the central idea of the passage you heard.
4. Write a short statement of the central idea that was not actually made, nor could be derived from the passage heard. That is, write a statement that is neither a true nor false statement or implication of the central idea, but is rather entirely unrelated to the material in the passage.
5. Write a statement or quotation of one of the details (Other terms for detail are: sub-point, sub-idea, supporting material, developmental material, etc.) that was actually stated in the passage you heard.
6. Write a short statement of a detail similar to one given in the material. Although this detail would be "true" according to the material, it would be implied or suggested rather than actually stated in the same words in the passage you heard.
7. Write a short mis-statement or mis-representation ("false") statement of a detail in the passage you heard.
8. Write a statement of a detail that was neither actually made, nor could be derived from the material heard. That is, write a statement of a detail that is neither a true nor false statement or implication, but is rather entirely unrelated to the material in the passage you heard.

Small cards, about three by four inches in size, were prepared. Each card was lettered in the upper left corner: A for Test 1, B for Test 2, C for Test 3, etc. Each student received eight cards for each test passage.

The writer met with three separate sections for a regular two hour class period of the summer program. The students were told that a test to measure listening comprehension was being constructed, and that they were asked to help prepare the specific questions. The duplicated sheets (listening-writing exercise) were passed out and explained. Questions asked by students concerning the nature of their responsibility were answered. Students were told that a passage would be read twice at the beginning, and again half way through the first hour, so that they could correct the quotations they were asked to write.

After the passage was read once students were permitted to raise further questions. Then the passage was read a second time, and students began writing the items. About half way through the hour, the passage was repeated.

Two passages were used with each class. Five different passages were used, but only three were selected for the final tests.

From this listening-writing exercise, approximately 400 item cards were obtained for each passage, or a total of 1,200 item cards for the three passages. These 400 item

cards gave the kinds of responses for a passage that freshmen devised of their own choice when writing under the guidance of the foils. They represented student-constructed, rather than teacher-constructed items.

The item cards were sorted, and all duplicate statements were removed. Then those which appeared to be very similar in meaning but not identical in wording were removed. Those which remained were examined in the light of the opinion of some test experts.<sup>2</sup> About 100 item cards for each test were selected for further consideration. These 100 item cards represented approximately twelve items for each of the eight foils with the exception of Foil No. 1 (exact quotation of the central idea): There were only two of these for each passage.

The item cards for each passage (test) were shuffled several times and the items were numbered and recorded in that order for the first trial use.

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<sup>2</sup> Dorothy C. Adkins, and others, Construction and Analysis of Achievement Tests, U. S. Government Printing Office, Washington, D. C., 1947, 291 pp.

and

Herbert E. Hawkes, E. F. Lindquist, C. R. Mann, The Construction and Use of Achievement Examinations, Houghton, Mifflin Co., Boston, 1936, 497 pp.

and

William J. Micheels and M. Ray Karnes, Measuring Educational Achievement, McGraw-Hill Book Co., N. Y., 1950, 496 pp.

## B. The Development and Refinement of Items for Test 1

Criticism by colleagues. Four complete sets of all materials for Test 1 were prepared. Each set consisted of: (1) An instruction sheet which asked the reader to read the entire material carefully, to mark the items as he would key them, and to write comments and criticism of any part of the test; (2) The passage; (3) The foils; (4) The items, with a space before each for recording the reader's response; and (5) Blank pages for comments and criticisms.

Four members of the department read the materials, marked the items, wrote comments, and discussed the test with the writer.

The keying of the items was examined, and all items that had not been keyed the same by at least three of the four readers were discarded or revised. Also, in those few cases in which the keying of the three teachers differed from that of the writer, the items were either discarded or revised.

The number of items was reduced to seventy-five, and the number of foils was reduced to seven, through the evaluations made by the four teachers.

These seventy-five items were regrouped according to the foil which was now considered their correct response. A die was cast, and each time a number was read, an item was selected from that group of foils. The newly arranged order of items was then ready for the classroom trial.

Classroom trial. Duplicated sheets of the "Responses"<sup>3</sup> were prepared for student use. A complete script for Test 1 was prepared. This included the passage and the seventy-five items.

During the fall quarter of 1951 Test 1 was tried out with three regular first-term class sections of the course. Students were told the main aspects in the development of the test up to that time. They were requested to take the test and comment on it so that it might be improved. They were told that their test scores and comments would not influence their grades.

Determining the time needed for students to respond to the orally presented items. A set of numbered forms was made out prior to the classroom trial. These were very simple forms consisting of a number, followed by a space for the time-keeper to record the elapsed time:

Time Sheet (Section\_\_\_\_)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

. . . etc. . . . to 75.

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<sup>3</sup> The writer has used the term "foils" in talking about the test in this study, but has used the term "responses" in materials for student use. This choice was made because students indicated that the term "responses" was more meaningful to them than was the test experts' term "foils".



One student was selected to act as time-keeper, and he was given the Time Sheet and a stop-watch. He was instructed to begin keeping time as soon as the instructor finished reading, and to stop time upon signal from the instructor.

In the first classroom trial, after the project had been explained, students were given IBM answer sheets, and the "Responses Sheet". The passage was read by the instructor. Then the first item was read. Each student was instructed to mark his answer sheet and then raise his hand as soon as he had finished, and to keep it up until the instructor indicated that all twenty-six students in the class had marked their answer sheets. The instructor signaled the time-keeper, who wrote down the elapsed time.

This procedure was followed for the first twelve items. Then a 10 second interval was used between items until approximately half the items had been read. The instructor again read the passage, and time was kept for the next twelve items. The range of time for the first twelve items was from 15 seconds to 30 seconds, with an average of 20 seconds. The second twelve items ranged from 8 to 16 seconds, with an average of 12 seconds.

In the second classroom trial the timing was conducted in a manner similar to the procedure just mentioned, but this time the passage and items had been recorded on tape. The recorder used has a lever that permits the machine to be stopped at any time. Immediately after an item had been

played, the machine was stopped until all students indicated they had marked their answer sheets. The range of time again was from 15 to 30 seconds, with an average of 19 seconds. The second group of twelve items ranged from 10 to 15 seconds with an average of 14 seconds.

In the third classroom trial the tape recorded test was presented in the following manner: A 20 second pause was made after the first twelve items, then a 10 second pause after the next twenty-six items. The passage was then played again, and a 5 second pause was made between each of the remaining items. Students expressed the opinion that they could respond to the orally presented items and mark the answer sheets within the 5 second period, but that they felt "rushed". Most students expressed the opinion that after they had become familiar with the procedure, 10 seconds was ample time. A few thought 10 seconds was too long.

Time intervals chosen. The results of these timed trials and student comments were incorporated into the final test by allowing 20 seconds after the first item, 19 seconds after the second item, and decreasing each pause by 1 second until a 10 second period was reached. Thereafter each of the remaining items was followed by a 10 second pause to permit students to choose the response and mark their answer sheet. This time schedule gave students an opportunity to have more time at the beginning of the test when the proce-

dure was new to them, and to have ample time for checking their answer sheets for the remainder of the items.

Recommendations by students. In all three classes used for the classroom trial, the students gave criticism and recommendations for revision of all parts of the test. These recommendations were arrived at by the following classroom procedure: After the test had been taken the correct answers were read, and students scored and totaled their own answer sheets. The instructor put the distribution of scores for each class on the blackboard. Informal discussion among the students themselves and between students and instructor resulted in refinement of the foils, revisions of the passage, and changes in the items. Some items were discarded as a result of student interpretation of them. The chief difficulty in all the classroom trials was expressed by students as one of grasping the idea that the instructions on taking the test constituted the passage on which they were to be tested. Although numerous revisions were made in the passage by students and by the writer in light of student and staff comment, this factor was not completely clarified even for the final presentation of Test 1.

Key analysis of test items. Answer sheets for Test 1 were collected from students who had participated in the classroom trials, and these answer sheets were machine

scored. Twenty-seven per cent of the answer sheets having the highest scores and twenty-seven per cent having the lowest scores were selected from the total and a key analysis compiled.<sup>4</sup> From these tabulations a very rough item analysis was made. Items which showed poor or little discrimination were eliminated or revised. Items that had been answered correctly by more than two-thirds of the high group were considered "too easy", and were revised or eliminated. Difficult items were retained.

Selection of items for the final trial test. On the basis of the classroom trials and the key analysis, sixty items were chosen for test form to be used in the listening "laboratory". Those retained items that had been marked correctly by the largest number of students and were considered "easy" were put at the beginning of the test.

Recording. A complete script, involving all the suggestions and implications of the previously reported procedures, was prepared and recorded on tape. One voice was used for all materials recorded.

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<sup>4</sup> The term "key analysis" as used by the Scoring Office at Michigan State College is explained as: A tabulation of the number of times an item is answered correctly on the highest twenty-seven per cent of answer sheets; and the number of times an item is answered correctly on the lowest twenty-seven per cent of answer sheets.

The script was read aloud and rehearsed until a rate of approximately 100 words per minute was attained for the passage and the items. When rate had been adequately controlled, the material was recorded on a tape recorder. Time was kept on each part of the test, the reading of the items, the pauses between the items, the pauses between parts of the test, and total time for the complete test. Then the tape was played back and re-timed to check on the pauses between items and the total time of the test.

Rate of speaking. Simple observation confirms the inference that college lecturers differ in their base rate of speaking. In a test to measure listening comprehension for the college lecture-listening situation, what may be considered a "normal" or base rate around which other rates will vary? An investigation of some of the studies using a "natural" and "created" lecture situation revealed the following:

Among the apparently "natural" lecture-listening situations Corey<sup>5</sup> indicated that after familiarizing himself with his materials he found that his delivery averaged very close to 100 words per minute. Greene<sup>6</sup> found that his rate of speaking varied considerably when lecturing to two different

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<sup>5</sup> Stephen M. Corey, op. cit., 466.

<sup>6</sup> Edward B. Greene, op. cit., 457-463.

college classes: In one he averaged seventy-two words per minute, and in the other he lectured at the rate of ninety-two words per minute.

Among the "created" lecture-listening situations, Kreuger<sup>7</sup> "kept" the rate of presentation as close as possible to 100 words per minute. Blewett,<sup>8</sup> and Heilman<sup>9</sup> had the rate of material controlled at 120 to 140 words per minute.

Nichols<sup>10</sup> who had his speakers present material in a nearly normal situation (The speakers familiarized themselves with the material and spoke extemporaneously.) determined the speaking rates used for each of the six lecture excerpts as:

Literature - 138  
Economics - 100  
Biology - 101  
Sociology - 102  
Psychology - 109  
Chemistry - 85

Average - 105 words per minute

There are, as was noted at the beginning of this section, variations in rates of speaking among college lecturers,

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<sup>7</sup> David H. Kreuger, op. cit., 35.

<sup>8</sup> Thomas T. Blewett, op. cit., 51.

<sup>9</sup> Arthur W. Heilman, op. cit., 304.

<sup>10</sup> Ralph G. Nichols, "Factors Accounting for Differences in Comprehension of Materials Presented Orally in the Classroom", Unpublished Ph.D. thesis, Iowa State University, 1948, 31.

but there seems to be reasonable evidence for assuming that a rate of approximately 100 words per minute is near the rate that students will encounter in the various lectures that they will hear. Therefore, a rate of approximately 100 words per minute was used in the recorded passages, and practice passages of the present tests. The rate of speaking for the items was also done at approximately this same rate, but the timed pauses were excluded in determining the over-all rate for speaking the items.

### C. The Listening Laboratory Trial for Test 1

Factors influencing the administration. Prior to the administration of the test materials in the listening "laboratory", three decisions had been reached that involved the administration of the test: (1) The tests were to be administered to first term freshmen in the "off-quarters", namely winter and spring. The largest number of freshmen enroll in fall quarter, but students are admitted during the other three quarters of the year in much smaller numbers. Since it was considered more desirable to give all students the same instruction, and to avoid interrupting the program of the ten listening laboratories of the fall quarter students, the students entering in winter and spring were chosen for the trial group. These "off-quarter" groups usually consist of about four "laboratory" sections with not more than 100 students to a section. (2) To check the reli-

ability of the test it was decided to use a retest one week after the original administration. In view of the numerous aspects of comprehension being measured,<sup>11</sup> the Pearson-Brown, split-half and Kuder-Richardson formulas seemed less appropriate than the test-retest procedure.<sup>12</sup> (3) One check on validity was to be made by correlating scores on the test being developed with scores by the same students on the Biology and Economics parts of the Nichols test.<sup>13</sup> To accommodate these last two aspects of the study the following program of administration was followed: During the first week, students in Listening Laboratories A, B, C, and D, all took the trial test. During the following week groups A and C were retested, and groups B and D took the Nichols test.

Administration. Test 1 was administered during the third and fourth weeks of the winter quarter 1952. Each student picked up a standard IBM answer sheet, special pencil, and duplicated "Responses Sheet" on entering the room. The blackboard at the front of the room indicated that a listening test-exercise was scheduled for the hour, and gave the directions for filling out the top of the answer sheet, and

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<sup>11</sup> See Chapter III.

<sup>12</sup> Dorothy C. Adkins, and others, op. cit., 148-160.

<sup>13</sup> These two parts were chosen because they have two of the highest reliability coefficients of any part of the test: .48 and .66 respectively.



told students that the results of the exercise would be posted on the room bulletin board at the next meeting. The instructor went over the directions for filling in the top of the answer sheet; announced that the test-exercise was to measure listening skill, and that the scores on the exercise would not influence the student's grade. Students were told to read the "Responses Page" carefully. Students with a hearing loss, and students who were from foreign countries were asked to indicate such on their answer sheets. (These answer sheets were not considered in any further analysis of the test items, although the scores were reported back to these students.)

The recorder, which had been tried out and adjusted prior to the time the students assembled, was started, then stopped, and students were asked if the volume was satisfactory for hearing. The estimates of needed volume were apparently adequate for no additional volume was needed at the beginning of any of the four periods. The conditions for administering this test were best labeled "typical" rather than "ideal" since at several times during each period the "banging" of steam pipes in the room tended to interfere with listening. At such times the volume of the machine was raised to compensate for the interference.

After the students had completed the test they were asked to write two comments about the "listening exercise"; (1) Did you consider this test "easy" or "hard"? (2) If

you considered it "easy", what would you recommend to make it "harder"; if you considered it "hard", what would you recommend to make it "easier"? An examination of these written replies indicated that those students who considered the test "hard" wanted two additional aids: (1) Further clarification that the instructions for the test constituted the passage on which they were to be tested, and (2) additional clarification of the seven foils on the "Responses Sheet".

Administering retest. Prior to the retest a short passage, again emphasizing the fact that the instructions were to be the test material, was written and recorded on the first part of the tape. All other factors were the same as in the preceding test situation.

Administering Nichols test. Information written on the blackboard stated, "This is a test of listening comprehension. You will hear parts of two recorded lectures. After you hear each lecture you will be asked to answer twelve questions. Do not take notes." Students were told that this test would not influence their grades, and that the results would be posted for the next week.

Each student picked up an answer sheet and a pencil on entering the room. The volume level of the record player had been adjusted before students arrived. The record was

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begun, and stopped, while students were asked if the volume was satisfactory. Then the record was played. At the end of the first record (Biology), the printed questions were distributed. Students were given as much time as they needed to mark their answer sheets. Then the second record (Economics) was played, and after it, the printed questions were distributed.

#### D. Selection of the Items to be Included in Test 1

The answer sheets for the first administration to the four sections of the listening laboratory were machine scored, and then an item analysis was made using the Flanagan<sup>14</sup> method, of all items from the highest and lowest twenty-seven per cent of all answer sheets. From this analysis thirty-two questions were selected to be included in the actual test. The answer sheets were re-scored on the basis of these thirty-two questions, and those scores were used for all further statistical analyses.

The level of difficulty of each item retained, and the discrimination index of each item retained is given in Table I.

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<sup>14</sup> J. C. Flanagan, "General Considerations in the Selection of Test Items and A Short Method of Estimating the Product-Moment Coefficient from the Tails of the Distribution", Journal of Educational Psychology, 30 (1939), 674-680.

TABLE I  
ITEM ANALYSIS OF TEST 1

| Item<br>Number | Number of<br>Correct<br>Answers in<br>Highest 27% <sup>a</sup> | Number of<br>Correct<br>Answers in<br>Lowest 27% | Diffi-<br>culty <sup>b</sup> | Discrim-<br>ination <sup>c</sup> |
|----------------|--|--|------------------------------|----------------------------------|
| 1              | 35   | 15   | .63                          | .54                              |
| 2              | 29   | 15   | .55                          | .35                              |
| 3              | 24   | 10   | .43                          | .36                              |
| 4              | 25   | 8  | .41                          | .45                              |
| 5              | 32   | 14   | .58                          | .47                              |
| 6              | 28   | 12   | .50                          | .40                              |
| 7              | 24   | 9  | .41                          | .40                              |
| 8              | 33   | 12   | .56                          | .53                              |
| 9              | 30   | 12   | .50                          | .45                              |
| 10             | 24   | 4  | .35                          | .56                              |
| 11             | 30   | 11   | .51                          | .47                              |
| 12             | 22   | 14   | .45                          | .21                              |
| 13             | 24   | 8  | .40                          | .42                              |

<sup>a</sup> There were 40 answer sheets in the highest 27%, and 40 answer sheets in the lowest 27%; a total of 80.

<sup>b</sup> The lower the number the more difficult the item.

<sup>c</sup> A discrimination index of .22 is significant at the 5% level, and a discrimination index of .29 is significant at the 1% level of confidence. George W. Snedecor, Statistical Methods, Iowa State College Press, Ames, Iowa, 1946, 351.



TABLE I (Continued)  
ITEM ANALYSIS OF TEST 1

| Item<br>Number | Number of<br>Correct<br>Answers in<br>Highest 27% | Number of<br>Correct<br>Answers in<br>Lowest 27% | Diffi-<br>culty | Discrim-<br>ination |
|----------------|---|--|-----------------|---------------------|
| 14             | 17  | 3  | .25             | .45                 |
| 15             | 17  | 7  | .30             | .28                 |
| 16             | 24  | 5  | .36             | .51                 |
| 17             | 28  | 0  | .35             | .81                 |
| 18             | 14  | 4  | .23             | .35                 |
| 19             | 5   | 1  | .07             | .34                 |
| 20             | 13  | 1  | .18             | .56                 |
| 21             | 16  | 6  | .28             | .32                 |
| 22             | 13  | 9  | .28             | .12                 |
| 23             | 26  | 6  | .40             | .53                 |
| 24             | 26  | 7  | .41             | .49                 |
| 25             | 17  | 5  | .28             | .38                 |
| 26             | 22  | 8  | .38             | .38                 |
| 27             | 25  | 8  | .41             | .44                 |
| 28             | 25  | 6  | .39             | .50                 |
| 29             | 22  | 11   | .41             | .28                 |
| 30             | 20  | 7  | .34             | .36                 |
| 31             | 25  | 7  | .40             | .47                 |
| 32             | 31  | 5  | .45             | .66                 |

E. Procedures Used in Selecting the Items for Test 2 and  
Test 3 Which Vary From Those Used for Test 1

Similarity of procedure. The major pattern used for obtaining and refining the test items for Test 2 and Test 3 was similar to Test 1, but certain variations should be noted. This section of the study mentions only the differences; where differences are not mentioned, the same procedure as used for Test 1 is to be understood.

Printed directions. Since the passage for Test 1 consisted of the directions for taking the test, this passage was revised and written for students to use in taking any following tests. This was duplicated and labeled "Instructions".

Practice passage. In view of the comments written by students after the laboratory trial of Test 1, asking for further explanation of the "Responses", a section of three practice items was written and recorded as the first part of the test.

Number of items. Sixty items were used for the classroom trial, and fifty questions for the laboratory trial.

Time between items. Since the time needed for students to respond to the orally presented items had been established during the trial periods of Test 1, the time studies were not



carried out with these two tests. The time pauses arrived at for Test 1 were used throughout the classroom trials and the laboratory administration of Test 2 and Test 3.

Analysis of incorrect responses. A hand tabulation was made of thirty high and low answer sheets for both tests. In addition to considering discrimination and difficulty, an attempt was also made to select those items whose "incorrect" responses were distributed rather evenly among the six remaining foils. If an item had been marked incorrectly, but the incorrect responses tended to cluster in one or two of the foils, that item was discarded in favor of an item which tended to have the incorrect responses distributed among the various foils.

Sampling the position of items. The possibility that the position of an item in relation to its distance in time from the hearing of the passage might influence its discrimination and difficulty was sampled in four instances: Two from each test. Two items placed near the beginning of the test were repeated near the end of the test. The hand tabulation, mentioned in the preceding paragraph, revealed that for three of the four items sampled the difficulty of the item was very slightly increased by placing it nearer the end of the test. The discrimination, and the distribution of the incorrect responses was remarkably similar whether it came near the beginning or near the end of the test. One

item revealed a considerable increase in difficulty in its late position when compared with its early presentation.

This tendency for some sampled items to become slightly more difficult, but to retain approximately the same discrimination when presented further in time from the passage emphasized the need for a constancy obtained by recording the material and presenting it in the same manner and same order to each group of students.

Time of administration. Whereas Test 1 had been given classroom trials in the fall quarter and the laboratory trial during the winter quarter, Tests 2 and 3 were given classroom trials during the winter quarter and laboratory trials during the spring quarter of 1952.

Administration. Conditions for administering the last two tests were free from the interference of "banging" steam pipes. The length of time required for each test was written on the blackboard: 27 minutes and 25 seconds for Test 2, and 26 minutes and 50 seconds for Test 3. Some attempt was made to motivate students by telling them that although the listening test-exercise would not influence their present grades, they would have some type of listening test on the final comprehensive examination; and that the present practice would be valuable. Also, scores students received on the

first test were not given to them until they had completed the retest.

After students had taken the retest, the instructor read the correct response for each item, and each student totaled his own score. It was found that there was sufficient time to have students take the test, and also score it within one regular fifty minute period.

Table II gives the difficulty and discrimination indices for Test 2, and Table III does the same for Test 3.

TABLE II  
ITEM ANALYSIS OF TEST 2

| Item<br>Number | Number of<br>Correct<br>Answers in<br>Highest 27% <sup>a</sup> | Number of<br>Correct<br>Answers in<br>Lowest 27% | Diffi-<br>culty <sup>b</sup> | Discrim-<br>ination <sup>c</sup> |
|----------------|--|--|------------------------------|----------------------------------|
| 1              | 18   | 6  | .60                          | .63                              |
| 2              | 17   | 9  | .65                          | .45                              |
| 3              | 17   | 5  | .55                          | .60                              |
| 4              | 17   | 9  | .65                          | .45                              |
| 5              | 16   | 4  | .50                          | .60                              |
| 6              | 16   | 11   | .68                          | .28                              |
| 7              | 14   | 4  | .45                          | .51                              |
| 8              | 20   | 13   | .83                          | .66                              |
| 9              | 11   | 6  | .43                          | .26                              |
| 10             | 12   | 7  | .48                          | .26                              |
| 11             | 19   | 12   | .78                          | .50                              |
| 12             | 11   | 5  | .40                          | .32                              |
| 13             | 11   | 1  | .30                          | .61                              |

<sup>a</sup> There were 20 answer sheets in the highest 27%, and 20 answer sheets in the lowest 27%; a total of 40.

<sup>b</sup> The lower the number the more difficult the item.

<sup>c</sup> A discrimination index of .31 is significant at the 5% level, and a discrimination index of .40 is significant at the 1% level.

TABLE II (Continued)  
ITEM ANALYSIS OF TEST 2

| Item<br>Number | Number of<br>Correct<br>Answers in<br>Highest 27% | Number of<br>Correct<br>Answers in<br>Lowest 27% | Diffi-<br>culty | Discrim-<br>ination |
|----------------|---|--|-----------------|---------------------|
| 14             | 7   | 2  | .23             | .35                 |
| 15             | 9   | 2  | .28             | .44                 |
| 16             | 12  | 3  | .38             | .48                 |
| 17             | 12  | 3  | .38             | .43                 |
| 18             | 4   | 1  | .13             | .32                 |
| 19             | 13  | 3  | .40             | .52                 |
| 20             | 10  | 5  | .38             | .27                 |
| 21             | 16  | 6  | .55             | .51                 |
| 22             | 13  | 9  | .55             | .21                 |
| 23             | 10  | 2  | .30             | .48                 |
| 24             | 16  | 7  | .58             | .46                 |
| 25             | 11  | 3  | .35             | .44                 |
| 26             | 7   | 3  | .25             | .26                 |
| 27             | 19  | 9  | .70             | .61                 |
| 28             | 19  | 6  | .63             | .70                 |
| 29             | 14  | 5  | .48             | .45                 |
| 30             | 12  | 4  | .40             | .42                 |
| 31             | 12  | 3  | .38             | .48                 |
| 32             | 12  | 3  | .38             | .48                 |

TABLE III  
ITEM ANALYSIS OF TEST 3

| Item<br>Number | Number of<br>Correct<br>Answers in<br>Highest 27% <sup>a</sup> | Number of<br>Correct<br>Answers in<br>Lowest 27% | Diffi-<br>culty <sup>b</sup> | Discrim-<br>ination <sup>c</sup> |
|----------------|--|--|------------------------------|----------------------------------|
| 1              | 19   | 10   | .73                          | .59                              |
| 2              | 16   | 8  | .60                          | .42                              |
| 3              | 18   | 13   | .78                          | .35                              |
| 4              | 16   | 3  | .48                          | .64                              |
| 5              | 17   | 5  | .55                          | .60                              |
| 6              | 19   | 11   | .75                          | .55                              |
| 7              | 19   | 10   | .73                          | .59                              |
| 8              | 18   | 8  | .65                          | .56                              |
| 9              | 14   | 7  | .53                          | .36                              |
| 10             | 19   | 8  | .68                          | .64                              |
| 11             | 17   | 6  | .58                          | .56                              |
| 12             | 14   | 9  | .58                          | .26                              |
| 13             | 8  | 0  | .20                          | .68                              |

<sup>a</sup> There were 20 answer sheets in the highest 27%, and 20 answer sheets in the lowest 27%; a total of 40.

<sup>b</sup> The lower the number, the more difficult the item.

<sup>c</sup> A discrimination of .31 is significant at the 5% level; and a discrimination of .40 is significant at the 1% level.

TABLE III (Continued)  
ITEM ANALYSIS OF TEST 3

| Item Number | Number of Correct Answers in Highest 27% | Number of Correct Answers in Lowest 27% | Difficulty | Discrimination |
|-------------|--|---|------------|----------------|
| 14          | 17                                       | 8                                       | .63        | .48            |
| 15          | 8  | 4                                       | .30        | .24            |
| 16          | 14                                       | 4                                       | .45        | .51            |
| 17          | 9  | 3                                       | .30        | .35            |
| 18          | 8  | 2                                       | .25        | .40            |
| 19          | 13                                       | 4                                       | .43        | .46            |
| 20          | 11                                       | 4                                       | .38        | .38            |
| 21          | 16                                       | 2                                       | .45        | .70            |
| 22          | 8  | 10                                      | .45        | -.10*          |
| 23          | 15                                       | 4                                       | .48        | .55            |
| 24          | 15                                       | 5                                       | .50        | .50            |
| 25          | 18                                       | 9                                       | .68        | .52            |
| 26          | 13                                       | 2                                       | .38        | .59            |
| 27          | 19                                       | 3                                       | .55        | .79            |
| 28          | 15                                       | 3                                       | .45        | .60            |
| 29          | 11                                       | 9                                       | .50        | .10            |
| 30          | 17                                       | 10                                      | .68        | .41            |
| 31          | 17                                       | 6                                       | .58        | .56            |
| 32          | 14                                       | 6                                       | .50        | .40            |

\* This item gave a positive discrimination in classroom trials, and a negative discrimination in the laboratory trials.





Table IV shows the degree of difficulty obtained by averaging all items in each of the three tests. An observation of the data reported in this table reveals that Test 1 is much more difficult than the "ideal" of fifty per cent. Tests 2 and 3 are sufficiently close to the "ideal" to be used.

TABLE IV  
AVERAGE DIFFICULTY OF THE THREE TESTS

| Test 1 | Test 2 | Test 3 |
|--------|--------|--------|
| 38.90  | 46.87  | 52.43  |

#### F. Summary of Chapter

This chapter has discussed the selection of items included in the three tests: (a) the method used to obtain the trial items, (b) the development and refinement of the items in Test 1, (c) the listening laboratory trial of Test 1, (d) the final selection of items for Test 1, and (e) the procedures used in selecting the items for Test 2 and Test 3. Item analyses of difficulty and discrimination were presented for each of the items included in the final test forms. The individual items for each test are found in Chapter VIII.

## CHAPTER VI

## CHAPTER VI

### THE RELIABILITY OF THE TESTS

#### A. Method Used

Although it requires additional time for the administration of the same test to the same students at a later date, the method used to check the reliability of the three tests was the test-retest type.

As reported in Chapter V, approximately one-half of each group of students in the listening laboratories took the same test a second time one week after the first administration.

The chief criticisms directed at the test-retest method for determining reliability are stated by Adkins<sup>1</sup> to be the possibilities of memory if the test is administered too soon, the possibility of learning new materials that would influence the score on the second taking of the test, and the difficulty of maintaining comparable testing situations.

Although these criticisms seem significant, the possibilities of using the Spearman-Brown split-half method, or the Kuder-Richardson formula, were equally unsuited to the particular tests. The split-half Spearman-Brown method was

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<sup>1</sup> Dorothy C. Adkins, and others, op. cit., 149-150.

discarded because of the seven-fold nature of the "standardized" foils. In thirty-two questions, or items, there are only two No. 1 foils, and five each of the foils numbered 2 through 7. The Kuder-Richardson formula, according to Adkins,<sup>2</sup> assumes that the test measures only one factor, that all inter-correlations among the items are equal, and that all the items have the same difficulty. The present tests were assumed to measure not one but several factors, and the items were known to have varying degrees of difficulty.

#### B. Test-Retest Correlation

The test-retest correlations for the three tests have been given in Table V:<sup>3</sup>

TABLE V  
TEST-RETEST CORRELATIONS

|                          | Test 1 | Test 2 | Test 3 |
|--------------------------|--------|--------|--------|
| Correlation <sup>a</sup> | .70    | .77    | .71    |
| Number                   | 69     | 35     | 39     |

<sup>a</sup> All correlations are significant at the 1% level.

<sup>2</sup> Ibid., 153-154.

<sup>3</sup> Individual test scores for all students used in the laboratory trial of the three tests are given in Appendix B.



Since two of the major criticisms of the test-retest method were considered the possibility of memory and the possibility of learning, the mean and standard deviation for test and retest groups were computed. These data are reported in Table VI:

TABLE VI  
MEAN AND STANDARD DEVIATION FOR TEST AND RETEST

|               | Test 1            |      | Test 2            |      | Test 3            |      |
|---------------|-------------------|------|-------------------|------|-------------------|------|
|               | Mean              | S.D. | Mean              | S.D. | Mean              | S.D. |
| Number        | 69                |      | 35                |      | 39                |      |
| Original Test | 11.97             | 5.67 | 14.49             | 5.12 | 17.05             | 5.62 |
| Retest        | 14.62             | 5.95 | 15.60             | 4.54 | 19.95             | 5.20 |
| Difference    | 2.65              |      | 1.11              |      | 2.90              |      |
| t             | 4.91 <sup>a</sup> |      | 1.99 <sup>b</sup> |      | 4.38 <sup>a</sup> |      |

<sup>a</sup> Significant at the 1% level.

<sup>b</sup> Not significant at the 5% level.

There appears to have been some memory, or learning from taking the test or from outside sources, operating in Test 1 since the difference between the mean of the test situation and the retest situation is significant at the one per cent level. The most probable explanation is that of learning from taking the test itself. In both the classroom trials

and the laboratory trial, students reported that they had difficulty understanding that the instructions for taking the test constituted the material over which they were to be tested. Once students had heard the complete test, they understood much more clearly what they were to do, and they were able to obtain a higher score the second time they took the test.

There is no significant difference between the means of the test and retest for Test 2. Apparently little learning took place either from taking the test or from outside sources. The test material, a definition, was probably not easily remembered. The classroom trials of both Test 2 and Test 3, tend to confirm the opinion that students understood these tests from the beginning. No objections, similar to those raised about understanding the passage of Test 1, were raised for either Test 2 or Test 3.

The difference between the test and retest mean for Test 3 is also significant at the one per cent level. Some of this learning is to be explained from memory. At the close of the laboratory retest period, some of the students mentioned that they "got" some of the questions this time that they didn't "get" the first time, and that they "remembered" after the test that they had answered some items incorrectly. The passage in Test 3 is also composed of meaningful material probably more easily remembered than the definition of Test 2.

The writer questions whether, in the present instance, a difference between the means of test and retest is important. The mean scores, as a whole, tended to increase, but the standard deviations remained very similar. If there tends to be a slight but positive increase in the test scores, then a common "practice" effect appears to be operating. An examination of the shifts in scores between test and retest shows the general tendency for some increase in scores. In Test 1, five students received exactly the same score on the test and the retest, forty-four received higher scores, and twenty received lower scores. In Test 2, five students received the same score on the test and retest, twenty received higher scores, and ten received lower scores. In Test 3, one student received the same score on the test and retest, twenty-six received higher scores, and twelve received lower scores. Thus, on the average twice as many students received higher scores as those who received lower scores: An indication that something other than chance is operating to increase the scores. This influence is probably practice.

#### C. The Reliability of the Test in Relation to the Reliability of Other Listening Tests

Five recent studies, involving the construction of a test of listening comprehension as a major part, have reported the following test reliabilities:



Nichols<sup>4</sup> reported the reliability for the combined six parts of his test as .802 by use of the Kuder-Richardson formula. The reliabilities of three of the most reliable parts of this test are .48 for Biology, .49 for Chemistry, and .66 for Economics.

Brown<sup>5</sup> used the Spearman-Brown formula and reported the reliability of the two parts of his test as: Part I, .810; Part II, .647. It should be pointed out that Part II of the Brown test is similar to the present test, whereas Part I is not. And it should be observed that Brown obtained a higher reliability for Part II of this test (.874) when it was presented to high school students. The .647 reliability was obtained from college students.

Blewett<sup>6</sup> reported reliabilities of .76 for Part I of his test, and .75 for Part II, and .81 for the combined test by use of the Kuder-Richardson formula.

Kramar and Lewis<sup>7</sup> do not report the formula used, but indicate a reliability of .71.

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<sup>4</sup> The reliabilities on the separate tests were sent to the present writer by Professor Ralph Nichols.

<sup>5</sup> James I. Brown, op. cit., 99-100.

<sup>6</sup> Thomas T. Blewett, op. cit., 52.

<sup>7</sup> Edward J. J. Kramar and Thomas R. Lewis, op. cit., 17.

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Heilman<sup>8</sup> correlated two forms of two of his sub-tests, and obtained a reliability of .80. The third sub-test showed a reliability of .84 obtained by the Spearman-Brown Prophecy formula.

#### D. Summary of Chapter

Although the reliability formulas used in several other studies vary, the retest reliabilities of .70, .77, and .71 obtained for the present tests appear similar to that for other tests of listening comprehension. In view of the fact that many of the other tests take from one to three hours to administer, the reliabilities of these tests, which run less than thirty minutes, and permit easy administration within a fifty minute class period, appear at least the equal of other listening tests.

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<sup>8</sup> Arthur W. Heilman, op. cit., 304.

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## CHAPTER VII

## CHAPTER VII

### THE VALIDITY OF THE TESTS

. . . The validity of the test depends upon the effectiveness with which it measures that which it is intended to measure, or, otherwise stated, upon the effectiveness with which it accomplishes the purpose it is intended to accomplish. . . . .  
If a test is "valid", it is valid for a given purpose, with a given group of pupils, and it is valid only to the degree that it accomplishes that specific purpose for that specific group. . . .<sup>1</sup>

Purpose and group. The specific purpose and specific group for which the present tests were designed can be restated: to determine the amount or degree of listening comprehension skill possessed by freshmen students in the Communication Skills program of Michigan State College.

#### A. Validity Studied by Comparison with the Nichols Test

The first measure of validity applied to the present tests was the determination of their relationship with an already developed test, namely two parts of the Nichols Test.<sup>2</sup> This test had been developed and used with 200 college

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<sup>1</sup> Herbert E. Hawkes, E. F. Lindquist, C. R. Mann, op. cit., 21.

<sup>2</sup> The Nichols Test is described in Appendix A.

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freshmen drawn from the communications courses on the St. Paul Campus of the University of Minnesota. Copies of the records for this test and questions on the various recorded lecture excerpts had been supplied by Professor Nichols for purposes of other listening studies being carried on in the Michigan State College course.

To obtain the test scores for the correlations, all students took one of the present tests during the first administration; and then during the second week, approximately one-half of the students took two parts of the Nichols Test.<sup>3</sup> The correlations between scores on each of the tests and the scores of the same students on the Nichols Test are shown in Table VII.

TABLE VII  
CORRELATIONS BETWEEN TEST AND NICHOLS TEST

|  | Test 1 | Test 2 | Test 3 |
|--|--------|--------|--------|
| Correlation <sup>a</sup>                                       | .50    | .51    | .81    |
| Number   | 60     | 30     | 22     |
| <sup>a</sup> All correlations are significant at the 1% level. |        |        |        |

<sup>3</sup> The administration of these tests was explained in Chapter V.



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The mean and standard deviation of the scores of students who took the test and later took the Nichols Test are reported in Table VIII.

TABLE VIII  
MEAN AND STANDARD DEVIATION OF SAME STUDENTS  
ON TEST AND NICHOLS TEST

|                 | Test 1 |      | Test 2 |      | Test 3 |      |
|-----------------|--------|------|--------|------|--------|------|
|                 | Mean   | S.D. | Mean   | S.D. | Mean   | S.D. |
| Number          | 60     |      | 30     |      | 22     |      |
| Test            | 12.27  | 5.20 | 14.00  | 5.56 | 17.23  | 6.25 |
| Nichols<br>Test | 14.50  | 3.61 | 15.30  | 4.06 | 15.86  | 3.83 |

The positive correlations between the three tests and the Nichols Test indicate that the tests are measuring something which is similar. The medium correlations indicate that some other factors are being measured. The limits beyond which the obtained correlations will not vary ninety-nine times out of a hundred (Test 1: .21 to .71; Test 2: .07 to .78; and Test 3: .49 to .94) warrant the conclusions that to the extent the Nichols Test is a valid measure of some factors of listening comprehension, the present tests are also valid measures of similar factors.

### B. Validity Studied by Expert Inspection

The second measure of validity used was that of inspectional validity by a group of experts. A letter was addressed to three authorities in the field of listening, asking them if they would be willing to read the test materials, express an opinion concerning the validity of the test, and to pass any other comment that they wished on the test materials.

Professor Ralph Nichols of the University of Minnesota, Chairman of the Listening Committee of the National Society for the Study of Communication, was sent the following materials for Test 1:

#### Responses<sup>4</sup>

Explanation of Responses (Developed after the test had been administered to students in the listening laboratories)

Special Emphasis Directions for Test 1 (Developed for the retest)

#### Passage

Items (The thirty-seven chosen after item analysis).

His reply of May 26, 1952, read as follows:<sup>5</sup>

I have carefully examined your test #1 measuring listening comprehension. It seems to me that it should

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<sup>4</sup> The complete text of material for Test 1 is given in Chapter VIII.

<sup>5</sup> Personal letter.

prove to be a valid instrument. In fact, I believe you have hit upon a rather novel and highly effective method of testing this skill.

Your keying of your test items appears to me to be entirely accurate save for one or two very small details which I have taken the liberty of indicating in pencil.

(Ralph Nichols)

Professor Harold Anderson of the University of Chicago, Chairman of the Vertical Committee on Listening of the National Council of Teachers of English, was sent the following material for Test 2:

Responses<sup>6</sup>

Directions for Taking Listening Comprehension Test

Practice Session

Passage

Items (The fifty items chosen for the laboratory trial)

His reply of June 22, 1952, written under adverse conditions, reads:<sup>7</sup>

On the whole, I think you have developed a good test. I have only a few comments.

1. I wonder whether it is sound to test listening comprehension on only one kind of material? Instead of asking many questions on one short passage would it not be better to ask fewer questions and to use the rest of the time to listen to and respond to another type of passage -- say a narrative passage? You will be testing only listening comprehension in the case of expository material.

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<sup>6</sup> The complete text of material for Test 2 is given in Chapter VIII.

<sup>7</sup> Personal letter.

2. I'm a bit uncertain about the wisdom of using the exact quotation items. To remember whether a group of words is an exact quotation or not is in large part a test of memory. For example, item 19 [Discarded after item analysis] is an exact quotation, but item 2 [No. 2 on the final form] is not. But they both ask the same question. How important is it for a listener to know which is the exact quotation? May this not be measuring memory alone?

3. I'm not sure that item 14 is unrelated. . . .  
[This item was discarded after item analysis.]

4. As I reread the test, I see that some of my comments above may not be valid. You call this passage on listening "Passage B". [Labeled "Passage for Test 2" in the final form.] Does that mean that there are to be a number of passages?

5. As I tried to imagine myself really taking the test, I had the feeling that the directions for taking the test or the method of responding was a bit too complicated - that keeping in mind the distinctions among the ways of responding was a distraction. But I'm not able to suggest an improvement.

I have some fear that the test may be testing too largely a person's ability to say whether an idea is related to a main idea or to a subordinate idea. But I suppose that's an important ingredient in both listening and reading.

Like so many tests, this one no doubt will largely measure general intelligence. Have you correlated the results with intelligence scores?

These are only minor matters. On the whole, the test looks good to me.

(Harold)  
Harold A. Anderson

Professor James I. Brown, also of the University of Minnesota, and a member of both the Listening Committee of the National Society for the Study of Communication, and the

Listening Committee of the National Council of Teachers of English, was sent the following materials for Test 3:

Responses<sup>8</sup>

Directions for Taking Listening Comprehension Test

Practice Session

Passage

Items (The fifty items chosen for the laboratory trial)

His reply of April 29, 1952, reads:<sup>9</sup>

After looking over your listening test I am wondering whether my reactions are going to be of much use. I find it impossible to be as objective as I should, primarily because I went over some of the same problems in connection with my own test.

Actually my two most important questions are ones that can be checked rather objectively. For example, your complex seven-point classification scheme may introduce complexities that increase the correlation between your test and I.Q. or your test and memory. Again, it would seem to me even 30 questions over a short passage of about 22 lines is overly analytical. Furthermore, after eight or ten minutes of attention to questions, some being misstatements or containing wrong details, would there not be a strong tendency for undesirable interferences, tending to invalidate your test? Both of these matters, however, can be checked rather objectively, by using a suitable I.Q. test and, say, the Wechsler sub-test on number repetition as a check on the memory factor. The Thurston test of Primary Mental Abilities might give you a similar check.

. . . Certainly you have every reason to set up the hypothesis that your test does measure listening comprehension. The remainder of your research would test whether or not that hypothesis holds up. . . .

(Jim)

James I. Brown

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<sup>8</sup> The complete text of material for Test 3 is given in Chapter VIII.

<sup>9</sup> Personal letter.

Since two of the authorities have raised a question about the memory factor involved in the identification of "exact" materials, the writer urges a consideration of those college lecture-listening situations, particularly in courses where students must remember exact names, exact numbers, and exact relationships; not approximations or similarities. The memory relationship was not studied, as suggested by Professor Brown, since the laboratory testing period had been completed. However, a statement made by Stroud<sup>10</sup> may prove of some value in connection with the problem of memory. In discussing the problem of reading rate and reading comprehension Stroud says:

. . . . This procedure has been criticized on the ground that the obtained score is a memory score rather than a comprehension score. This criticism does not seem to be crucial. The association between learning and retention is much closer than the chapter headings in textbooks are likely to suggest. Any measure of learning is to some extent a measure of retention; and except for retention learning would be impossible. Moreover, it is difficult to attach any value to comprehension in reading except as it eventuates in the ability to make a better response afterward. There is probably no reason to doubt that the pupil who has the best understanding of what he reads, hears, or otherwise apprehends can give the most intelligent account of it afterward. In any situation that involves understanding, that understanding can be measured a moment later. There are no inherent difficulties in the measuring of understanding by a learning test. Those elements, such as places and dates, that do not provide good tests of understanding in a learning test likewise do not provide good tests of understanding in the typical reading test. . . .

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<sup>10</sup> James B. Stroud, op. cit., 130.

Nevertheless, the suggestion made by the authorities has impressed the writer to the extent that in the future he plans to construct a test with only five foils (omitting exact statements of controlling idea and details) and attempt to discover what, if any, differences are revealed about listening comprehension.

The suggestion by Professor Brown that eight or ten minutes of attention to questions, including some misstatements and incorrect details, might invalidate the tests had also occurred to the writer, and this possibility was explored in two ways: First by repeating, near the end of Test 2 and Test 3, two items that had previously been given near the beginning of the tests. As reported in Chapter V, little change occurred because of the position of an item. Second, items near the end of the tests were examined to see if there was any consistent tendency for these items to lack discrimination or to increase greatly in difficulty. Statistical analyses of items near the end of the tests revealed no consistent tendency to differ from items in other parts of the tests. Students who tended to do well or poorly at the beginning of a test tended to perform at the same level toward the end of the test.

Although statistical evidence indicated that students were making equally "good" choices later in the test, Professor Brown's suggestion, plus observation of students in the laboratory test situation suggested that time might have



other influences. Students appeared to become "restless" after hearing and responding to approximately twenty-five items. Therefore the tentatively projected thirty-eight items for each test was reduced to thirty-two items for each of the final tests.

Summary of authoritative opinions. If the present writer interpreted the letters from the three authorities correctly, he inferred from Professor Nichols and Professor Anderson that the present tests measured listening comprehension. He inferred from Professor Brown that the present test had only the hypothesis of measuring listening comprehension, and that the hypothesis needed to be substantiated. Such substantiation has been further undertaken in the remaining parts of this chapter.

#### C. Validity Studied by Relation to Psychological Scores

Most research studies involving the construction of a measure of listening comprehension have correlated the results of scores on the constructed test with scores made by the same students on psychological or scholastic aptitude tests. One of the main reasons for determining the relationship between listening comprehension tests and psychological tests has been the generalized belief that if high correlation existed between the two, then the listening test was probably measuring "intelligence" rather than listening

ability. Two of the authorities who examined the listening tests suggested that they might be measuring intelligence. As a further check on the validity of the three tests, total raw scores were obtained for each student on the American Council of Education Psychological Examination. All incoming students at Michigan State College take these tests during their first weeks at the school. The scores of a sampling of 235 students who entered during the winter and spring quarters of 1952 reveal a mean of 102.86 and a standard deviation of 21.06.<sup>11</sup>

The correlations obtained between psychological scores and test scores for each of the three tests are given in Table IX.

Nichols<sup>12</sup> stated the relation between his total battery of tests and intelligence (A.C.E.) as .54. The correlations between scores on the two parts of his test used in the

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<sup>11</sup> Although this is a representative sample of students entering in the winter and spring quarters of 1952, it is significantly different from the results obtained by sampling 1,465 first term freshmen students who entered in the fall quarter of 1951. Their mean score was 106.12, standard deviation 20.92. The mean difference is 3.26, which gives a  $t$  of 2.21; and which is significant at the 5% level of confidence. The average score of 3,083 students (including transfer students) who entered in the fall of 1949 was 105.11, and the standard deviation was 22.03.

<sup>12</sup> Ralph G. Nichols, "Factors in Listening Comprehension", op. cit., 158.



TABLE IX  
CORRELATIONS BETWEEN TEST AND PSYCHOLOGICAL SCORES

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|                          | Test 1 | Test 2 | Test 3 |
|--------------------------|--------|--------|--------|
| Correlation <sup>a</sup> | .44    | .51    | .52    |
| Number                   | 113    | 63     | 59     |

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<sup>a</sup> All correlations are significant at the 1% level.

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present study and the scores on the A.C.E. test obtained by the population used in this study were as follows:

Nichols Test and 52 students taking Test 1: .69

Nichols Test and 29 students taking Test 2: .64

Nichols Test and 22 students taking Test 3: .56

Among the other studies primarily concerned with developing a measure of listening comprehension, the following correlations have been stated:

Blewett<sup>13</sup> stated the relationship between his test and the A.C.E. to be  $.51 \pm .04$ . Brown<sup>14</sup> reported the relationship between intelligence (A.C.E.) for college students and Part I of his test to be .369, and for Part II, .287.

Prince<sup>15</sup> reported the relation ( $\rho$ ) between A.C.E. scores

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<sup>13</sup> Thomas T. Blewett, op. cit., 54.

<sup>14</sup> James I. Brown, "Construction of a Diagnostic Test of Listening Comprehension", op. cit., 87.

<sup>15</sup> Bernice Prince, op. cit., 61.



and her measure of "listening effectiveness" as .631. Heilman<sup>16</sup> found the relationship between total scores on the A.C.E. and listening to be .56. When the total literature on listening - regardless of whether test construction was a major or a minor element - is considered, the highest correlation reported was that of Goldstein,<sup>17</sup> who found a correlation of .72 between the Otis test and listening; and the lowest was that reported by Knower<sup>18</sup> of .27, between the Iowa Qualifying Examination and listening to informative speeches.

Intelligence and the present tests. In view of the varying relationships that have been stated between intelligence and listening, what can be said about the present tests? The correlations of .44, .51, and .52, appear to be approximately between the extremes reported: they agree with those of Blewett and Heilman; they are higher than those of Brown and Knower; and they are lower than those of Goldstein and Prince. Until more definite information between intelligence and listening is available, it would seem that the only reasonable conclusion to be drawn is that the present tests, having a medium correlation with intelligence,

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<sup>16</sup> Arthur W. Heilman, op. cit., 306.

<sup>17</sup> Harry Goldstein, op. cit., 51.

<sup>18</sup> Franklin H. Knower, and others, op. cit., 87.



are neither more nor less than other listening tests, a measure of intelligence.

#### D. Validity Studied by Relation to Reading Ability

Another factor commonly studied in validating listening tests has been the relation of listening ability to reading ability. Much of the motivation for the study of this relationship probably grew out of the desire of many experimenters to discover how listening compared with reading as a means of obtaining information. Some of it derived from the desire to determine whether auditory presentation was more effective than printed visual presentation in the sale of advertised merchandise. Since there was a large amount of material reported concerning the relationship of listening ability to reading ability, a similar relation was determined for the present tests to see how they compared with other findings.

Total raw scores on the reading parts of the American Council of Education Psychological Examination were correlated with students' scores on the present tests to arrive at the data in Table X.

Nichols,<sup>19</sup> coefficient of correlation between his battery of tests and reading comprehension (Iowa Silent Reading

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<sup>19</sup> Ralph G. Nichols, "Factors in Listening Comprehension", op. cit., 158.



TABLE X  
CORRELATIONS BETWEEN TEST AND READING ABILITY

|                          | Test 1 | Test 2 | Test 3 |
|--------------------------|--------|--------|--------|
| Correlation <sup>a</sup> | .53    | .39    | .61    |
| Number                   | 113    | 63     | 59     |

<sup>a</sup> All correlations are significant at the 1% level.

Examination) was .46. The two parts of his test used in this study by the present population correlated with reading (A.C.E.) as follows:

Nichols Test and 52 students taking Test 1: .71

Nichols Test and 29 students taking Test 2: .77

Nichols Test and 22 students taking Test 3: .69

Blewett<sup>20</sup> found a correlation of .35 between the first part of his test and reading comprehension, and a correlation of .52 between the second part of his test and reading comprehension. Brown<sup>21</sup> found the relationships between reading ability (Nelson-Denny Silent Reading Test) and Part I of his test to be .311; and Part II, .356. Heilman<sup>22</sup> reported a correlation of .66 between listening and the Cooperative

<sup>20</sup> Thomas T. Blewett, op. cit., 54.

<sup>21</sup> James I. Brown, "The Construction of a Diagnostic Test of Listening Comprehension", op. cit., 89.

<sup>22</sup> Arthur W. Heilman, op. cit., 307.

Test of Reading Comprehension. Prince<sup>23</sup> found a rho of .679 between listening effectiveness and the Survey Section of the Triggs Diagnostic Test of Reading. Rankin<sup>24</sup> correlated the mean of four reading tests with the corresponding listening test for his fifth and seventh grade pupils and obtained a figure of .48. Goldstein's<sup>25</sup> correlation of .78 between the same printed tests on the same materials presented on film and record is among the high reports. Although in vocabulary studies Anderson and Fairbanks<sup>26</sup> reported a corrected correlation of .95.

Reading and the present tests. The present tests, with correlations of .53, .39, and .61 between listening and reading, suggest a number of implications. The most obvious appear to be the following: The relation of reading ability to listening ability is highly variable. The differences between Test 2 and Test 3, are apparently not due to the introduction of a "reading" factor, because both of these tests were identical in the amount of reading material: The same duplicated materials (Instructions for Taking Listening Com-

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<sup>23</sup> Bernice Prince, op. cit., 61.

<sup>24</sup> Paul T. Rankin, "Listening Ability, II", op. cit., 420.

<sup>25</sup> Harry Goldstein, op. cit., 51.

<sup>26</sup> Irving H. Anderson and Grant Fairbanks, op. cit., 319.

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prehension Test, and Responses) were distributed to all students.

That the inclusion of reading materials for a listening test may influence the results of the test was specifically noted by Blewett. He found that two parts of his test, one of which contained more reading than the other, correlated .35 and .52 respectively with reading ability. He points out that,

This might suggest, but certainly does not establish, that the reading factor, when introduced into a listening test, does have a contaminating influence upon the listening scores. .<sup>27</sup> . Further research is needed to clarify this issue.

The results of the present study are conflicting: Test 1, which had the least amount of reading (Responses Sheet only) had a correlation nearer to Test 3 than did Test 2, which had exactly the same amount of reading material as Test 3. The difference does not appear to be explained by either the difficulty of the tests, nor by the type of material used in the passages. Although there may be some similarities between the "Instructions" passage used for Test 1 and the "Definition" passage used for Test 2, these similarities do not seem sufficient to account for the differences between the first two tests and the last. The variability in the relationship between each test and read-

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<sup>27</sup> Thomas T. Blewett, op. cit., 57.

ing ability is nearly as great as the variability expressed by some other studies.

In view of the variations these conclusions seem pertinent concerning the relation of listening ability to reading ability: (1) The present tests show a considerable variation. (2) Other studies show considerable variation. (3) There is a need for further study using different types of listening tests; some with and some without reading; and using different kinds of material. (4) The variability of the present tests is well within the extremes found by other studies, and the present tests may be considered "normal".

### E. Validity Studied in Relation to Sex Differences

Because Nichols<sup>28</sup> and some others<sup>29</sup> had reported a difference in comprehension favoring male listeners, a study was made of the scores on the respective tests for each of the two sexes. The mean and standard deviation of male and female scores, the mean and standard deviation of the combined male and female scores, and the differences between the mean scores of males and females have been reported in Table XI.

<sup>28</sup> Ralph G. Nichols, "Factors in Listening Comprehension",  
op. cit., 159.

29 Mary Burton, op. cit., 49.  
J. Edwin Loder, op. cit., 56. <sup>also</sup>

TABLE XI  
DIFFERENCES BETWEEN MALES AND FEMALES ON THE TESTS

|                         | Test 1 |      | Test 2 |      | Test 3 |      |
|-------------------------|--------|------|--------|------|--------|------|
|                         | Mean   | S.D. | Mean   | S.D. | Mean   | S.D. |
| Males                   | 11.84  | 5.79 | 14.42  | 5.63 | 17.41  | 5.63 |
| Females                 | 12.76  | 4.50 | 13.95  | 4.68 | 16.50  | 6.26 |
| Combined                | 12.11  | 5.46 | 14.26  | 5.33 | 17.11  | 5.86 |
| Difference <sup>a</sup> | .93    |      | .46    |      | .91    |      |
| t scores <sup>a</sup>   | .96    |      | .30    |      | .55    |      |

<sup>a</sup> None significant

Kramar and Lewis<sup>30</sup> report that,

In addition to the original purpose of this study the listening ability of men and women was investigated but there was no conclusive evidence to indicate that there is a difference in the scores of men and women listeners. Even though there was a difference in the scores it was possible for such a difference because of the chance or sampling error alone.

The results on the present tests agree with Kramar and Lewis. However, the writer would speculate that in view of the slight difference in favor of the girls for Test 1 (The only one in which the girls surpassed the boys) that in tests developed by actual trial and subsequent item analysis the make-up of the trial group is an important influence in

<sup>30</sup> Edward J. J. Kramar and Thomas R. Lewis, op. cit., 20.



determining whether the final test will tend to show a superiority for either sex.

The conclusions to be drawn from this study are that differences between the sexes are small, probably due to chance; and that such differences do not appear to offer an index or guide to validity.

#### F. Validity Studied by Reference to Course Content

The instructional materials for the listening laboratory are presented in duplicated form, not yet available for print. A detailed report of instructional material for the first term was presented by Irvin.<sup>31</sup> The major aspects of the listening instruction are presented in short (approximately ten minute) talks at the beginning of each laboratory hour. The students then hear a thirty-five minute lecture. The last ten minutes of the period are devoted to review, and checking with students to see how they were able to apply the listening instruction to the specific lecture.

Following are the titles of each unit, and a very brief statement of the content of the unit:

1. Listening as a Fourth Skill. This unit emphasized the amount of time students and others spend in listening.

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<sup>31</sup> Charles Irvin, op. cit., 116-155.



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2. The Kinds of Listening. This unit introduces the belief that listening can be improved and defines the kinds of listening.

3. Preparation for Listening. Here students are told how to come physically, emotionally and intellectually prepared to listen to lectures.

4. Exercising Emotional Control in Listening. This deals primarily with the undesirable influences of identification and projection upon the content of heard materials.

5. Structuralizing in Listening. This discusses the organization of lectures in the form of introduction, purpose, body, and conclusion.

6. Listening for Main Points. At this time the students are told how to use main points to aid them as listeners.

7. Listening for Comprehension. The last unit tells the students to detect the purpose; identify and relate main points; and to discriminate statements of fact from statements of principle, and ideas from examples illustrating those ideas.

The material in the first four units is pertinent to skill in listening, but it is a means to better listening, not the content of listening itself. Units 5, 6, and 7 begin the actual content of listening material. This content

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material is further developed in the second and third quarters of the course.

An examination of the seven foils (Chapter II) and the particular items for the tests (Chapter V) indicates that the students are asked to find the purpose (or controlling idea) of a lecture (or passage) whether it be stated at the beginning, middle or end of the oral presentation; and that students are asked to find the major idea or main points; and to discriminate clearly between purpose and development of material. Furthermore, the test seeks to do this in various degrees by asking the student to distinguish related from unrelated materials, and still further to distinguish between exact and similar materials.

In view of the factors emphasized in the course content, and the nature of the test materials, it seems that the tests measure those factors considered significant in the course itself.

#### G. Validity Studied by Reference to Materials

##### in the Speech Text and in Reading Manuals

##### Used in the Course

The implications for measuring listening comprehension derived from studying the speech text and the reading manuals used in conjunction with the course were reported in detail in Chapter III.



Those implications which are important to comprehension as derived from the study of the speech text were summarized as follows:

1. The listener should comprehend clearly the central idea of the talk.
2. The listener should clearly identify the main divisions of the talk.
3. The listener should remember the main divisions of the talk.
4. The listener should separate the essential from the non-essential; including the selection of the major aspects of information and various uses of developmental material.
5. The listener should remember such developmental materials (details) as are significant to the comprehension of the ideas.

Those implications which are important to comprehension as derived from the study of four reading manuals were summarized as follows:

1. The listener's ability to remember and/or identify a central idea.
2. The listener's ability to remember and/or identify a detail (or details).
3. The listener's ability to differentiate between central idea and detail.

4. The listener's ability to correctly identify a central idea derived from stated details.
5. The listener's ability to determine relationship or lack of relationship.
6. The listener's ability to select the best summary statement.
7. The listener's ability to identify the correctness, and/or relatedness of conclusions of a factual nature derived from total material.

Those factors which appear to be emphasized in the speech text, and those factors which appear to be emphasized in the reading improvement manuals have been included in the present tests: first by the development of the seven foils which contain the basic divisions of controlling idea, details, and relatedness or lack of relatedness; and second, in the items which contain specific statements about meaningful material presented in the passages.

To the extent that factors of comprehension derived from these sources represent the desirable content of listening comprehension, the present tests are valid.

#### H. Summary of Chapter

This chapter has examined the validity of the present tests in relation to: (a) Two parts of the Nichols Test, and indicated that the correlations were positive and significant at the one per cent level of confidence; and although

not high, the correlations indicated that to the extent that the Nichols Test was a valid measure of listening comprehension, the present tests were also valid measures of listening comprehension. (b) Inspectional validity by three experts, with the conclusions that two of the three authorities considered the tests valid. (c) "Intelligence", and indicated that the present tests, with correlations about midway between the extremes of the correlations that have been found to exist between listening and "intelligence", were as valid as the "average" of listening tests. (d) Reading ability, and concluded that the wide variation found between the different tests and the wide variation reported by other studies indicated the need for continued investigation; and that the present tests are well within the extremes found by other studies, and may be considered "normal". (e) Differences in comprehension between the sexes, and concluded that such differences were small, probably caused by chance, and do not provide an index of validity. (f) The course units in listening instruction, and indicated that the factors emphasized in the content of listening were included in the test. (g) Those factors emphasized as significant to comprehension in the speech text and reading improvement manuals used in the course; and concluded that those factors were included in the test; and to the extent that such factors are valid indices of the content of listening tests, the present tests were valid.



## CHAPTER VIII

## CHAPTER VIII

### SUMMARY - THE THREE TESTS

The purpose of this study was to develop a test, capable of being administered in the listening "laboratory" of the Michigan State College course in Communication Skills, that would measure the amount or degree of listening comprehension skill possessed by freshmen.

The preceding chapters have reported the background leading to the need for a listening test; the specific factors to be emphasized; the conditions influencing the type and length of the test; the development of the seven foils; the selection of the passages; the development and refinement of the items; and the study of the tests for reliability and validity. This chapter reports the complete material for each of the three tests developed.

It should be noted that Test 1, in its present form is too difficult for use without further revision. Test 2 and Test 3 are now suitable for use in the listening "laboratory" of the freshman Communication Skills course at Michigan State College.

## Test 1

RESPONSES<sup>1</sup>

Read carefully before beginning test.

Please return with answer sheet.

Keep before you for reference.

1. This is a quotation (exact repetition) of the central idea of the passage. It was actually stated in these same words in the passage.

Note: Other terms used for "central idea" are: Controlling idea, thesis, thesis sentence, purpose, purpose sentence, topic sentence, etc.

Most people use many words to convey just one idea. They explain with more words, give examples, etc. But all of these words attempt to present one idea clearly. This one idea they are presenting we call a central idea.

2. This statement implies or suggests the same central idea as the passage. It "truly" represents the central idea of the passage, but it is stated in different words from those used in the passage.
3. This is a mis-statement or mis-representation ("false", twisted, deceiving, partially true, partially false) of the central idea of the passage.

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<sup>1</sup> To be printed, and distributed to each student.

4. This is a quotation (exact repetition) of one of the details in the passage. It was actually stated in these same words in the passage.

Note: Other terms used for "detail" are: "Sub-point, sub-idea, supporting material, developmental material, etc.

The materials (words) that a speaker uses to clarify and make vivid any central idea are called details. A speaker may use as many details as he wishes. The most commonly used details are explanation, description, definition, illustration, example, statistics, comparison, and authoritative statement. Details may be said to be any material used to clarify or make meaningful a central idea.

5. This statement implies or suggests one of the details, or a similar detail, stated in the passage. It "truly" represents a detail in the passage, or a similar detail, but it is stated in different words from those used in the passage.
6. This is a mis-statement or mis-representation ("false", twisted, deceiving, partially true, partially false) of a detail in the passage.
7. This statement is unrelated to either the central idea or a detail of the passage. It is neither a "true" nor a "false" quotation or implication of the central idea or a detail; but is rather entirely unrelated to either the

central idea or a detail of the passage. The information is neither given in nor implied by the passage.

SHORTER STATEMENT OF RESPONSES

(A) Those concerned with the central idea.

1. Quote. Exact repetition of central idea.
2. Same central idea, but in different words.
3. False, twisted, or wrong central idea.

(B) Those concerned with the details.

4. Quote. Exact repetition of a detail.
5. Same, or similar detail, but in different words.
6. False, twisted, or wrong detail.

(C) The one concerned with both central idea and details.

7. Unrelated. Not given or implied.

Test 1: Explanation of Responses<sup>2</sup>

Your attention please!

Please take up the paper that has RESPONSES at the top.

(Pause) You will need this Responses sheet when you take the listening test. Look first at number 1. Note that number 1 refers to a quoted statement of the central or controlling idea of anything you may hear or read. For example, my purpose in talking about the Responses sheet is to have you understand it clearly. To state it another way: my major aim or thesis is to explain the Responses sheet you are now examining.

You have many different backgrounds and to try to use one word that expresses the same idea to all of you is difficult. Therefore, you will note after the explanation of response 1 that there are a series of words. (Pause) Any one of those words is intended to show you what we are calling a "controlling idea", or "central idea". Some of you have been taught to call it a thesis, thesis sentence, purpose sentence, or topic sentence, etc. But whatever you have been taught to call it, the term central idea represents the major, over-all, single idea conveyed by a speaker when he talks, or a writer when he writes.

Look quickly at 2, and note that this refers to a central idea you have heard or read, but this time instead of

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<sup>2</sup> To be recorded or read by examiner: Preferably recorded.

being stated in the actual words of the speaker or writer, it presents the same idea but in different words.

Response 3 indicates a false or twisted statement of a central idea. For example, if I should say that, "My purpose in talking to you now is to tell you how these 7 responses were developed", I would be making a misstatement of the central idea, for you have already been told that the aim is to explain these responses to you.

Next look at number 4. We have departed from the central idea and are now talking about the separate pieces that a speaker or a writer uses to communicate a complete idea to you. Here again, the terminology may not be familiar to all of you. So, several different words have been indicated to suggest what we are calling a "detail". Observe that response 4 is an exact repetition of something you have heard or read.

Now look quickly at 5. This response indicates a true statement of a detail that you may have heard or read, but put in different words from the way it was originally presented to you.

Response 6 is a false or twisted statement of a detail that you may have heard or read. For example, if I should say, "Response 6 is a correct statement about a detail", I would certainly be making a false statement about response 6 as you have it before you.

The last response, number 7, indicates a statement that is unrelated to what you hear or read. It may also indicate

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a statement on which you have no information to make any judgment.

Place this responses sheet where you can easily refer to the Shorter Statement of Responses. (Pause) It is at the bottom of the page. (Pause) You will want to refer to those later. Now, pay no more attention to the responses sheet for the next few minutes.

(Pause)

Test 1: Emphasizing that Test 1 is to be on  
Instructions.<sup>3</sup>

Your attention please! This is very important.

This passage you are about to hear gives the instructions for taking this listening test. You will be tested on these instructions, and only on these instructions to see how well you understand them.

For example, let us say that some one is giving you instructions on how to drive a car. When he completes his explanation he says, "Now, before you try driving, tell me what I said."

In the same way, you will receive instructions for taking this test. When the passage on instructions has been completed you will be asked, "What did they say?"

The next material you hear will be the passage for Test 1, titled "Instructions".

(Pause)

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<sup>3</sup> To be recorded. All materials to be read at the rate of 100 words per minute.

Test 1: Passage<sup>4</sup>INSTRUCTIONS

This is a test of listening comprehension. Just as you take reading comprehension tests to learn how much you understand when you read, this test is designed to tell you how much you understand when you listen.

This passage tells you how to take the test.

First, do not make any noise or you may prevent yourself and others from hearing the necessary material.

Second, do not take any notes; just listen attentively.

Third, listen carefully for you will need the information you are now hearing to do this test.

After you hear this passage on instructions you will hear a number of statements. Any statement may or may not be related to these instructions you are now hearing. You are to assign each statement to one of seven possible responses. As soon as you hear a statement you should decide which of the seven possible responses that statement belongs in, and mark the appropriate space on your answer sheet immediately. For example, if you should hear the statement, "How to listen to a classroom lecture", you would mark space 7, for that statement is entirely unrelated to this passage on instructions for taking the test.

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<sup>4</sup> To be recorded.

Each statement will be given only once; it will not be repeated.

Throughout the test you should mark only one space for each statement. If you don't know, guess. Your score will be computed on the number of correct answers.

This completes the instructions for taking the test. No additional information will be given. Do not ask any questions. See how well you can classify some statements about the instructions you have just heard.

End of Passage for Test 1.

Test 1: Items<sup>5</sup>

Number 1 on your answer sheet. ". . . Do not take any notes. . ." (4)<sup>6</sup>

(20 second pause)

Number 2. You should mark 7 answers for each question. (6)

(19 second pause)

Number 3. Instruction for taking the test is far from the main idea of the first passage. (3)

(18 second pause)

Number 4. It is better to answer every question on this test than to leave one blank. (5)

(17 second pause)

Number 5. "Each statement will be given only once." (4)

(16 second pause)

Number 6. Directions for the test. (2)

(15 second pause)

Number 7. The first passage will tell you nothing about the test. (3)

(14 second pause)

Number 8. Hearing and listening are sometimes considered the same. (7)

(13 second pause)

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<sup>5</sup> To be recorded.

<sup>6</sup> The correct response is indicated in parentheses after each item.



Number 9. Your score will be computed on the number right  
minus the number wrong. (6)

(12 second pause)

Number 10. The directions for the test are in the first  
passage. (2)

(11 second pause)

11. The main ideas are the most important. (7)

(10 second pause. All following items have a 10 second  
pause after each item.)

12. ". . . the instructions for taking the test." (1)

13. You have several choices for each question. (5)

14. Instructions for taking a listening comprehension test.  
(2)

15. ". . . mark the appropriate space on your answer sheet  
immediately." (4)

16. Listening is a valuable skill. (7)

17. How to take any listening test. (3)

18. Each statement you hear will be related to the passage.  
(6)

19. The example for response 7 was listening to a class-  
room lecture. (5)

20. The passage tells you how to select the correct answer  
for each statement. (3)

21. You should give careful attention to the information. (5)

22. "This passage tells you how to take the test." (1)

23. "Your score will be computed on the number of correct answers." (4)
  24. We should try to improve our listening skill. (7)
  25. Instructions on how to take the test. (2)
  26. You should wait a few minutes before deciding which response a statement belongs in. (6)
  27. Improved listening should be a part of education. (7)
  28. Answer every question whether you know the answer or not. (5)
  29. The instructions for the test are not a part of the test. (3)
  30. The directions for the test. (2)
  31. "If you don't know, guess." (4)
  32. Mark only those answers that you are sure of. (6)
- (10 second pause)

This is the end of Listening Test 1.





## Test 2:

INSTRUCTIONS FOR TAKING LISTENING COMPREHENSION TEST<sup>7</sup>

Read carefully before taking test. Return with answer sheet.

This is a test of listening comprehension. Just as you take reading comprehension tests to learn how much you understand when you read, this test is designed to tell you how much you understand when you listen.

Do not make any noise during the test or you may prevent yourself and others from hearing the necessary material.

You will first hear a short passage about three minutes long. Do not take any notes: just listen attentively to the passage.

After you have heard the passage you will hear a number of statements. Any statement may or may not be related to the passage you have just heard.

You are to assign each statement to one of 7 possible choices. As soon as you hear a statement you should decide which of the 7 possible responses that statement belongs in; and you should mark the appropriate space on your answer sheet immediately.

Each statement will be given only once; It will not be repeated. You will, however, have adequate time to mark your answer sheet before you hear the next statement.

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<sup>7</sup> To be printed, and distributed to each student.

Throughout the test mark only one space (response) for each statement. Do not mark more than one space for any statement, or your answer for that question will be dropped from your score.

If you don't know, guess. Your score will be computed on the number of correct answers.

Now, re-read the 7 choices shown on the Responses page. Note that responses 1, 2 and 3 are different ways of talking about the central idea of the passage you will have heard; 4, 5, and 6 are different ways of talking about a detail in the passage; and response 7 indicates that a statement is unrelated to either the central idea or a detail.

Fill in the top of your answer sheet according to the directions given by your instructor.

Place the Responses page where you can refer to it while you are hearing the statements and marking your answer sheet.

Then be prepared to listen carefully to the practice exercise, the passage, and then to the statements you will hear.

You should have:

1. This page: Instructions for Taking  
Listening Comprehension  
Test.
2. Responses.
3. Answer sheet.
4. Electrographic pencil.

## Test 2

RESPONSES<sup>8</sup>

Read carefully before beginning test.

Please return with answer sheet.

Keep before you for reference.

1. This is a quotation (exact repetition) of the central idea of the passage. It was actually stated in these same words in the passage.

Note: Other terms used for "central idea" are: Controlling idea, thesis, thesis sentence, purpose, purpose sentence, topic sentence, etc.

Most people use many words to convey just one idea. They explain with more words, give examples, etc. But all of these words attempt to present one idea clearly. This one idea they are presenting we call a central idea.

2. This statement implies or suggests the same central idea as the passage. It "truly" represents the central idea of the passage, but it is stated in different words from those used in the passage.
3. This is a mis-statement or mis-representation ("false", twisted, deceiving, partially true, partially false) of the central idea of the passage.

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<sup>8</sup> To be printed, and distributed to each student.

4. This is a quotation (exact repetition) of one of the details in the passage. It was actually stated in these same words in the passage.

Note: Other terms used for "detail" are: "sub-point, sub-idea, supporting material, developmental material, etc.

The materials (words) that a speaker uses to clarify and make vivid any central idea are called details. A speaker may use as many details as he wishes. The most commonly used details are explanation, description, definition, illustration, example, statistics, comparison, and authoritative statement. Details may be said to be any material used to clarify or make meaningful a central idea.

5. This statement implies or suggests one of the details, or a similar detail, stated in the passage. It "truly" represents a detail in the passage, or a similar detail, but it is stated in different words from those used in the passage.
6. This is a mis-statement or mis-representation ("false", twisted, deceiving, partially true, partially false) of a detail in the passage.
7. This statement is unrelated to either the central idea or a detail of the passage. It is neither a "true" nor a "false" quotation or implication of the central idea or a detail; but is rather entirely unrelated to either the

central idea or a detail of the passage. The information is neither given in nor implied by the passage.

SHORTER STATEMENT OF RESPONSES

- (A) Those concerned with the central idea.
  - 1. Quote. Exact repetition of central idea.
  - 2. Same central idea, but in different words.
  - 3. False, twisted, or wrong central idea.
- (B) Those concerned with the details.
  - 4. Quote. Exact repetition of a detail.
  - 5. Same, or similar detail, but in different words.
  - 6. False, twisted, or wrong detail.
- (C) The one concerned with both central idea and details.
  - 7. Unrelated. Not given or implied.

Test 2: Practice Session<sup>9</sup>

Your attention please! This is a practice session. You should do this part of the test, but you will not be scored on it. We will use numbers 41, 42, and 43 on your answer sheets. (Pause)

Here is a very short passage. This is practice passage X.

There are a great many situations in which we listen. We go to church or synagogue and listen to the minister, priest or rabbi; we go to the movies and look and listen; we turn on the radio and listen; we participate in a conversation and we talk and listen; we sit in class and listen to lectures, etc., etc.

End of practice passage X. (Pause)

Put your "Responses Sheet" where you can easily refer to the "Shorter Statement of Responses". It is at the bottom of the page. (Pause) Practice statement number 41. The main idea of the passage is how to listen. Is this statement related to the passage you heard? Vaguely, yes. So the correct response cannot be number 7. (Pause) Is the statement about the whole passage or is it about one of the details in the passage? The statement said, "The main idea of the passage is how to listen." Therefore, there are two stated cues telling you that the statement refers to the

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<sup>9</sup> To be recorded.

central, controlling idea of the whole passage. These cues are the words "main idea", which is just another way of saying "central idea"; and the word "passage", which is the whole thing you heard. So, the statement is about the central idea, and not a detail. Therefore, the answer must be in response 1, or 2, or 3. (Pause) Is it a direct quotation of the central idea? No. So, response 1 is out. Is it a statement representing the correct idea of the entire passage? No, because the central idea of the passage was about the many situations in which we listen. Nothing was said about how to listen. So, response 2 is out. Is the statement a mis-representation of the central idea? Yes. So, we mark space 3. (Pause)

Practice statement number 42. "If we go to a pep rally we listen to speakers". Ask yourself, "Is this statement related to the passage?". In a way, yes. It is another example, or detail, of one of the many situations in which we listen. So, response 7 is wrong. Is the statement about the whole passage? No, we already reached that decision when we decided that the statement was just another example or detail; so we know that our answer must lie in response 4, 5, or 6. Is it a quote of one of the details? No, pep rallies were not mentioned in the original passage. Therefore, the answer can't be response 4. But, does the statement suggest or imply a detail "truly" similar to those given in the passage? Yes, it is another similar detail.



So, we mark response 5, and wait for the next statement.

(Pause)

Practice statement 43. "There are a great many situations in which we listen". This is an exact repetition of a sentence in the practice passage. Does this quotation express the one, over-all controlling idea of the passage; or does it express one of the details? The quotation doesn't mention any details whatsoever; it is just a generalized statement of the main idea of the whole passage. Therefore you mark space 1 on your answer sheet.

This is the end of the practice session. (Pause)

Be prepared to listen to the passage for Test 2 titled, "Definition".

Test 2: Passage<sup>10</sup>DEFINITION

As human beings we are constantly bombarded with all kinds of stimuli from the world around us. We see things with our eyes, taste with our tongues, smell with our noses, and feel with our senses of touch.

For the next few minutes we will confine our attention to those stimuli we receive through the ear - those called sound - in an attempt to answer the question, What do we mean by the term listening?

The first important factor in our definition of listening is the reception of sound. When listening to television, sound-movies, or a speaker before us, we receive both auditory and visual impressions. When we listen to the telephone, radio, recordings, or a person talking even though we cannot see him, we depend exclusively on the ear. The visual element may or may not be present. If present it is a further aid to understanding; but visual impressions may be excluded, and we can still listen.

Second, we should note that we receive a great many different kinds of impressions through our ears. A broad classification of sound ranges from noise to music. We shall limit these impressions to word sounds or language symbols. So, in this definition we include only a person

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<sup>10</sup> To be recorded at approximately 100 words per minute.

talking; and we exclude all other auditory impressions such as train whistles, instrumental music, telegraphic code, tom-toms, etc.

Third, we must have an attentive receiver. The most significant factor of listening is not that it involves sound, nor language symbols, but that these symbols are interpreted by a receiver to have meaning. If a recording of a speech is playing, but you are not present to hear it, we say you are neither hearing nor listening. If you are present, but looking out the window day-dreaming you may be hearing, but you are not listening.

We can summarize our definition in this way: Listening is the act of an attentive person interpreting word symbols received primarily through the auditory sense.

End of Passage for Test 2.

Test 2: Items<sup>11</sup>

Number 1 on your answer sheet. "When listening to television, sound-movies, or a speaker before us, we receive both auditory and visual impressions."  
(4)<sup>12</sup>

(20 second pause)

Number 2. Listening is often improved by day-dreaming because the latter brings new ideas to mind. (6)

(19 second pause)

Number 3. The definition, as a whole, included all the sound we can hear. (3)

(18 second pause)

Number 4. Day-dreaming may prevent listening. (5)

(17 second pause)

Number 5. ". . . Visual impressions may be excluded. . ." (4)

(16 second pause)

Number 6. The definition had three main parts: sound, type of sound, and an attentive interpretation. (2)

(15 second pause)

Number 7. This was mainly an attempt to clarify our understanding of how we hear. (3)

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<sup>11</sup> To be recorded.

<sup>12</sup> The correct response is indicated in parentheses after each item.

(14 second pause)

Number 8. Deaf people often read the lips of a speaker to get his meaning. (7)

(13 second pause)

Number 9. If you are present, but looking out the window, you may be listening, but you are not hearing.  
(6)

(12 second pause)

Number 10. Listening is the act of hearing and understanding what another person says. (2)

(11 second pause)

11. Blind persons are usually the best listeners. (7)

(10 second pause after this item, and all remaining items.)

12. "Listening is the act of an attentive person interpreting word symbols received primarily through the auditory sense." (1)

13. Sound may be classified along a scale having music at one end, and mere noise at the other. (5)

14. What does the word listening mean? (2)

15. "The first important factor in our definition of listening is the reception of sound." (4)

16. Effective listening is one of the earmarks of a good student. (7)

17. The passage was concerned mainly with explaining the process by which we hear sound. (3)

18. The three significant factors in listening are: attention, sight, and language symbols. (6)
19. Visual cues or impressions may help us listen, but such impressions are not essential. (5)
20. Listening is any means of conveying ideas between two or more people. (3)
21. Some listening situations also involve sight. (5)
22. "What do we mean by the term listening?" (1)
23. ". . . We exclude all other auditory impressions. . ."  
(4)
24. More education is received through the eye than through the ear. (7)
25. The passage is concerned primarily with limiting the term listening. (2)
26. The third part of the definition states that we receive a great many impressions through our ears. (6)
27. Most authorities state that seeing is more important to life than is hearing. (7)
28. We use the ear to give us all meanings when we cannot see the speaker. (5)
29. The complete definition consisted of four major points or parts. (3)
30. You heard a definition of the word listening. (2)
31. "A broad classification of sound ranges from noise to music." (4)

32. It is very obvious that we hear only a few types of  
sound. (6)

(10 second pause)

This is the end of Listening Test 2.

## Test 3:

INSTRUCTIONS FOR TAKING LISTENING COMPREHENSION TEST<sup>13</sup>

Read carefully before taking test. Return with answer sheet.

This is a test of listening comprehension. Just as you take reading comprehension tests to learn how much you understand when you read, this test is designed to tell you how much you understand when you listen.

Do not make any noise during the test or you may prevent yourself and others from hearing the necessary material.

You will first hear a short passage about three minutes long. Do not take any notes: just listen attentively to the passage.

After you have heard the passage you will hear a number of statements. Any statement may or may not be related to the passage you have just heard.

You are to assign each statement to one of 7 possible choices. As soon as you hear a statement you should decide which of the 7 possible responses that statement belongs in; and you should mark the appropriate space on your answer sheet immediately.

Each statement will be given only once: It will not be repeated. You will, however, have adequate time to mark your answer sheet before you hear the next statement.

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<sup>13</sup> To be printed, and distributed to each student.



Throughout the test mark only one space (response) for each statement. Do not mark more than one space for any statement, or your answer for that question will be dropped from your score.

If you don't know, guess. Your score will be computed on the number of correct answers.

Now, re-read the 7 choices shown on the Responses page. Note that responses 1, 2 and 3 are different ways of talking about the central idea of the passage you will have heard; 4, 5, and 6 are different ways of talking about a detail in the passage; and response 7 indicates that a statement is unrelated to either the central idea or a detail.

Fill in the top of your answer sheet according to the directions given by your instructor.

Place the Responses page where you can refer to it while you are hearing the statements and marking your answer sheet.

Then be prepared to listen carefully to the practice exercise, the passage, and then to the statements you will hear.

- You should have:
1. This page: Instructions for Taking  
Listening Comprehension  
Test.
  2. Responses.
  3. Answer sheet.
  4. Electrographic pencil.

## Test 3

RESPONSES<sup>14</sup>

Read carefully before beginning test.

Please return with answer sheet.

Keep before you for reference.

1. This is a quotation (exact repetition) of the central idea of the passage. It was actually stated in these same words in the passage.

Note: Other terms used for "central idea" are: Controlling idea, thesis, thesis sentence, purpose, purpose sentence, topic sentence, etc.

Most people use many words to convey just one idea. They explain with more words, give examples, etc. But all of these words attempt to present one idea clearly. This one idea they are presenting we call a central idea.

2. This statement implies or suggests the same central idea as the passage. It "truly" represents the central idea of the passage, but it is stated in different words from those used in the passage.
3. This is a mis-statement or mis-representation ("false", twisted, deceiving, partially true, partially false) of the central idea of the passage.

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<sup>14</sup> To be printed, and distributed to each student.

4. This is a quotation (exact repetition) of one of the de-tails in the passage. It was actually stated in these same words in the passage.

Note: Other terms used for "detail" are: "Sub-point, sub-idea, supporting material, developmental material, etc.

The materials (words) that a speaker uses to clarify and make vivid any central idea are called details. A speaker may use as many details as he wishes. The most commonly used details are explanation, description, definition, illustration, example, statistics, comparison, and authoritative statement. Details may be said to be any material used to clarify or make meaningful a central idea.

5. This statement implies or suggests one of the details, or a similar detail, stated in the passage. It "truly" represents a detail in the passage, or a similar detail, but it is stated in different words from those used in the passage.
6. This is a mis-statement or mis-representation ("false", twisted, deceiving, partially true, partially false) of a detail in the passage.
7. This statement is unrelated to either the central idea or a detail of the passage. It is neither a "true" nor "false" quotation or implication of the central idea or a detail; but is rather entirely unrelated to either the

central idea or a detail of the passage. The information is neither given in nor implied by the passage.

SHORTER STATEMENT OF RESPONSES

- (A) Those concerned with the central idea.
  - 1. Quote. Exact repetition of central idea.
  - 2. Same central idea, but in different words.
  - 3. False, twisted, or wrong central idea.
- (B) Those concerned with the details.
  - 4. Quote. Exact repetition of a detail.
  - 5. Same, or similar detail, but in different words.
  - 6. False, twisted, or wrong detail.
- (C) The one concerned with both central idea and details.
  - 7. Unrelated. Not given or implied.

Test 3: Practice Session<sup>15</sup>

Your attention please! This is a practice session. You should do this part of the test, but you will not be scored on it. We will use numbers 41, 42, and 43 on your answer sheets. (Pause)

Here is a very short passage. This is practice passage X.

There are a great many situations in which we listen. We go to church or synagogue and listen to the minister, priest or rabbi; we go to the movies and look and listen; we turn on the radio and listen; we participate in a conversation and we talk and listen; we sit in class and listen to lectures, etc., etc.

End of practice passage X. (Pause)

Put your "Responses Sheet" where you can easily refer to the "Shorter Statement of Responses". It is at the bottom of the page. (Pause) Practice statement number 41. The main idea of the passage is how to listen. Is this statement related to the passage you heard? Vaguely, yes. So the correct response cannot be number 7. (Pause) Is the statement about the whole passage or is it about one of the details in the passage? The statement said, "The main idea of the passage is how to listen." Therefore, there are two stated cues telling you that the statement refers to the

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<sup>15</sup> To be recorded.

central, controlling idea of the whole passage. These cues are the words "main idea", which is just another way of saying "central idea"; and the word "passage", which is the whole thing you heard. So, the statement is about the central idea, and not a detail. Therefore, the answer must be in response 1, or 2, or 3. (Pause) Is it a direct quotation of the central idea? No. So, response 1 is out. Is it a statement representing the correct idea of the entire passage? No, because the central idea of the passage was about the many situations in which we listen. Nothing was said about how to listen. So, response 2 is out. Is the statement a mis-representation of the central idea? Yes. So, we mark space 3. (Pause)

Practice statement number 42. "If we go to a pep-rally we listen to speakers". Ask yourself, "Is this statement related to the passage?" In a way, yes. It is another example, or detail, of one of the many situations in which we listen. So, response 7 is wrong. Is the statement about the whole passage? No, we already reached that decision when we decided that the statement was just another example or detail; so we know that our answer must lie in response 4, 5, or 6. Is it a quote of one of the details? No, pep rallies were not mentioned in the original passage. Therefore, the answer can't be response 4. But, does the statement suggest or imply a detail "truly" similar to those given in the passage? Yes, it is another similar detail.

So, we mark response 5, and wait for the next statement.

(Pause)

Practice statement 43. "There are a great many situations in which we listen". This is an exact repetition of a sentence in the practice passage. Does this quotation express the one, over-all controlling idea of the passage; or does it express one of the details? The quotation doesn't mention any details whatsoever; it is just a generalized statement of the main idea of the whole passage. Therefore you mark space 1 on your answer sheet.

This is the end of the practice session. (Pause)

Be prepared to listen to the passage for Test 3 titled, "Listening Can Be Taught".

Test 3: Passage<sup>16</sup>LISTENING CAN BE TAUGHT

One of the basic assumptions about the skill of listening is that listening can be taught. Following are brief summaries of two research studies testing that assumption:

In 1949, Professor Arthur Heilman did a study to measure the improvement of listening brought about by direct instruction. Heilman met students in the usual small classroom situation. The students received direct instruction in listening for six separate periods of about ten minutes each. Tests were given these 450 students before and after instruction. Results showed that the listening ability of college freshmen could be significantly improved through a program of training. Such training appeared to be particularly effective with those students whose listening ability was originally lower than average.

In the fall of 1950, Professor Charles Irvin conducted a study involving large groups of students at Michigan State College.

Seven ten-minute units of listening instruction were given to about half the freshmen students. The instruction was given in the regular large lecture situation. Students were tested prior to training and immediately afterward.

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<sup>16</sup> To be recorded at approximately 100 words per minute.



The 1400 students who received listening training did from 9 per cent to 12 per cent better than the 1400 who did not get training.

However, the major gains were made by those students who were classified as "poor" listeners at the beginning of the term. Over 50 per cent of the poor listeners who received training raised themselves from the category of "poor" up to the category of "above average"; while only 11 per cent of the poor listeners who did not receive training raised themselves to "above average".

From these two studies it appears that the assumption "listening can be taught", is a safe assumption to make.

End of Passage for Test 3.



Test 3: Items<sup>17</sup>

Number 1 on your answer sheet. "Heilman met students in the usual small classroom situation." (4)<sup>18</sup>

(20 second pause)

Number 2. The poorest listeners at the beginning of the term were the best listeners at the end of the term. (6)

(19 second pause)

Number 3. The assumption that listening can be taught is not substantiated by experiment. (3)

(18 second pause)

Number 4. Students who received training in listening improved more than those who did not receive training. (5)

(17 second pause)

Number 5. ". . . The major gains were made by those students who were classified as 'poor' listeners. . . ." (4)

(16 second pause)

Number 6. Training apparently increases listening ability. (2)

(15 second pause)

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<sup>17</sup> To be recorded.

<sup>18</sup> The correct response is indicated in parentheses after each item.

Number 7. It is now assumed that listening does not improve  
with training. (3)

(14 second pause)

Number 8. More studies should be made of listeners and  
listening. (7)

(13 second pause)

Number 9. Professor Heilman used about 1400 students. (6)

(12 second pause)

Number 10. Instruction can be given that will improve a  
person's ability to listen. (2)

(11 second pause)

11. Listening is a valuable activity in many learning situations. (7)

(10 second pause after this item, and all remaining items)

12. ". . . The assumption 'listening can be taught', is a  
safe assumption to make." (1)

13. Professor Charles Irvin directed a study at Michigan  
State College. (5)

14. It is possible to teach listening. (2)

15. "The students received direct instruction in listening  
for six separate periods of about 10 minutes each." (4)

16. It is universally known that most students are poor listeners. (7)

17. The purpose of the passage was to improve your listening. (3)

18. Professor Irvin tested his 450 students before and after training. (6)
19. The students meeting in the regular classroom received a total of about 60 minutes of instruction. (5)
20. Listening ability is caught rather than taught. (3)
21. Some students improve in listening skill without instruction. (5)
22. "One of the basic assumptions about the skill of listening is that listening can be taught." (1)<sup>19</sup>
23. "Following are two research studies testing that assumption." (4)
24. There are many different ways and techniques of teaching listening. (7)
25. We can probably learn to listen more effectively. (2)
26. Both large and small groups of students received the same amount of listening instruction. (6)
27. We should acquire the habit of good listening. (7)
28. Irvin's students received a total of about 70 minutes of instruction. (5)
29. The only way we can improve listening is by instruction. (3)
30. Listening can be learned through competent instruction. (2)

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<sup>19</sup> This item gave a positive discrimination in the classroom trial, but a negative discrimination in the laboratory trial. See Chapter V.

31. "The instruction was given in the regular, large lecture situation." (4)
32. In one experiment the students received direct instruction; in the other they received indirect instruction.  
(6)

(10 second pause)

This is the end of Listening Test 3.

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## BIBLIOGRAPHY

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## APPENDICES

## APPENDIX A

### A DESCRIPTION OF TESTS USED TO MEASURE LISTENING COMPREHENSION

Because no previous study has brought together accurate detailed descriptions of these many differing instruments used to measure listening comprehension, the writer has attempted as complete a record as he was able, both for his own knowledge and for students doing research in the future.

The tests described here have been classified according to two major divisions (A) Studies in which the development of a test of listening comprehension has served as a relatively minor part of the total research; and (B) Studies in which the development of a test of listening comprehension has been of relatively important or major concern.

In both sections of the literature surveyed, a description of the test has been given, together with such information as was available concerning the method of administration, and analysis of the test. Whenever the literature reviewed reported analyses to determine reliability or to establish validity, the results have been included in this summary.

This summary omits studies concerned primarily with persuasive material, shift-of-opinion, note-taking vs. no note-taking, and those whose objective was aesthetic listening as being largely outside the limits of the present study of measuring the listening comprehension of expository lecture material.



A. Studies in Which the Development of A Listening  
Comprehension Test has been a Relatively  
Minor Part

1. Tests Based on Adaptations of Silent Reading and  
Vocabulary Tests:

Anderson and Fairbanks<sup>1</sup> give a report of their listening test in the following manner:<sup>2</sup>

An unselected sample of 50 items from Form B of the Inglis Tests of English Vocabulary was recorded phonographically and used to test hearing vocabulary. The test was recorded as follows: A trained speaker read the standard sentences of expression and after an interval of three seconds repeated this reading, substituting the first comparison word for the italicized word; then, after an interval of five seconds, the original expression was read again, followed in three seconds by the same expression with the second comparison word substituted; after another interval of five seconds this procedure was repeated for a third comparison word and so on for all five words. Fifty items, separated by five second intervals, were recorded in this way. High grade phonograph records were secured.

After hearing each pair of sentences or expressions in each item, the subjects were instructed to record S if they believed the statements to be the same in meaning, or D if they believed them to differ in meaning. Special recording blanks were used. The subjects were further told that only one pair of the five sentences of expressions in each item was correct.

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<sup>1</sup> Irving H. Anderson and Grant Fairbanks, "Common Differential Factors in Reading Vocabulary and Hearing Vocabulary," Journal of Educational Research, 30 (January, 1937), 317-324.

<sup>2</sup> Ibid., 318.

The reported odd-even reliability of the test was .64; this coefficient was raised to .73 by the Spearman-Brown "prophecy" formula.

Burton<sup>3</sup> also used a standardized test: Forms X and Z of:

. . . the Survey Test of Vocabulary. . . by L. J. O'Rourke. Each of the hundred items in this multiple choice test is presented in the form of a sentence or expression, after which there are five words. . .<sup>4</sup>

The subject marks the number of the word similar to the underlined or emphasized word.

. . . The test of vocabulary was presented orally. A sentence or expression was read, the word emphasized, then the word repeated. Five choices were given. Students marked the number of the correct word.<sup>5</sup>

Goldstein,<sup>6</sup> although he did some very carefully controlled work on rates, nevertheless used an adaptation of The McCall-Crabbs Standard Test Lessons in Reading. Goldstein had general narrative and descriptive passages from these tests recorded on discs by a trained speaker. Printed questions on the passages were used.

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<sup>3</sup> Mary Burton, "The Hearing and Reading Comprehension of Vocabulary Among High School Seniors", School Review, 52 (January, 1944), 47-50.

<sup>4</sup> Ibid., 48.

<sup>5</sup> Ibid., 48.

<sup>6</sup> Harry Goldstein, Reading and Listening Comprehension at Various Controlled Rates, Contributions to Education, No. 821, Bureau of Publications, Teachers College, Columbia University, N. Y., 1950, 69 pp.

. . . Each passage is followed by approximately ten multiple-choice questions. The questions are so worded that careful reading of the passage is necessary. However, some of the questions cannot be answered correctly by detailed reading only. It is necessary to understand the selection as a whole, and be able to recognize its parts, and even to draw inferences from facts not overtly stated. . .<sup>7</sup>

Concerning the validity of the test, Goldstein says:

If standardized measures are valid criteria, the test scores for films and records are satisfactory indices of reading and listening comprehension.<sup>8</sup>

The reliability of the tests to measure listening ability was .80 (corrected to .89).

Johnson<sup>9</sup> used a previously developed reading test. He says:

The listening tests were recorded abridged forms of the American Council on Education Cooperative English Test on Reading Comprehension (C2). Only a part of the comprehension sections of each of the forms T, R, and Q were used.<sup>10</sup>

Larsen and Feder<sup>11</sup> also used a standardized reading test. Passages from the Nelson-Denney Silent Reading Test were presented orally to students.

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<sup>7</sup> Ibid., 11.

<sup>8</sup> Ibid., 55.

<sup>9</sup> Kenneth O. Johnson, "The Effect of Classroom Training Upon Listening Comprehension," Journal of Communication, I (May, 1951), 57-62.

<sup>10</sup> Ibid., 59.

<sup>11</sup> Robert P. Larsen and D. D. Feder, "Common and Differential Factors in Reading and Hearing Comprehension", Journal of Educational Psychology, XXXI (April, 1940), 241-252.

The odd-even reliability of the test was .79.

Sims and Knox<sup>12</sup> also used a standardized test: Four forms of the Thorndike Test of Word Knowledge. This 100 item five-response test was administered to grades nine through twelve.

Students were given a sheet of paper with numbers. Students were also given oral instructions as follows:

Listen carefully to the first word I read, then listen to the other three (four, five) words used. One of the last three (four, five) means the same or about the same as the first word.<sup>13</sup>

Each list of words was read twice; then students wrote the word on the numbered paper they had received.

The writers indicate that the reliability was tested by the split-half method and corrected by the Spearman-Brown formula. Validity was determined by correlating with the visual test.<sup>14</sup>

## 2. Test Based on Classroom Lectures:

Corey<sup>15</sup> gave a carefully delivered lecture on the sub-

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<sup>12</sup> V. M. Sims and L. B. Knox, "The Reliability and Validity of Multiple-Response Tests When Presented Orally", Journal of Educational Psychology, XXIII (December, 1932), 656-662.

<sup>13</sup> Ibid., 657.

<sup>14</sup> Ibid., 659, 660.

<sup>15</sup> Stephen M. Corey, "Learning from Lectures vs. Learning from Readings", Journal of Educational Psychology, 25 (September, 1934), 459-470.

ject of outlining. The college students were told that they were not to take notes and that they would have an immediate recall test following the lecture.

"The test used was a semi-objective, true-false, completion and short answer type. . ."<sup>16</sup>

Reliability of the test according to the Spearman-Brown prophecy formula was reported as .779.<sup>17</sup>

Greene<sup>18</sup> used a typical college lecture on the subject matter common to elementary psychology classes. Following the lecture students answered printed questions of a completion or true-false type. Although tests were reported as "speeded", Greene indicates that they were so arranged as to let practically everyone finish.<sup>19</sup>

Reliability coefficients, using the Brown-Spearman formula averaged about .50 for the completion tests, and .41 for the true-false tests.<sup>20</sup>

To determine the validity of the tests, Greene states that he submitted the tests to two or three instructors who

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<sup>16</sup> Ibid., 459.

<sup>17</sup> Ibid., 465.

<sup>18</sup> Edward B. Greene, "The Relative Effectiveness of Lecture and Individual Reading as Methods of College Training," Genetic Psychology Monographs, IV (December, 1928), 457-563.

<sup>19</sup> Ibid., 474.

<sup>20</sup> Ibid., 475.

were familiar with short answer test methods.<sup>21</sup> Later he asked students to "express confidence ratings" of their answers.<sup>22</sup>

Loder<sup>23</sup> with his eighth grade pupils used a series of talks on the subject of narcotics, and built 100 question true-false printed tests.

The test analysis was carried out in the following manner:

In order to eliminate errors all tests and their directions were carefully checked by several persons in the field of tests and measurements.<sup>24</sup>

Russell<sup>25</sup> prepared about 1000 words on the subject of the mongoose adapted to the level of children in the fifth, seventh, and ninth grades. In the listening phase of the study, the teacher read the material to the pupils.

The knowledge gained was measured on two tests: one of an essay type, and the other true-false.

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<sup>21</sup> Ibid., 475.

<sup>22</sup> Ibid., 503.

<sup>23</sup> Edwin J. Loder, "A Study of Aural Learning With and Without the Speaker Present", Journal of Experimental Education, VI (September, 1937), 46-60.

<sup>24</sup> Ibid., 47.

<sup>25</sup> R. G. Russell, "A Comparison of Two Methods of Learning", Journal of Educational Research, XVIII (October, 1928), 235-238.



Stump<sup>26</sup> was interested in checking whether oral true-false tests were as satisfactory as printed true-false tests. The tests covered subject matter included in several regular college classes in Elementary Educational Psychology and High School Tests and Measurement. In presenting the oral test the questions were read slowly and distinctly. Each statement was read twice.

Stump says that "No attempt is made in this study to prove the validity of the true-false examination as a test of school achievement."<sup>27</sup>

Young<sup>28</sup> developed a series of 350-800 word passages suitable for grades four, five and six. The materials consisted of descriptions of industrial processes, nature science, hero stories, and narrative poems. In the listening part of the study, the teacher read the selection to the students. Immediately after presentation of each selection, the teacher tested the pupils.

One test of thirty items was used. The first twenty or so items were questions calling for short definite answers. These items formed a recall test.

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<sup>26</sup> N. F. Stump, "Oral Versus Printed Method in the Presentation of True-False Examination", Journal of Educational Research, XVIII (December, 1928), 423-424.

<sup>27</sup> Ibid., 428.

<sup>28</sup> William E. Young, "The Relation of Reading Comprehension and Retention to Hearing Comprehension and Retention", Journal of Experimental Education, V (September, 1936), 30-39.



The last ten or so items were multiple-choice units of three responses each. Whereas the recall items usually dealt with specific bits of knowledge, the multiple-choice units were concerned with general impressions, deductions, etc. . . .<sup>29</sup>

The reliability of the tests is reported as ranging from  $.87 \pm .018$  to  $.92 \pm .012$ . Validity, as determined by correlation with reading tests is reported to range from .54 to .67.<sup>30</sup>

### 3. Tests Based on Special Types of Material or Utilizing Special Situations:

#### (a) Phonograph records and films:

Nelson and Moll<sup>31</sup> were primarily interested in determining the "relative contributions to learning of the audio and video elements in some typical instructional films." Two sound-films were used on the subject of aerodynamics, and one on survival under desert conditions.

In both studies, tests containing multiple-choice items with four alternatives were used. . . .

Some of the items in each test were based on material in the visuals, others were based on the commentary, and items in a third group were based on information to

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<sup>29</sup> Ibid., 31.

<sup>30</sup> Ibid., 32.

<sup>31</sup> Harold E. Nelson and Karl R. Moll, "Comparison of the Audio and Video Elements of Instructional Films", Journal of Communication, I (Mary, 1951), 62-66.

be found in both the video and audio elements of the films.<sup>32</sup>

The authors report that the items were pre-tested, analyzed, and examined by subject-matter experts.

Roulon<sup>33</sup> and his associates designed tests to measure "factual and relational knowledge" of the content material covered in the recordings and similar reading material published for high school students.<sup>34</sup> The tests consisted of twenty-five true-false items, and two 5-item sequence exercises.

(b) Informative speeches:

Knower, Phillips, and Koepfel<sup>35</sup> were concerned primarily with improving speaking ability, but their evaluation lead them into the development of a listening test of specific subject matter.

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<sup>32</sup> Ibid., 63.

<sup>33</sup> Phillip J. Roulon and others, "A Comparison of Phonographic Recordings with Printed Material in Terms of Knowledge Gained Through Their Use Alone", Harvard Educational Review, XIII (January, 1943), 63-76.

<sup>34</sup> Ibid., 68.

<sup>35</sup> Franklin H. Knower, David Phillips, and Fern Koepfel, "Studies in Listening to Informative Speaking", Journal of Abnormal and Social Psychology, 40 (February, 1945), 82-88.

The informative speeches were based on three aspects of a beginning college physics course. "A 40-item multiple-choice test was formulated for each speech."<sup>36</sup>

"The three tests had odd-even reliabilities of .92, .88, .91 respectively."<sup>37</sup>

The validity of the tests was determined by giving them to students who had not taken the physics course, and those who had just completed the course. A significant difference was found between those groups.

(c) Trade names:

Stanton<sup>38</sup> was interested only in checking whether his subjects could remember the fictitious trade names they had heard and read. He used printed tests composed of lined sheets of paper. The three types of tests were pure recall, which asked students to list the trade names; aided recall, which was a type of completion test; and recognition, which was a sort of check list of trade names presented for identification.<sup>39</sup>

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<sup>36</sup> Ibid., 82.

<sup>37</sup> Ibid., 82.

<sup>38</sup> Frank N. Stanton, "Memory of Advertising Copy Presented Visually vs. Orally", Journal of Applied Psychology, XVIII (February, 1934), 45-64.

<sup>39</sup> Ibid., 51-52.

(d) Material from recent books:

Selover and Porter<sup>40</sup> developed a very simple type of listening test which had as its purpose the measurement of how well a subject could recall material that had been read to him.

. . . The test is composed of 100 multiple choice items which are answered by indicating yes, no, or did not say, after the first six pages of a recent book have been read [to him].<sup>41</sup>

(e) Lists and columns of words:

Kreuger<sup>42</sup> used two types of tests. The first which he refers to as the "Minnesota Test" is an unpublished test developed by Ralph Nichols of the University of Minnesota. The test consists primarily in directions: The subject has lists of words, etc., before him. He then receives oral directions to locate a specific word in much the same way that Heilman's subjects located geometric figures.

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<sup>40</sup> Robert B. Selover and James P. Porter, "Prediction of the Scholarship of Freshman Men by Tests of Listening and Learning Ability", Journal of Applied Psychology, XXI (October, 1937), 583-588.

<sup>41</sup> Ibid., 583.

<sup>42</sup> David H. Kreuger, "A Study of the Results of Teaching Factors of Listening Comprehension to College Freshmen in the Basic Communication II Course", Unpublished M.A. Thesis, Whittier College, 1950. 176 pp.

Kreuger also developed a seven minute lecture on the subject of pure-tone audiometers; and followed this with ten true-false mimeographed questions.<sup>43</sup>

(f) Specially selected words, phrases, sentences:

Carver<sup>44</sup> carried out a series of experiments, four of which involved the measurement of listening.

Experiment I: Recall of Disconnected Materials Presented Visually and Aurally.

Six series of nonsense syllables, numbers, and words, containing ten numbers each were used in this experiment. . . . Additional memory material was employed in the form of sentences, including five short and five long specific statements, five short and five long general statements. All of the sentences used were easy and typical of everyday conversation.

All instructions were given orally by the writer. The subjects were always told in advance what the mode of presentation would be. When the auditory presentation was concluded the announcer always said, "The end." The subjects were instructed in advance to write down immediately the items they were able to recall or otherwise to react to the material in some specified manner. . . .<sup>45</sup>

Experiment II: Recognition of Material Presented to the Eye and to the Ear.

The material for this experiment consisted of two series of sentences. The first was designated as the original series, the second as the test series. The original series contained a list of 17 commonplace

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<sup>43</sup> Ibid., 33-36.

<sup>44</sup> Merton E. Carver, "Listening Versus Reading", Chapter IX, 159-180, in Hadley Cantril and Gordon W. Allport, The Psychology of Radio, Harper and Brothers, N. Y., 1935.

<sup>45</sup> Ibid., 162.

sentences of varying lengths. The test series contained 15 sentences, always presented to the subjects in printed form. In the test series certain sentences were repeated exactly as they had been given in the original series, certain sentences were omitted altogether, some new sentences were added, and in some sentences one single important word was altered. . . . Illustration

(Original Series)

My friend was waiting on the corner.

A growing child is constantly forming more bone, more muscle, and more blood.

(Test Series)

Do you think each of the sentences below is similar to any sentence you have just read (or heard)? Check your opinion. If only one word in the sentence has been changed UNDERLINE that WORD.

A growing child is constantly in need of more food, more exercise, and more fresh air.

\_\_\_\_\_ exactly the same  
 \_\_\_\_\_ same idea worded differently  
 \_\_\_\_\_ not read before

My friend was waiting on the corner.

\_\_\_\_\_ exactly the same  
 \_\_\_\_\_ same idea worded differently  
 \_\_\_\_\_ not read before

. . . The auditory presentation was given over the radio. The sentences were spoken at a uniform rate with an even emphasis. A short pause occurred between sentences. When the series was concluded, the announcer said, "the end", and the subjects turned immediately to the test series.<sup>46</sup>

### Experiment III: Comprehension of Connected Meaningful Material.

Paired samples of connected meaningful passages together with sets of directions were selected with the help of judges. This collection included passages of a narrative, descriptive, abstract, and explanatory type. . . .

To test the subjects' comprehension, an objective test (true-false or completion) was employed in many

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<sup>46</sup> Ibid., 169.

instances. At other times short essay tests were used. . . .<sup>47</sup>

Experiment IV: (Carver's No. VII) 'Comprehension' of Meaningful and Fictitious Words.

Two lists of words were prepared. Each list was composed of twenty meaningful words and five non-meaningful or fictitious words (jokers) which were made to appear as plausible as possible. . . .<sup>48</sup>

Subjects were asked to make one check mark if they had seen or heard the word before; two check marks if they thought they could define the word; and three if they were sure they could define the word.

(g) Material not given:

Erickson and King<sup>49</sup> merely indicate that "Questions were immediately furnished each pupil on mimeographed sheets."<sup>50</sup>

Spache<sup>51</sup> gives no report on the nature of his test. He does mention that it tests for main ideas and details,

<sup>47</sup> Ibid., 171.

<sup>48</sup> Ibid., 176.

<sup>49</sup> C. I. Erickson and Irving King, "A Comparison of Visual and Oral Presentation of Lessons in the Case of Pupils from the Third to the Ninth Grades", School and Society, VI (August, 1917), 146-148.

<sup>50</sup> Ibid., 146.

<sup>51</sup> George Spache, "The Construction and Validation of a Work-Type Auditory Comprehension Reading Test", Educational and Psychological Measurement, X (1950), 249-253.

and that the reliability of the test as determined by the Spearman-Brown formula is .788.<sup>52</sup>

B. Studies in Which the Development of A Listening  
Test was A Significant or Major Part

Rankin<sup>53</sup> (1930) appears to be the first person who was interested in measuring listening itself rather than for purposes of some other related problem. He first used the Detroit Reading Test, but discarded it because he felt that it was neither designed primarily to measure listening nor was it a real life listening situation.<sup>54</sup> He later developed what he considered a more satisfactory test to measure listening ability.

After some preliminary statements, designed to make the pupil conscious of the importance of ability to understand what he hears, the examiner says:

"A number of you have taken part in meetings, like class meetings, where a decision had to be made. Of course, the reason for meeting together is to listen to the idea of everyone in the group for the purpose of picking out the best idea. Each person needs to understand just what everyone else contributes to the discussion. Otherwise one can not vote intelligently.

"Today the examiner is going to tell you what each boy and girl in a certain sixth grade said at his class meeting. Pretend you are a member of that class. Lis-

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<sup>52</sup> Ibid., 251.

<sup>53</sup> Paul T. Rankin, "Listening Ability, II, Its Importance, Measurement, and Development", Chicago Schools Journal, XII (June, 1930), 417-420.

<sup>54</sup> Ibid., 418.



ten to what is said, so that you can vote wisely on the best scheme. Listen to every speech, trying to hear just what idea is being proposed by the speaker. In order to check on how well you understand each speaker, the examiner will ask a question after each speech, and will suggest four possible answers, one of which is right. You are to choose the right answer from these four, and write it down. Finally you are to vote for what you think is the very best plan suggested."

The introductory remarks of the chairman are used as the practice test.

"The other day Miss Jones told us that this was to be our room and that we could decorate it any way we pleased. This is a new building and so the room has wonderful possibilities. We are having this meeting today to decide what we shall do first. Each one of you may tell what he would prefer to have for decoration. Emily will write them on the board so that we can easily remember all of the suggestions. When you give your suggestion, please give your reason for it.

"The question;

'What was the reason for the meeting?'

1. To complain about the bare room
2. To ask for a more cheerful room
3. To decide how to decorate the room<sup>55</sup>
4. To have Emily write on the board."

Rankin calls particular attention to three points about the test:

(1) The presence of a fairly real purpose on the part of pupils for the entire listening period; (2) the fact that the material was designed to be spoken, not written; . . . (3) the fact that the question on each speech relates directly to the contribution of that speech to the general argument, and thus tests what a good listener should understand in that situation.<sup>56</sup>

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<sup>55</sup> Ibid., 419.

<sup>56</sup> Ibid., 419.

Although Rankin observed the relationship of some thirty-two items of the Stanford Revision of the Benet Examination to listening, and made some correlations of listening with the Detroit Alpha Intelligence Test, and some correlations with reading and vocabulary tests, he makes no mention of an item analysis of this first listening test.

Sullivan<sup>57</sup> (1937) was primarily interested in reading, but this interest lead her to develop a test of auditory comprehension for children. She expressed the opinion that auditory comprehension would serve as a better criterion of reading ability than group tests of intelligence.

. . . It is the purpose of this thesis to construct a reliable measure of auditory comprehension adapted to the group testing of children in the age ranges of seven to twelve. . . .<sup>58</sup>

In the present test it was decided to measure the child's hearing comprehension by allowing him to identify in pictures the words spoken by the examiner. . . .<sup>59</sup>

There are several parts to Sullivan's test. Those pertinent to the present study are:

# 1. The Auditory Vocabulary Test

Seventy-five items. . . were assembled. . . . The groups of eight pictures with the alternate choices and

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<sup>57</sup> Helen Blair Sullivan, "The Construction and Evaluation of a Measure of Auditory Comprehension", Unpublished M.A. Thesis, Boston University, 1937. 44 pp.

<sup>58</sup> Ibid., 5.

<sup>59</sup> Ibid., 7.

five stimulus pictures were organized on two successive pages of tests. The child's record of answers was made by placing the number of the picture beside an appropriate letter in the margin of the test. . . .

## 2. The Auditory Comprehension of Paragraphs

The groups of fifteen pictures each, serving as the multiple choice answers to the questions on the paragraph test were arranged four to a page, and covered three pages. . . . The child's response was again indicated by putting the appropriate number in brackets designated for each question.<sup>60</sup>

The reliability of the first test (corrected by the Spearman-Brown formula) was forecast as .966; and the corrected reliability of the second test was reported as .938.<sup>61</sup>

Nichols<sup>62</sup> (1948) appears to be the first person to make a careful and controlled attempt to build a test of listening ability. Under the heading "Test Construction and Refinement"<sup>63</sup> he says:

Two hundred college freshmen, drawn from the freshman communications courses on the St. Paul Campus of the University of Minnesota, were chosen as the population to be tested. . . . [They] were chosen in a fashion calculated to insure the use of a typical cross-section of the enrollments in those courses.

Ten-minute excerpts were taken from full-period lectures normally given to various freshmen classes at the University of Minnesota. Six different subject-matter areas were selected in order to neutralize the

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<sup>60</sup> Ibid., 41.

<sup>61</sup> Ibid., 43-44.

<sup>62</sup> Ralph G. Nichols, "Factors in Listening Comprehension", Speech Monographs, XV (No. 2, 1948), 154-163.

<sup>63</sup> Ibid., 155-156.

advantage which would accrue to listeners who had already had college training in one or two of them. The chosen areas were literature, economics, biology, sociology, psychology, and chemistry. The faculty members contributing the lectures from which the excerpts were drawn are regular instructors at Minnesota.

To test the listener's comprehension of the material presented, twenty multiple-choice questions were constructed to cover the content of each of the lecture excerpts. After the test battery had been administered to the selected test population of 200, a complete item analysis was made. To avoid weighting any of the six parts of the battery, seventy-two of the original 120 items were retained, or twelve of the twenty items originally composing each of the sub-tests. The discriminating power of the seventy-two retained items was determined through the use of the Flanagan table of the values of the Pearson product-moment coefficient of correlation in a normal bivariate population corresponding to given proportions of successes. The median coefficient of correlation of the seventy-two retained items, indicative of discriminating power, was found to be .36. Only one item of the seventy-two retained had a coefficient of correlation of less than .20. Ten of the seventy-two retained items had coefficients of correlation of .50 or above. The test was slightly easier than would be the ideal examination, the items tending to cluster about the 60 per cent difficulty level more than about the 50 per cent difficulty level.

The listening test for all further analysis and consideration of comparative performances was composed of the seventy-two retained items. Its reliability was computed through the use of the Kuder-Richardson formula and was found to be .802. The original examination papers were re-scored upon the basis of the seventy-two retained items. The scores thus computed were thereafter used as indicative of the listening comprehension of the 200 subjects in the test population.

Prince<sup>64</sup> (1948) conducted what she called an "exploratory study". The first purpose of the study was to devise means of measuring classroom listening effectiveness.

The measurements of listening were achieved in the following manner:

#### 1. Test on Ability to Understand Assignments

The instructor gave a series of four assignments at one time. The assignments covered periods of time from one day to three weeks. Students were told that perhaps they should take notes on the assignments. No other instructions about understanding the assignment process itself was given. The next day the assistant announced that in order to make sure that everyone in the class had understood the assignments that had been given the day before, each person was requested to write briefly what he understood the assignments to be. Students were free to consult their notes. No indication was given that the papers were to be used as a listening check. From the shorthand transcription of the instructor's talk giving the assignments, the essential points for each assignment were listed by the investigator.<sup>65</sup>

The student papers were scored according to the number of essential points agreeing with the shorthand transcription.

#### 2. Tests on Student Speeches

Four times during the quarter students were tested on three aspects of a talk given by one of the student speakers.

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<sup>64</sup> Bernice L. Prince, "A Study of Classroom Listening Effectiveness in Basic Communication and its Relationship to Certain Other Personal Factors", Unpublished M.A. Thesis, University of Denver, 1948. 93 pp.

<sup>65</sup> Ibid., 31.

These aspects included (a) content retention, described as similar to "comprehension" in reading tests; (b) inferences, the ability to draw conclusions; and (c) main or whole idea.

Prince states that regular use of recording of speeches, and making out of tests on various speakers did not permit the students in the class to know that the material was being gathered as a measure of listening effectiveness.

Scores on these listening tests were determined in various ways.

### 3. Goldstein Test

The recorded Goldstein test at the rate of 100 words per minute was administered and scored.

### 4. Subjective Judgment of Overt Listening Behavior as Indicated by Use of a Listening Profile Sheet

A listening profile sheet consisting of eight general descriptive types of listeners was developed. Labeled "participator, subdued, bored, distracted, intense, irrepressible, polite, and blase."<sup>66</sup>

Subdued is described as:

Gives impression of a very quiet personality, facial expression does not change very much. Seems to be some tension, almost as though ready to defend himself against attack at any time. In humorous situations smiles slightly but not wholeheartedly -- maybe a little cynically. Does not ordinarily look at other members of the class while listening.<sup>67</sup>

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<sup>66</sup> Ibid., 38, 39.

<sup>67</sup> Ibid., unnumbered pages of Appendix.



Prince carried on a great many other studies, but they are not related to the present study.

Brown<sup>68</sup> (1949) says of his study:

. . . Based on the hypothesis that listening, as reading, is a composite of relatively discrete skills, ten specific skills or factors were chosen for measurement. Both receptive and reflective listening skills were included and both natural and artificial listening test situations explored. Listening accuracy was directly explored in terms of (1) getting lecture details, (2) following a sequence of details in the form of oral directions, and (3) keeping a series of details in mind until questioned. Thoughtful or critical listening was directly explored in terms of (1) getting the central ideas, (2) drawing inferences, (3) distinguishing relevant from irrelevant material, (4) using contextual clues to determine word meanings, (5) using transitional elements as aids to understanding the organization and relationship between main and subordinate points, and in terms of (6) an impressionability and (7) a rationalizing index.

These particular factors were selected on the basis of (1) the most recent pronouncements of the Commission on the English Curriculum of the National Council of Teachers of English, (2) the conclusions reaches by Nichols in his study of factors in listening comprehension, (3) diagnostic tests in the field of silent reading and reading comprehension, and (4) the opinion of eleven experts, chosen largely from among the members of the Vertical Committee on Listening of the National Council of Teachers of English.<sup>69</sup>

The following pages give both a quoted description of the several aspects of the test, and one selected question as an example of that aspect of the test.

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<sup>68</sup> James I. Brown, "The Construction of A Diagnostic Test of Listening Comprehension", Unpublished Ph.D. Thesis, University of Colorado, 1949. 184 pp.

<sup>69</sup> From an abstract of his study sent to the present writer.



Section I of the test has six parts.

Part 1 serves both as orientation and as an attempt to get a "Rationalization Index". A sample advises students as follows:

. . . Sometimes you will be asked to rate your agreement or disagreement to something as in the next items. Enter the number that indicates your opinion, a 1 if you agree strongly, 2 if you agree somewhat, 3 if you are undecided, 4 if you disagree, and 5 if you disagree strongly. Rely on your first impressions and work as rapidly as possible. Here's the first statement to rate:

6. All men are created equal. Enter the number indicating your degree of agreement or disagreement after number 6 on your answer sheet. . . .<sup>70</sup>

Part 2. Ability to follow details in the commonly met form of oral directions:

Listen carefully to the following directions which concern the row of eight numbers at the left of your answer sheets under Part 2. Be sure to answer every item. Work rapidly.

22. Subtract the smallest even number from the largest number in the row of numbers mentioned, and enter half that result after number 22 in the answer column. . . .<sup>71</sup>

Part 3. Ability to keep a series of details in mind until questioned:

Now let's try Part 3, Thinking Back. Often in the process of listening it is necessary to think back to something just said or to keep certain things in mind as a speaker goes on to make comparisons. This part will measure how well you do that.

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<sup>70</sup> James I. Brown, "The Construction of A Diagnostic Test of Listening Comprehension", op. cit., 144.

<sup>71</sup> Ibid., 145.

43. In the series of numbers, 5 8 4 1 6, what is the second number? Enter ~~that~~<sup>72</sup> number in the answer column after number 43. . . .

Part 4. Ability to make intelligent use of contextual cues in getting word meanings:

Did you ever stop to think how many different meanings the same word may have? For example. . . . A good listener is one who makes full use of contextual clues to discover the meaning of strange words or familiar words used in a strange sense. . . .

The first five words along the left of your answer sheet under Part 4 are followed by five correct dictionary definitions of that word. The context governs which of the meanings is intended. I shall read you a sentence and you are to select the meaning which best defines the word in that sentence context. Enter the number of the word chosen, in the answer column.

65. In the sentence: Because Tom Sawyer didn't get along very well in school, people thought he was dull, which choice best defines the word dull -- stupid, unfeeling, listless, blunt, or tedious?<sup>73</sup> Put the number of that choice in the answer column.

Part 5. Ability to use transitional elements as aids to a speaker's organization:

For the next items you are to listen to each sentence for a word that marks the organizational pattern, a listening road sign, so to speak. There are certain words that can either point ahead to what is to be said or back to what has already been said. Often the same word points in both directions. For example, when you turn on the radio and hear someone say, "The final reason. . . ." the word final lets you know that other reasons have already been given and that one last reason is about to be discussed. . . . Enter the one word in each of the following sentences which appears to have

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<sup>72</sup> Ibid., 147.

<sup>73</sup> Ibid., 149.

that for its chief function. If there is no such word, enter the word none in the answer space. . . .

98. To summarize what has been said: procrastination is at the root of the difficulty.<sup>74</sup>

Part 6. An attempt to get an impressionability index. Emotionally loaded words were added to the statements used in Part 1.

Strength of opinion. It is thought by some that this may relate to general listening efficiency. Check your degree of agreement or disagreement with the following statements, using the same rating scale you used for Part 1. . . .

114. What do you think of this silly idea: chess playing develops one's powers of concentration?<sup>75</sup>

Section II of the test was based on a fifteen minute lecture on the subject of "How to Increase Your Vocabulary", adapted from the Reader's Digest.

Part 1. Getting the Details.

First, we'll see how well you got the details. The choices on your answer sheet, often in shortened form, are to serve as memory aids as you listen carefully to the reading of questions and are not intended to be read apart from the listening situation. Try to answer every item.

1. The Lincoln story mentioned a calf, dog, **steer**, cow, or horse. Indicate the correct answer by entering the number of the correct response. . . . Do not write the word, only the number identifying the word.<sup>76</sup>

Part 2. Getting the Central Idea.

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<sup>74</sup> Ibid., 153.

<sup>75</sup> Ibid., 154.

<sup>76</sup> Ibid., 164.

Sometimes we can't see the forest for the trees. And sometimes we miss the main ideas because of the details. The next part, Part 2, will measure how effectively you get the central ideas.

27. Which main division was most important - the first, second, third, fourth, or fifth?<sup>77</sup>

### Part 3. Depth of Understanding.

Depth of understanding enables us to transcend the exact limits of what was actually said and see meaningful new relationships and the implications and inferences that grow out of that material. . . .<sup>78</sup>

The next items are to **mark** True or False by circling the T or F in the answer column.

59. Paderewski would probably consider desirable vocabulary growth as:

being natural and effortless - true or false

60. requiring special effort

61. being hastened by special effort

62. requiring above average intelligence<sup>79</sup>

### Part 4. Relevancy.

In most lectures and articles there are things both directly and indirectly related to the central idea. In the following groupings you are to decide which item in the group is most directly and closely related to the central idea of the lecture, How to Increase Your Vocabulary. Circle the one letter in each group which identifies the most relevant item.

102. A. Snake story

B. Uncle George story - which is more relevant,

A or B?<sup>80</sup>

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<sup>77</sup> Ibid., 166.

<sup>78</sup> Ibid., 167.

<sup>79</sup> Ibid., 168.

<sup>80</sup> Ibid., 170.

Brown gave careful consideration to the construction of his test and constructed a preliminary form, tried it out with numerous groups and made item analyses and revisions in the trial form before running his final test.

Attempts were made to insure validity through correlations with various other factors commonly used.

Reliability, determined by the use of split-half and the Pearson-Brown formula was .810 for Section I, and .647 for Section II for the college population.

Harwood<sup>81</sup> (1950) investigating the "relationships between written and spoken language of various levels of predicted silent reading difficulty", developed a test of listening comprehensibility.<sup>82</sup>

Seven sample "stories" adapted from radio, press and other sources were recorded by a trained speaker. Prior to the final recording, nineteen judges selected one speaker from a trial group of four. This one speaker seemed "to read most like the reading of an average trained speaker."<sup>83</sup> Each story was exactly three hundred words in length; and was timed to be presented in exactly two minutes. One hun-

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<sup>81</sup> Kenneth Albert Harwood, "An Experimental Comparison of Listening Comprehensibility with Reading Comprehensibility", Unpublished Ph.D. Thesis, University of Southern California, 1950, 157 pp.

<sup>82</sup> Ibid., 2.

<sup>83</sup> Ibid., 44.

dred and five printed questions (fifteen for each story) with five-choice answers were distributed to students in answer booklets. After hearing, the recorded "story", the subjects saw and answered the questions. Subjects were given two minutes to answer the questions on each of the seven sections of the test. Total test time was planned at thirty minutes so that it might easily fit a fifty minute class period.

Although questions are stated to have a narrow range of difficulty, no mention appears to be made of an item analysis of the questions nor of the reliability of the tests.<sup>84</sup>

The Nashville Public Schools<sup>85</sup> (1950) in building a twelve year program in the language arts, wished to devote to listening the emphasis they felt its importance in life today required. They conducted a survey of listening abilities of their pupils as a preliminary part of the curriculum study.

In the absence of any standardized tests appropriate for the purposes, the materials were developed by committees of teachers who worked at the levels at which they teach. There were committees for the primary, the elementary, the junior high, and senior high levels.

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<sup>84</sup> Ibid., 91.

<sup>85</sup> "Listening Abilities of Pupils in the Nashville Public Schools, A Survey: Grades 1-12", Nashville Public Schools, Nashville, Tennessee, September, 1950. The material reported herein was received from Miss Lalla A. Walker in either mimeographed form or personal letter form.



The committees attempted to see that each test met the standards of interest and proper grade-level difficulty for which it was produced.

After the tests were developed, they were tried out with a representative cross section of pupils. In the light of the results, they were revised and tried out again before being processed for general use.

The listening tests and companion reading tests were developed on three types of material: narration, exposition, and directions.

Each test was composed of a short selection<sup>86</sup> to be read or heard, followed by ten questions to be answered True, False, or No Information. These questions were designed to test the following abilities:

1. To get the main idea (question 1)
2. To understand a context clue (question 2)
3. To catch general significance (question 3)
4. To understand time sequence (question 4)
5. To remember details (questions 5-8)
6. To draw inferences or conclusions (questions 9-10)

The listening materials were recorded and played for pupils. When the recording was completed the teacher said,

"Listen carefully while I read some sentences about the article to you. Some of the sentences are true. Some are false. The article gives no information about some of them.

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<sup>86</sup> The sample of Exposition for Senior High School Pupils was on "Aluminum," and was about 300 words in length.



"Write your answer to each sentence on the small piece of paper that your teacher has given you.

"After you hear a sentence, put a check mark after its number on the line which tells whether this sentence is true or false or has no information about it in the story."

Stromer<sup>87</sup> (1950), using a rating sheet as an "outside criterion" of listening, developed three tests, which might be aspects of listening.<sup>88</sup>

The rating sheet has four main areas:

1. Ability to follow oral directions.
2. Relevance of student's comments on class discussion.
3. Relevance of student's questions to the subject under discussion.
4. Relevance of student's answers to questions asked of him.

Under each of the areas are statements ranging from the extremes of "very best" to "worst".

Test 1. Ability to Gather Meaning from Contextual Clues.

The test used in this study consists of twenty-five sentences, each built around a particular vocabulary word which the sentence helps to define. The vocabulary words are those appearing in the Cooperative English Test. Some of the sentences are designed to give a

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<sup>87</sup> Walter F. Stromer, "Strength of Opinion, Auditory Memory Span, and the Ability to Gather Meaning from Contextual Clues as Factors in Listening", Unpublished M.A. thesis, University of Denver, 1950, 44 pp.

<sup>88</sup> Ibid., 9, 10.

fairly exact meaning to the vocabulary word, while others give no more than a general idea of what the word might mean.

In administering the test, the actual vocabulary word is replaced by an artificial or nonsense word. These nonsense words are designed to sound like real words. . . .

Each sentence in this test was read to the students just once, after which the students were asked to write down all words or phrases they could which might be substituted for the nonsense word. . . .

In scoring, two points were allowed for each word or phrase that was considered exactly right as a substitute for the nonsense word; and one point was allowed for each word or phrase which might be accepted as a substitute for the nonsense word, but which seemed to ignore some<sup>89</sup> of the finer shades of meaning in the context. . . .

## Test 2. Strength of Opinion.

This test is based on the assumption that people hear what they want to hear, and that if they have strong opinions on particular subjects that they will listen "for that which will strengthen those beliefs, and partly or completely ignore that which disagrees with our beliefs."<sup>90</sup>

Test consisted of thirty statements to be rated from plus to minus ten. Since the test was not administered orally, this writer does not consider it a test of listening ability.

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<sup>89</sup> Ibid., 13-15.

<sup>90</sup> Ibid., 15.

### Test 3. Test of Memory Span.

Several methods were tried, but it was discovered that subjects were writing down the numbers or sounds, so that the part of the test actually used consisted of:

. . . seven items in which the series were meaningful words, such as names of cities, states, colors, foods, etc. In this group the students were asked to write down as many of the words in each series as they could remember, and to put the words in proper order if possible. . . . In scoring one point was allowed for each word that was recorded correctly<sup>91</sup> whether or not it was in proper order in the series.

The reliability of the rating scale was determined by comparing instructor and assistant instructor ratings on the same students. It was .58.

The Contextual Clues test was analyzed, and defective items deleted. The corrected test had a Spearman-Brown coefficient of .94. Validity of the test as determined with the rating scale was -.27

Reliability of the Strength of Opinion test was .75. The validity coefficient was .50.

Validity coefficient of the Test of Memory Span is reported as -.10. Reliability is not reported. Memory span is apparently not related to listening as measured in this study.

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<sup>91</sup> Ibid., 17.

Widner<sup>92</sup> (1950) developed two comparable forms of a listening test. Both were based on material found in two debates between Lincoln and Douglas. Each test passage contains about five typewritten pages of material consisting of lecture material using many quotations from the two debates. Each "lecture" was followed by the administration of fifty printed questions with four foils for each question.<sup>93</sup>

The tests were constructed by actual trial, item analysis and revisions. The reliability is reported as .836 and .839 for each test respectively.<sup>94</sup>

The validity of the items was checked by submitting them to five members of the speech and history departments.<sup>95</sup>

Blewett<sup>96</sup> (1951) had two objectives, the one pertinent to the present study reads:

To construct a listening comprehension test sufficiently reliable and valid to measure the learning resulting from listening.<sup>97</sup>

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<sup>92</sup> Ralph William Widner, Jr., "A Preliminary Study of the Effects of Training in Listening", Unpublished M.A. thesis, University of Oklahoma, 1950. 152 pp.

<sup>93</sup> Ibid., 89-119.

<sup>94</sup> Ibid., 11.

<sup>95</sup> Ibid., 10.

<sup>96</sup> Thomas T. Blewett, "An Experiment in the Measurement of Listening at the College Level", Journal of Communication, I (May, 1951), 50-57.

<sup>97</sup> Ibid., 50.

He describes his two part test as follows:

The test on Content Retention attempted to appraise listening on what might be termed the "factual level"; that is, ability to comprehend and almost immediately recall factual matter, such as names of people, places, . . . etc. . . .

This subtest was composed of five sections, each section containing a passage of information, followed immediately by a series of eight questions designed to test the extent to which the subject was able to recall the facts presented in the passage. Both the informative passages and the questions were presented by means of a paper tape recording machine. . . . The questions were of the simple recall type, approximately sixty per cent of which could be answered in one word. . . . The subjects were allowed between eight and nine seconds in which to write responses to each question on a numbered line on a prepared answer sheet, each line having been keyed to the question presented by the recorded voice.

The informative passages averaged 200 words in length, the shortest containing 198 words, the longest containing 206 words. Rate of delivery for both informative passages and questions was recorded at between 120 and 140 words per minute. The time required for the administration of Subtest I was twenty-five minutes.<sup>98</sup>

The Test on Drawing Conclusions was designed to measure listening on a "higher level" than that of mere factual retention. It was concerned with the ability to draw conclusions from a series of related ideas presented orally, to make inferences, to identify speaker attitudes.

This test was composed of six sections. Each section contained a passage of information carefully selected from outstanding speeches and essays. Each passage of information was followed immediately by a series of questions. The passages of information and the questions were presented orally. The questions were of the multiple-response type, the subjects choosing their responses from among five possible answers appearing in typewritten form on a prepared answer sheet. The re-

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<sup>98</sup> Ibid., 51.

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sponse-time for the questions varied from ten seconds for items involving the least reading to twenty-nine seconds for those involving the most reading.

The informative passages in Subtest II averaged 270 words. . . . Rate of delivery. . . was recorded at between 120 and 140 words per minute. The time required for administration of this subtest was fifty minutes.<sup>99</sup>

A tentative draft of the test was recorded and played for two consulting sections of students. They took and scored their tests, and then with the aid of the printed script carefully analyzed, evaluated, and revised questions and passages. The test was again recorded and tried out and the time intervals needed for answering questions to be read was determined. The revised test was tried out with 150 students to determine the discriminating value of the questions and the reliability of the test. Reliability as determined by the Kuder-Richardson formula was .76 for Part I; .75 for Part II; and .81 for the entire test. The mean difficulty of the entire test was 50.50.

Heilman<sup>100</sup> (1951) described his test as follows:

Two comparable forms of a test of listening comprehension were built. Each form consisted of three subtests. Two sub-tests on each form consisted of items based upon sustained listening material as follows:

Form A. "The Illinois Plan", a 1,875 word abstract from a pamphlet concerned with education of exceptional

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<sup>99</sup> Ibid., 51-52.

<sup>100</sup> Arthur W. Heilman, "Measuring and Improving Listening Ability", Speech Monographs, XVIII (No. 4, 1951), 302-308.

children in the state of Illinois, and "The American Scholar", a 1,604 word passage abstracted from a speech by Howard Mumford Jones, dealing with Emerson's views on American education.

Form B. "Food Preservation", a 1,997 word passage abstracted from a pamphlet prepared by H. G. Heinz Company, dealing with man's search for improved methods of food preservation, and "Education for Freedom", a 1,679 word passage abstracted from a speech by Robert M. Hutchins, dealing with education in America.

The third sub-test which was common to both forms of the test consisted of two parts, one of which involved critical listening to aurally presented problems dealing with directions and identification of figures. The material was contained in a four page  $5\frac{1}{2}$ " x  $8\frac{1}{2}$ " booklet provided each subject, although directions and other statements about things to be done with the material were presented aurally.

The second part of this sub-test consisted of a series of stimulus statements each followed by four other statements called test statements. The subject, after hearing the stimulus statement judged each of the other four statements as either carrying the same meaning as the stimulus statement or a meaning different from it.

The test of sustained listening material, sub-tests 1 and 2, forms A and B, was recorded. Records were cut by professional engineers. . . . The same narrator was used for all the material so that voice quality could not favor one form or the other. Rate of delivery was not held rigidly constant sentence by sentence, but the rate on all records of sustained material fell within the limits of 120 to 140 words per minute. A total of 41 multiple choice questions was prepared to test the listener's comprehension. These were printed and presented to the subjects in test booklets.

The directions, problems, and statements of sub-test 3 were likewise recorded for presentation to the listeners. They worked their responses on a regular IBM answer sheet during short intervals of silence which followed each item. This sub-test also contained 41 items. Thus each form of the test was comprised of 82 items.



Preliminary form of these tests, consisting of 112 and 117 items were administered to a sampling of approximately 200 college freshmen for the purpose of securing data for an item analysis, determining reliability and equating forms A and B.

The Discrimination index of each item was found by the Flanagan Method. Items not having a discrimination index of .20 and falling within the difficulty limits of 20-80 per cent passing, were rejected. . . .

Reliability of the tests was determined using only the retained items in the computation. First, the reliability of the sub-tests of sustained material was computed by determining the correlation coefficient between forms A and B. The obtained coefficient was .80.

The reliability of the sub-test 3, problems, statements, etc., was computed by determining the correlation between odd and even items and using the Spearman-Brown Prophecy Formula to estimate the reliability of the full-length sub-test. The reliability obtained was .84.<sup>101</sup>

Kramar and Lewis<sup>102</sup> (1951) were concerned with measuring listening with and without visual cues. They used freshman college students and built an explanatory lecture.

The lecture was expository in nature and contained factual data concerning the country of New Zealand, its geographical, historical, political, and economic factors. This subject was chosen because it was believed that it would limit the factor of previous knowledge as a variable. The test was composed of forty multiple-choice questions. The questions offered four responses so that the chance factor of success was minimized.

The lecture and the test were administered to fifty students prior to the experimental situation. An item analysis revealed that there were several questions which failed to discriminate. . . . These questions

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<sup>101</sup> Ibid., 303-304.

<sup>102</sup> Edward J. J. Kramar and Thomas R. Lewis, "Comparison of Visual and Nonvisual Listening", Journal of Communication, I (November, 1951), 16-20.

were analyzed and changes made. . . . After the test was administered in the experimental situation an item analysis revealed that there were seven items which were still ineffective. These seven questions were eliminated and the papers were rescored on the basis of the thirty-three retained items. The reliability of the test was .71. . . .<sup>103</sup>

The Stephens College Test of Listening Comprehension<sup>104</sup> (1951) is described as follows:

The Stephens College Test of Listening Comprehension is an untimed test of the student's ability to listen for comprehension of a speaker's meanings in expository oral communication. This test is based on the assumptions that textual materials composed of extensive but complete excerpts from talks present a realistic functional situation common in the student's daily experience; that two passages, one primarily explanatory, the other primarily argumentative, represent two very common listening situations; that testing a student's recognition of main idea and details and logical inferences and relationships of idea will give a valid measure of a student's general listening ability; and, finally, that pre-testing and post-testing of such general ability, with intervening instruction in listening, will yield a measure of growth in this ability. Since the above processes occur more or less simultaneously in the listening situation, items testing them are interspersed throughout the test.

Directions for the test are stated as follows:

Two short talks will be read to you. Each talk is an excerpt from a longer speech. The first talk, or Part I of the test, is an excerpt from a lecture by Dr. Henry Bowman based on his book Marriage For Moderns; the second talk, or Part II of the test, is an excerpt from a baccalaureate address given by Dr. Homer P. Rainey.

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<sup>103</sup> Ibid., 16-17.

<sup>104</sup> Stephens College Test of Listening Ability, Form A, (Mimeographed) Prepared by the Division of Communication, Stephens College, Columbia, Missouri, 1951, 20 pp.

You are to listen without taking notes.

At the end of each part you will be asked to answer multiple-choice questions about what you have heard. The questions will be read to you and you will choose the one response which in your judgment is the best answer. In answering the questions, blacken the one numbered space on your answer sheet that corresponds to the number in your test booklet.

I will now read the first of the two parts. This is an excerpt from a talk on marriage.

(Four double-spaced, elite typed pages on marriage are given.)

Open your Test Booklet to Part I. I will state the question. You will choose the one response which in your judgement is the best answer. Blacken the one numbered space on your answer sheet that corresponds to the number in your test booklet. I will read each question only once. Listen carefully. Ready now for question 1.

1. What point did the Browning story illustrate?

The student has a test booklet with the following choices:

1. That marriage is like poetry
2. That people can be happy though married
3. That successful marriage begins with a good choice
4. That not all marriages are as happy as theirs.

There are twenty-five questions.

Part II of the test is carried out in a similar manner, and has a total of twenty questions.

No information concerning test analysis is given in the mimeographed material, but a personal letter from Professor Donald Bird<sup>105</sup> states that "the test has been analyzed care-

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<sup>105</sup> Personal letter from Prof. Donald Bird, of Stephens College, June 17, 1952.

fully by the Research Service and has gone through two revisions."

**APPENDIX B**  
**INDIVIDUAL TEST SCORES**

**TEST 1 -- MALE SCORES -- TEST AND RETEST**

| <b>Student</b> | <b>Test<br/>Score</b> | <b>Retest<br/>Score</b> | <b>Total<br/>Psychological<br/>Score</b> | <b>Total<br/>Reading<br/>Score</b> |
|----------------|-----------------------|-------------------------|--|------------------------------------|
| <b>1</b>       | <b>8</b>              | <b>12</b>               | <b>No Test</b>                           | <b>No Test</b>                     |
| <b>2</b>       | <b>8</b>              | <b>12</b>               | <b>113</b>                               | <b>79</b>                          |
| <b>3</b>       | <b>17</b>             | <b>22</b>               | <b>84</b>                                | <b>52</b>                          |
| <b>4</b>       | <b>6</b>              | <b>10</b>               | <b>63</b>                                | <b>13</b>                          |
| <b>5</b>       | <b>5</b>              | <b>8</b>                | <b>110</b>                               | <b>47</b>                          |
| <b>6</b>       | <b>8</b>              | <b>7</b>                | <b>80</b>                                | <b>31</b>                          |
| <b>7</b>       | <b>21</b>             | <b>22</b>               | <b>100</b>                               | <b>78</b>                          |
| <b>8</b>       | <b>13</b>             | <b>18</b>               | <b>95</b>                                | <b>51</b>                          |
| <b>9</b>       | <b>2</b>              | <b>9</b>                | <b>No Test</b>                           | <b>No Test</b>                     |
| <b>10</b>      | <b>14</b>             | <b>13</b>               | <b>108</b>                               | <b>74</b>                          |
| <b>11</b>      | <b>7</b>              | <b>20</b>               | <b>103</b>                               | <b>52</b>                          |
| <b>12</b>      | <b>12</b>             | <b>18</b>               | <b>99</b>                                | <b>49</b>                          |
| <b>13</b>      | <b>12</b>             | <b>12</b>               | <b>108</b>                               | <b>76</b>                          |
| <b>14</b>      | <b>10</b>             | <b>16</b>               | <b>88</b>                                | <b>68</b>                          |
| <b>15</b>      | <b>5</b>              | <b>11</b>               | <b>78</b>                                | <b>42</b>                          |
| <b>16</b>      | <b>9</b>              | <b>18</b>               | <b>104</b>                               | <b>57</b>                          |
| <b>17</b>      | <b>10</b>             | <b>4</b>                | <b>59</b>                                | <b>15</b>                          |
| <b>18</b>      | <b>17</b>             | <b>16</b>               | <b>83</b>                                | <b>42</b>                          |
| <b>19</b>      | <b>5</b>              | <b>9</b>                | <b>106</b>                               | <b>34</b>                          |
| <b>20</b>      | <b>9</b>              | <b>18</b>               | <b>89</b>                                | <b>58</b>                          |
| <b>21</b>      | <b>6</b>              | <b>12</b>               | <b>70</b>                                | <b>21</b>                          |

| <b>Student</b> | <b>Test<br/>Score</b> | <b>Retest<br/>Score</b> | <b>Total<br/>Psychological<br/>Score</b> | <b>Total<br/>Reading<br/>Score</b> |
|----------------|-----------------------|-------------------------|--|------------------------------------|
| 22             | 13                    | 9                       | 105                                      | 35                                 |
| 23             | 15                    | 12                      | 120                                      | 97                                 |
| 24             | 24                    | 25                      | 146                                      | 113                                |
| 25             | 5                     | 12                      | 63                                       | 22                                 |
| 26             | 11                    | 21                      | 123                                      | 100                                |
| 27             | 11                    | 8                       | 107                                      | 77                                 |
| 28             | 8                     | 11                      | No Test                                  | No Test                            |
| 29             | 6                     | 5                       | 114                                      | 82                                 |
| 30             | 10                    | 8                       | 101                                      | 69                                 |
| 31             | 21                    | 21                      | 141                                      | 121                                |
| 32             | 20                    | 16                      | 114                                      | 95                                 |
| 33             | 10                    | 4                       | 78                                       | 64                                 |
| 34             | 6                     | 15                      | 91                                       | 63                                 |
| 35             | 28                    | 26                      | 144                                      | 107                                |
| 36             | 16                    | 15                      | 90                                       | 32                                 |
| 37             | 5                     | 11                      | 74                                       | 44                                 |
| 38             | 11                    | 12                      | No Test                                  | No Test                            |
| 39             | 13                    | 16                      | No Test                                  | No Test                            |
| 40             | 7                     | 5                       | No Test                                  | No Test                            |
| 41             | 11                    | 18                      | No Test                                  | No Test                            |
| 42             | 10                    | 6                       | 79                                       | 33                                 |
| 43             | 3                     | 12                      | 101                                      | 35                                 |
| 44             | 11                    | 14                      | 86                                       | 29                                 |
| 45             | 16                    | 16                      | 93                                       | 62                                 |

| <b>Student</b> | <b>Test<br/>Score</b> | <b>Retest<br/>Score</b> | <b>Total<br/>Psychological<br/>Score</b> | <b>Total<br/>Reading<br/>Score</b> |
|----------------|-----------------------|-------------------------|--|------------------------------------|
| <b>46</b>      | <b>26</b>             | <b>29</b>               | <b>No Test</b>                           | <b>No Test</b>                     |
| <b>47</b>      | <b>11</b>             | <b>18</b>               | <b>95</b>                                | <b>57</b>                          |
| <b>48</b>      | <b>10</b>             | <b>9</b>                | <b>73</b>                                | <b>29</b>                          |
| <b>49</b>      | <b>19</b>             | <b>25</b>               | <b>78</b>                                | <b>41</b>                          |
| <b>50</b>      | <b>5</b>              | <b>10</b>               | <b>70</b>                                | <b>34</b>                          |
| <b>51</b>      | <b>15</b>             | <b>20</b>               | <b>106</b>                               | <b>60</b>                          |
| <b>52</b>      | <b>17</b>             | <b>16</b>               | <b>96</b>                                | <b>64</b>                          |



**TEST 1 -- FEMALE SCORES -- TEST AND RETEST**

| <b>Student</b> | <b>Test<br/>Score</b> | <b>Retest<br/>Score</b> | <b>Total<br/>Psychological<br/>Score</b> | <b>Total<br/>Reading<br/>Score</b> |
|----------------|-----------------------|-------------------------|--|------------------------------------|
| 53             | 8                     | 11                      | 108                                      | 52                                 |
| 54             | 8                     | 11                      | 96                                       | 23                                 |
| 55             | 15                    | 12                      | 129                                      | 93                                 |
| 56             | 10                    | 11                      | 97                                       | 81                                 |
| 57             | 15                    | 12                      | 79                                       | 53                                 |
| 58             | 18                    | 23                      | 101                                      | 75                                 |
| 59             | 12                    | 14                      | 79                                       | 29                                 |
| 60             | 6                     | 10                      | 103                                      | 82                                 |
| 61             | 20                    | 25                      | 107                                      | 43                                 |
| 62             | 20                    | 23                      | 121                                      | 92                                 |
| 63             | 19                    | 18                      | 106                                      | 91                                 |
| 64             | 16                    | 16                      | 119                                      | 78                                 |
| 65             | 6                     | 6                       | 94                                       | 58                                 |
| 66             | 14                    | 25                      | 120                                      | 80                                 |
| 67             | 16                    | 18                      | 109                                      | 54                                 |
| 68             | 18                    | 19                      | 114                                      | 80                                 |
| 69             | 7                     | 23                      | 99                                       | 81                                 |

**TEST 1 -- MALE SCORES -- TEST AND NICHOLS TEST**

| <b>Student</b> | <b>Test<br/>Score</b> | <b>Nichols<br/>Score</b> | <b>Total<br/>Psychological<br/>Score</b> | <b>Total<br/>Reading<br/>Score</b> |
|----------------|-----------------------|--------------------------|--|------------------------------------|
| 70             | 16                    | 14                       | 103                                      | 66                                 |
| 71             | 13                    | 15                       | 104                                      | 74                                 |
| 72             | 8                     | 16                       | 111                                      | 93                                 |
| 73             | 20                    | 19                       | 123                                      | 100                                |
| 74             | 9                     | 17                       | No Score                                 | No Score                           |
| 75             | 24                    | 18                       | 122                                      | 103                                |
| 76             | 8                     | 12                       | 77                                       | 50                                 |
| 77             | 10                    | 13                       | 93                                       | 69                                 |
| 78             | 14                    | 16                       | 104                                      | 109                                |
| 79             | 15                    | 17                       | 92                                       | 54                                 |
| 80             | 25                    | 17                       | 88                                       | 52                                 |
| 81             | 8                     | 14                       | 114                                      | 53                                 |
| 82             | 22                    | 16                       | 118                                      | 89                                 |
| 83             | 15                    | 16                       | 97                                       | 69                                 |
| 84             | 2                     | 13                       | No Score                                 | No Score                           |
| 85             | 14                    | 15                       | 135                                      | 85                                 |
| 86             | 12                    | 14                       | 103                                      | 38                                 |
| 87             | 1                     | 8                        | 56                                       | 8                                  |
| 88             | 10                    | 22                       | 102                                      | 97                                 |
| 89             | 11                    | 15                       | 96                                       | 42                                 |
| 90             | 12                    | 10                       | 95                                       | 53                                 |

| <b>Student</b> | <b>Test<br/>Score</b> | <b>Nichols<br/>Score</b> | <b>Total<br/>Psychological<br/>Score</b> | <b>Total<br/>Reading<br/>Score</b> |
|----------------|-----------------------|--------------------------|--|------------------------------------|
| 91             | 9                     | 11                       | 62                                       | 33                                 |
| 92             | 18                    | 18                       | No Test                                  | No Test                            |
| 93             | 3                     | 10                       | 72                                       | 17                                 |
| 94             | 20                    | 14                       | 101                                      | 81                                 |
| 95             | 6                     | 12                       | 109                                      | 37                                 |
| 96             | 8                     | 15                       | 127                                      | 70                                 |
| 97             | 12                    | 19                       | 138                                      | 100                                |
| 98             | 19                    | 22                       | 123                                      | 79                                 |
| 99             | 9                     | 11                       | 74                                       | 19                                 |
| 100            | 8                     | 18                       | 101                                      | 70                                 |
| 101            | 17                    | 16                       | 119                                      | 132                                |
| 102            | 19                    | 22                       | 114                                      | 86                                 |
| 103            | 11                    | 20                       | No Test                                  | No Test                            |
| 104            | 9                     | 14                       | 102                                      | 68                                 |
| 105            | 10                    | 13                       | No Score                                 | No Score                           |
| 106            | 6                     | 13                       | 106                                      | 82                                 |
| 107            | 16                    | 20                       | 125                                      | 79                                 |
| 108            | 10                    | 20                       | No Score                                 | No Score                           |

**TEST 1 -- FEMALE SCORES -- TEST AND NICHOLS TEST**

| <b>Student</b> | <b>Test<br/>Score</b> | <b>Nichols<br/>Score</b> | <b>Total<br/>Psychological<br/>Score</b> | <b>Total<br/>Reading<br/>Score</b> |
|----------------|-----------------------|--------------------------|--|------------------------------------|
| 109            | 13                    | 12                       | 84                                       | 51                                 |
| 110            | 12                    | 12                       | 80                                       | 27                                 |
| 111            | 12                    | 8                        | 60                                       | 37                                 |
| 112            | 5                     | 9                        | 79                                       | 40                                 |
| 113            | 10                    | 14                       | 68                                       | 57                                 |
| 114            | 14                    | 14                       | 91                                       | 45                                 |
| 115            | 18                    | 15                       | 89                                       | 69                                 |
| 116            | 13                    | 15                       | 111                                      | 53                                 |
| 117            | 16                    | 18                       | 129                                      | 107                                |
| 118            | 16                    | 19                       | 81                                       | 72                                 |
| 119            | 11                    | 9                        | 70                                       | 22                                 |
| 120            | 14                    | 8                        | 59                                       | 39                                 |
| 121            | 14                    | 14                       | 85                                       | 58                                 |
| 122            | 7                     | 10                       | No Test                                  | No Test                            |
| 123            | 8                     | 14                       | 104                                      | 79                                 |
| 124            | 11                    | 15                       | 124                                      | 67                                 |
| 125            | 18                    | 16                       | No Score                                 | No Score                           |
| 126            | 10                    | 12                       | 96                                       | 36                                 |
| 127            | 5                     | 10                       | 86                                       | 41                                 |
| 128            | 21                    | 13                       | 104                                      | 84                                 |
| 129            | 9                     | 8                        | 86                                       | 54                                 |

**TEST 2 -- MALE SCORES -- TEST AND RETEST**

| <b>Student</b> | <b>Test<br/>Score</b> | <b>Retest<br/>Score</b> | <b>Total<br/>Psychological<br/>Score</b> | <b>Total<br/>Reading<br/>Score</b> |
|----------------|-----------------------|-------------------------|--|------------------------------------|
| 130            | 10                    | 12                      | 102                                      | 43                                 |
| 131            | 15                    | 13                      | 85                                       | 38                                 |
| 132            | 25                    | 23                      | 150                                      | 120                                |
| 133            | 14                    | 18                      | 112                                      | 63                                 |
| 134            | 23                    | 21                      | 108                                      | 56                                 |
| 135            | 13                    | 14                      | 136                                      | 109                                |
| 136            | 20                    | 19                      | 132                                      | 91                                 |
| 137            | 14                    | 21                      | 112                                      | 62                                 |
| 138            | 9                     | 9                       | 73                                       | 28                                 |
| 139            | 17                    | 17                      | 99                                       | 61                                 |
| 140            | 8                     | 15                      | 85                                       | 60                                 |
| 141            | 21                    | 21                      | 120                                      | 61                                 |
| 142            | 19                    | 21                      | 109                                      | 42                                 |
| 143            | 8                     | 9                       | 115                                      | 69                                 |
| 144            | 10                    | 12                      | 90                                       | 65                                 |
| 145            | 24                    | 28                      | 111                                      | 83                                 |
| 146            | 7                     | 10                      | 110                                      | 25                                 |
| 147            | 11                    | 11                      | 59                                       | 39                                 |
| 148            | 12                    | 9                       | 115                                      | 70                                 |

## TEST 2 -- FEMALE SCORES -- TEST AND RETEST

| Student | Test Score | Retest Score | Total Psychological Score | Total Reading Score |
|---------|------------|--------------|---------------------------|---------------------|
| 149     | 14         | 17           | 150                       | 124                 |
| 150     | 18         | 19           | 122                       | 128                 |
| 151     | 13         | 16           | 107                       | 87                  |
| 152     | 20         | 18           | 76                        | 46                  |
| 153     | 13         | 16           | 74                        | 35                  |
| 154     | 24         | 17           | 94                        | 55                  |
| 155     | 16         | 18           | 114                       | 63                  |
| 156     | 11         | 10           | 110                       | 70                  |
| 157     | 13         | 10           | 97                        | 72                  |
| 158     | 7          | 8            | 92                        | 50                  |
| 159     | 20         | 16           | 127                       | 93                  |
| 160     | 7          | 18           | 68                        | 54                  |
| 161     | 13         | 16           | 128                       | 123                 |
| 162     | 12         | 15           | No Test                   | No Test             |
| 163     | 14         | 14           | 73                        | 15                  |
| 164     | 12         | 15           | 127                       | 100                 |

TEST 2 -- MALE SCORES -- TEST AND NICHOLS TEST

| Student | Test<br>Score | Nichols<br>Score | Total<br>Psychological<br>Score | Total<br>Reading<br>Score |
|---------|---------------|------------------|---------------------------------|---------------------------|
| 165     | 22            | 17               | 108                             | 67                        |
| 166     | 17            | 16               | 138                             | 82                        |
| 167     | 16            | 12               | 119                             | 69                        |
| 168     | 10            | 12               | 89                              | 41                        |
| 169     | 13            | 17               | 90                              | 61                        |
| 170     | 14            | 17               | 100                             | 63                        |
| 171     | 6             | 13               | No Test                         | No Test                   |
| 172     | 25            | 15               | 136                             | 65                        |
| 173     | 13            | 19               | 91                              | 62                        |
| 174     | 8             | 17               | 106                             | 70                        |
| 175     | 6             | 6                | 47                              | 15                        |
| 176     | 14            | 16               | 117                             | 58                        |
| 177     | 10            | 12               | 114                             | 46                        |
| 178     | 19            | 18               | 123                             | 73                        |
| 179     | 24            | 19               | 124                             | 100                       |
| 180     | 19            | 20               | 173                             | 97                        |
| 181     | 5             | 17               | 91                              | 57                        |
| 182     | 14            | 10               | 72                              | 38                        |
| 183     | 19            | 18               | 122                             | 80                        |
| 184     | 9             | 18               | 91                              | 81                        |
| 185     | 17            | 20               | 115                             | 107                       |

| Student | Test<br>Score | Nichols<br>Score | Total<br>Psychological<br>Score | Total<br>Reading<br>Score |
|---------|---------------|------------------|---------------------------------|---------------------------|
| 186     | 20            | 17               | 108                             | 62                        |
| 187     | 11            | 18               | 112                             | 68                        |
| 188     | 9             | 12               | 111                             | 67                        |



## TEST 2 -- FEMALE SCORES -- TEST AND NICHOLS TEST

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| Student | Test<br>Score | Nichols<br>Score | Total<br>Psychological<br>Score | Total<br>Reading<br>Score |
|---------|---------------|------------------|---------------------------------|---------------------------|
| 189     | 22            | 23               | 147                             | 102                       |
| 190     | 14            | 11               | 95                              | 66                        |
| 191     | 18            | 16               | 130                             | 97                        |
| 192     | 10            | 9                | 101                             | 75                        |
| 193     | 9             | 18               | 108                             | 81                        |
| 194     | 7             | 6                | 70                              | 16                        |

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## TEST 3 -- MALE SCORES -- TEST AND RETEST

| Student | Test<br>Score | Retest<br>Score | Total<br>Psychological<br>Score | Total<br>Reading<br>Score |
|---------|---------------|-----------------|---------------------------------|---------------------------|
| 195     | 10            | 16              | 78                              | 51                        |
| 196     | 17            | 19              | 105                             | 91                        |
| 197     | 15            | 15              | 97                              | 35                        |
| 198     | 26            | 25              | 94                              | 89                        |
| 199     | 11            | 16              | No Test                         | No Test                   |
| 200     | 17            | 15              | 107                             | 59                        |
| 201     | 17            | 20              | 88                              | 68                        |
| 202     | 19            | 18              | 118                             | 45                        |
| 203     | 25            | 28              | 119                             | 102                       |
| 204     | 16            | 22              | 121                             | 94                        |
| 205     | 16            | 26              | 94                              | 70                        |
| 206     | 15            | 23              | 89                              | 57                        |
| 207     | 13            | 10              | 91                              | 26                        |
| 208     | 22            | 29              | 103                             | 69                        |
| 209     | 15            | 22              | 105                             | 86                        |
| 210     | 22            | 24              | 125                             | 79                        |
| 211     | 23            | 27              | 131                             | 103                       |
| 212     | 20            | 24              | 128                             | 103                       |
| 213     | 11            | 16              | 98                              | 72                        |
| 214     | 22            | 24              | 108                             | 72                        |
| 215     | 23            | 18              | No Test                         | No Test                   |
| 216     | 10            | 14              | 119                             | 79                        |

## TEST 3 -- FEMALE SCORES -- TEST AND RETEST

| Student | Test Score | Retest Score | Total Psychological Score | Total Reading Score |
|---------|------------|--------------|---------------------------|---------------------|
| 217     | 13         | 16           | 99                        | 72                  |
| 218     | 11         | 21           | 113                       | 67                  |
| 219     | 21         | 24           | 138                       | 114                 |
| 220     | 13         | 24           | 100                       | 79                  |
| 221     | 24         | 23           | 140                       | 117                 |
| 222     | 10         | 16           | 99                        | 74                  |
| 223     | 19         | 24           | 112                       | 87                  |
| 224     | 27         | 25           | 132                       | 122                 |
| 225     | 15         | 14           | 71                        | 70                  |
| 226     | 8          | 4            | 124                       | 96                  |
| 227     | 9          | 14           | 77                        | 22                  |
| 228     | 7          | 17           | 104                       | 51                  |
| 229     | 25         | 21           | 149                       | 131                 |
| 230     | 26         | 25           | 131                       | 97                  |
| 231     | 14         | 17           | 98                        | 59                  |
| 232     | 23         | 22           | 94                        | 63                  |
| 233     | 15         | 20           | 74                        | 34                  |

**TEST 3 -- MALE SCORES -- TEST AND NICHOLS TEST**

| <b>Student</b> | <b>Test<br/>Score</b> | <b>Nichols<br/>Score</b> | <b>Total<br/>Psychological<br/>Score</b> | <b>Total<br/>Reading<br/>Score</b> |
|----------------|-----------------------|--------------------------|--|------------------------------------|
| 234            | 15                    | 15                       | 110                                      | 77                                 |
| 235            | 19                    | 18                       | 124                                      | 100                                |
| 236            | 10                    | 10                       | 121                                      | 48                                 |
| 237            | 14                    | 11                       | 90                                       | 45                                 |
| 238            | 3                     | 8                        | 69                                       | 29                                 |
| 239            | 24                    | 17                       | 104                                      | 113                                |
| 240            | 25                    | 20                       | 131                                      | 110                                |
| 241            | 16                    | 21                       | 115                                      | 84                                 |
| 242            | 26                    | 19                       | 134                                      | 86                                 |
| 243            | 17                    | 16                       | 90                                       | 76                                 |
| 244            | 21                    | 19                       | 94                                       | 63                                 |
| 245            | 15                    | 19                       | 97                                       | 55                                 |
| 246            | 17                    | 17                       | 87                                       | 37                                 |
| 247            | 19                    | 13                       | 100                                      | 64                                 |
| 248            | 20                    | 20                       | 130                                      | 92                                 |
| 249            | 25                    | 19                       | 129                                      | 94                                 |
| 250            | 16                    | 12                       | 75                                       | 25                                 |
| 251            | 3                     | 9                        | 98                                       | 53                                 |
| 252            | 24                    | 21                       | 121                                      | 98                                 |

**TEST 3 -- FEMALE SCORES -- TEST AND NICHOLS TEST**

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| <b>Student</b> | <b>Test<br/>Score</b> | <b>Nichols<br/>Score</b> | <b>Total<br/>Psychological<br/>Score</b> | <b>Total<br/>Reading<br/>Score</b> |
|----------------|-----------------------|--------------------------|--|------------------------------------|
| 253            | 22                    | 18                       | 134                                      | 89                                 |
| 254            | 11                    | 13                       | 125                                      | 86                                 |
| 255            | 17                    | 14                       | 90                                       | 55                                 |

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