THE SPEECH HABITS OF CADET OFFICERS

being

A CLINICAL INVESTIGATION OF THE FREQUENCY AND EFFECT OF SPEECH DISORDERS ON MILITARY TRAINEES

and

AN INVESTIGATION OF THE RELATION BETWEEN SPEECH HABITS AND ABILITY IN GIVING MILITARY COMMANDS

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THE RELATION OF THE GRADE IN FUNDAMENTAL COURSES IN SPEECH, ENGLISH, AND MATHEMATICS TO MILITARY GRADES

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CONTENTS

CHAPTER I

INTRODUCTION

This investigation is a part of a defense project assigned to the Speech Clinic at Oklahoma Agricultural and Mechanical College. Its form was in part dictated by the outline for a study of nation scope directed by a National Emergency Defense Committee. This committee interested itself in the Reserve Officers Training Corps for source materials in order to avoid interfering with the regular army and navy training program. They were particularly interested in the frequency of occurrence of speech defects in cadet officers taking military training, the relative frequency of occurrence of the different types of such defects, and the influence of speech defects on (a) military grades and (b) the ability to carry out the duties of military officers.

The United States Government, in lieu of the National Defense Program, has interested itself in speech afflictions through the agency of the National Resources Planning Board. This interest is concerned with the National Health and Fitness Program and with the Physical Standards of the Selective Service Regulations. The rehabilitation of the handicapped in speech is important to the fitness of our Nationals to bring them up to a standard sufficient to pass the physical examinations of the draft boards. Col. Roger Brooke, of the Medical Corps of the War Department, states:

> "In times of peace, speech disturbances do not give the army much concern. Candidates for West Point with speech defects are rejected. In times of war, it is probable that quite a number of men suffering from speech defects, under proper guidance,

could be improved so that they could be used."[1]

1. Letter to Charles H. Voelker, Director of Speech Clinic at Oklahoma Agricultural and Mechanical College, Stillwater, Oklahoma, February 27, 1935.

and the present United States Army Surgeon General, Maj. Gen. James C. Magee, states that "the exigencies of the present military situation may create a demand for (rehabilitation of prospective draftees with speech defects)".[2]

2. Letter to Charles H. Voelker, January 6, 1942.

Also the Surgeon General of the United States Navy, Rear Admiral Ross T. McIntire, states, "We make every effort to exclude speech defectives from the Service, and we find that in the cases that develop in the Service, the underlying psychopathic state in these patients is ample cause for separation from the Service".[3]

3. Letter to Charles H. Voelker, Dec. 21, 1941.

The Army Regulations in regard to speech defects are given in Selective Service Regulations, Physical Standards, Vol. 6, Sec. 19, page 28, Item 76. A selectee is placed in Class 1B if, "stuttering and stammering of a degree disqualifying for general military service but which has not prevented registrants from successfully following a useful vocation in civil life" is manifested. Item 77g states that a selectee is rejected if, "stammering to such a degree that the registrant is unable to express himself clearly or to repeat commands" is present. Sec. 6, Item 28b states that a selectee is placed in 1B if there is manifested, "aphonia with attendant conditions which disqualify for general military service if he has followed a useful vocation in civil life". A selectee is placed in Class IV if he has irremedial

defects of the mouth, throat, or nose which interfere with speech. Recently several selective service boards, classifying men for military service, have considered defective speech to be prima facie evidence of mental deficiency".[4]

4. Strother, C. R.: Speech Correction, in O'Neill, J. M.: Foundations of Speech, New York, 1941, Chap. 18, p. 440.

> "According to figures based on a sampling of more than 17,000 selectees in the New York City area, approximately one-tenth of one percent of this sampling has been rejected or placed in a deferred classification because of stuttering. Medical opinion is that the rest of the stutterers have been disqualified because of physical conditions other than stuttering. Recent data.... indicate that known stutterers have been selected for army service in various parts of the country. Evidently, this 'training program for the physically fit' does include men with speech disorders.[5]

5. Steer, M. D.: Report of the Committee on National Defense of the American Speech Correction Association, Journal of Speech Disorders, 6:206, 1941.

> "The Committee on War Research is charged with the responsibility of ... (2) establishing investigations leading toward the prediction of speech stability and instability among personnel engaged in military programs, (3) analyzing the limitations of speech defectives in civilian and military emergency activities, (4) the effects of simulated war conditions upon the speech stability of civilian and military personnel".[6]

6. Steer, M. D.: Report of the Committee on National Defense of the American Speech Correction Association, Journal of Speech Disorders, 6:206, 1941.

"The Committee on Selective Service and Induction Camps is charged with the immediate responsibility of estimating the incidence of man-power rejected because of speech disorders in the various states and induction camps in the country. According to Selective Service

regulations, provisions have been made for rejection and deferred classification of selectees manifesting stuttering, aphonia, and other handicapping speech defects".[7]

7. Steer, M. D.: Report of the Committee on National Defense of the American Speech Correction Association, Journal of Speech Disorders, 6:205, 1942.

"The analysis of the reports of physical examinations are not complete at this time, but a sampling of 20,000 reports shows that .03 per cent of all rejections were for functional disorders of expressive movements".[8]

8. Steer, M. D.: Report of the Committee on National Defense of the American Speech Correction Association, Journal of Speech Disorders, 6:218, 1941.

In the last war, America was advised by Kenyon, of Rush Medical School,[9]

9. Kenyon, E. T.: The Stammerer and Army Service, Journal of the American Medical Association, 69:664-685, 1917.

to disqualify in the draft all men suffering from such dyspemias as stuttering or stammering. Now, in this war, the United States has been advised by Johnson.[10]

10. Johnson, W.: A Letter to the Editor, Journal of Speech Disorders, Vol. 5, inside back cover, No. 4, Dec., 1940.

Kenyon[11] gave some case studies from the last war draft of stutterers

11. Kenyon, E. T.: The Stammerer and Army Service, Journal of the American Medical Association, 69:664-685, 1917.

in service. One was accepted into the militia and sent to the Mexican border as a corporal. But, when he was found to be very unreliable in ability to speak for roll call, he voluntarily resigned from service. Another was taken into the Marine Corps as a commissioned officer, but because of his speech, he was demoted to a private. He resigned and undertook treatments, later being accepted into an officers training camp. Another stutter was reported as serving three years as a private in army camps at home. Another stutterer was reported as serving three years as a private in army camps at home. Another was reported as being prevented from enlisting in the air corps because the father feared his "son would go to pieces".

In addition to the above problem of speech disorders in military trainees it was believed that speech of some sort was important in the duties of military officers. The cadet officers are trained to give commands, make reports, make announcements, etc., and these are undoubtedly speech skills. It is perfectly proper to assume that basic speech habits underlie and are identical in all forms of speech skills. That is to say, there are fundamental speech processes that are quite separate from the skills which are the attributes of public speakers, oral readers, and actors.

It is proposed in this investigation to set up scales in terms of speech habits, the lower end of which scales will be defined as defective speech. Thus if the speech habits were classified as articulation, inflection, voice quality, and fluency, and speech disorders were classified as dyslalia, dysrhythmia, dysphonia, and dysphemia, then the frequency of occurrence of dyslalia could be read on the

articulation scale, dysrhythmia on the inflection scale, dysphonia on the voice quality scale, and dysphemia on the fluency scale.

Some interest has been shown in the relation of ability in speech and grades in language and mathematics, and it is proposed to make an additional analysis of this data in that respect.

Some interest has been given to this study previously. Barnes correlated English training with a grade in a basic college speech course and found a coefficient of correlation of .42.[13]

13. Barnes, Harry G.: Diagnosis of the Speech Needs and Abilities of Students in the Required Course in Speech Training at the State University of Iowa, Ph. D. Thesis, Iowa City, 1937.

Barnes also found that mathematical aptitude correlated with speech grades with a coefficient of correlation of .32. He found that 73 per cent of the superior speakers had good pronunciation, whereas only 29 per cent of the inferior speakers had good pronunciation. Cole says that high school girls are undoubtedly superior in verbalism and boys in mathematics.[14]

14. Cole, L.: Psychology of Adolescence, New York, 1936, p. 198.

Wellman points out that girls excell boys in the English portion of objective tests. Lund studied the five-year previous records of 338 college freshmen and found that the girls were better in English and language, and the boys better in mathematics.[15]

15. Stoddard, G. D. and B. L. Wellman, Child Psychology, New York, 1934, p.217.

Two hundred and eighty-two college freshmen showed the following correlations between their speech grades and the following tests:

English Aptitude, .37; English Training, .34; and Rahskopf says that they were statistically significant.[16]

16. Rahskoff, H. F.: The Relation of Certain Group Tests to the Prediction of the Ability of Students in an Elementary Course in Speech, M. A. Thesis, Iowa City, Iowa, 1927.

Keeney studied 115 college freshmen who had had a high school course in speech and 116 who had not had the course. Pronunciation shows the least benefit from such a course. Those who had not had the course showed better timing than those who had the course. Pitch control was only slightly better for those who had had the course. Forty-five per cent of those who had the course and 24 per cent of those who had not had the course had fluency ratings above average. Nine per cent of those who had had the course and 17 per cent of those who had not had the course had fluency ratings below average. Forty-two per cent of those who had had the course and 30 percent of those who had not had the course had carrying power ratings above average, and 12 per cent of those who had had the course and 17 per cent of those who had not had the course had carrying power ratings below average. Forty-one per cent of those who had had the course and 16 per cent of those who had not had the course had pronunciation ratings below average. Thirty-five per cent of those who had had the course and 17 per cent of those who had not had the course had articulation ratings above average, and 15 per cent of those who had had the course and 29 per cent of those who had not had the course had articulation ratings below average. Thirty-five per cent of those who had had the course and 16 per cent of those who had not had the course had quality ratings above average,

and 14 per cent of those who had had the course and 19 per cent of those who had not had the course had quality ratings below average. Thirty-one per cent of those who had had the course and 16 per cent of those who had not had the course had pitch ratings above average and 31 per cent of those who had the course and 30 per cent of those who had not had the course had pitch ratings below average. Twenty-eight per cent of those who had had the course and 17 per cent of those who had not had the course had time ratings above the average and 16 per cent of those who had had the course and 26 per cent of those who had not had the course had time ratings below average. The most obvious thing is that having had a speech course is not disgnostic.[17]

17. Keeney, O. A.: Relationship of High School Speech Work to Success in Principles in Speech, Iowa City, Iowa, 1930.

Kelly studied 59 pupils and tested the correlation between the grade in tenth grade English and the teacher's estimate of oral expression. He found a correlation of .63.[18]

18. Brooks, F. D.: Psychology of Adolescence, Boston, 1929, p. 564.

CHAPTER II

PROCEDURE

One hundred students enrolled in the Fundamental Speech Course at Oklahoma Agricultural and Mechanical College, at Stillwater, Oklahoma, were selected at random and examined individually by a widely used form of clinical survey method.[12]

12. Voelker, Charles H.: Two Surveys of Speech in a Cultural College, Journal of the American Association of Collegiate Registrars, 14:39-42, 1938.

Although this test has been used in examining thousands of college student subjects in various schools, the ratings were of necessity clinical rather than objective. This constituted a preliminary training period giving experience in using the techniques employed in this type of clinical investigation.

After this preliminary experience, the major problem of examining 255 cadet officers was undertaken. A cadet officer was detailed to perform the following duties in the organization that made this work possible: First, he procured a list of the names of all cadet officers of junior and senior college level in the advanced military classes. He then made arrangements with the military staff in scheduling the time and place for giving the examination and for making the survey. Finally, he found and detailed the cadet officers to the examination rooms in small groups. A student clerk interviewed each cadet officer in a separate room. He recorded on the examination form the name of the cadet, his age, his rank, and his military grades in basic courses, advanced courses, and

summer camp. By means of questions covering the various speech sounds and their several combinations, he recorded warnings to the clinician to note well when a peculiarity seemed to have been demonstrated during this interview. He then sent the cadets into the examination room separately so that they could be examined individually, and when they returned from the examination he attempted to keep them separated from those who had not been surveyed.

In the examination room, the cadet officer approached the examiner and presented his examination form. The examiner first asked the cadet officer to repeat his name and list his training in speech, if any. After this procedure of establishing a speech situation, the examiner placed a card before his mouth and asked a series of four questions. The first three questions were asked seriously, and, in content, were typical of a hearing case history. The fourth question was asked in the same serious manner and in an ordinary tone of voice and articulated with special care and distinctness. This fourth question was in the form of a catch question. The first three questions were employed to establish a mood wherein the fourth question made an effective catch question. All four questions were pronounced behind the card to prevent lip reading and to detect hearing deficiencies. The fourth question was given as a catch question in order to throw the cadet officer off his balance so that he would display habitual speech response and psychoneurotic speech disturbance, if such were characteristic. The cadet officer was given a grade according to this total situation, which grade was called ability in conversation. The questions of the examiner took the following form:

Q1. Have you ever had scarlet fever?

Q2. Are you troubled with frequent colds?

Q3. Have you ever had the measles?

Q4. How may two-cent stamps in a dozen?

The particular questions were altered from time to time to prevent the cadet officers from anticipation as a result of association with previously examined cadet officers.

The examiner then handed a card to the cadet officer on which the following was written:

> Suppose you are in command of Company A.
> Form the Company and move out for drill.
> You are to say the appropriate commands.

COMPANY A	FALL IN
COUNT	OFF
DRESS RIGHT	DRESS
READY	FRONT
PORT	ARMS
INSPECTION	ARMS
RIGHT SHOULDER	ARMS
ORDER	ARMS
RIGHT	FACE
RIGHT SHOULDER	ARMS
FORWARD	MARCH

Simultaneously the examiner gave the cadet officer the following directions: "Back up and give these commands as you would to your men on the field". These directions were standardized in the preliminary examination. It was found, for example, that the words "Back up" resulted in a more correct and direct response than synonymous expressions. Most important,

it was found that the subject would back ten steps further when the words "Back up" were pronounced first than last. That is, in the standard direction used the cadet officer actually started stepping backwards before he took the card, which was in contrast to when the words "Back up" were pronounced last and the cadet officer started reading the card more dominantly than stepping backward. The examiner graded the cadet officer on the total effect of his ability to give military commands. Notes were added to the score in the event that a differentiation was necessary between the preparatory command and the command of execution or that particular vocal idiosyncracies were apparent. It is important to digress at this point to indicate that the examiner was given training and material to read on the principles of giving commands and went onto the field and observed the cadet officers in action, giving commands while the military staff criticized.

The examiner then handed the cadet officer a single typewritten page which contained a passage selected for its inclusion of the several speech sounds and its adaptability to oral reading. This last refers specifically to its advertising content and radio style. The passage was as follows:

> "Gentlemen, we address you privately. Don't give her lingerie -- unless the lady happens to be your wife or fiancee, -- your mother, sister, -- or a very dear friend whom you would like to flatter with a personal gift. If she's that, by all means give her lingerie; it's the very gift she wants from you, the very gift she's been hinting about. And when you're selecting a negligee, a gown, or a set of matching underthings, forget she's inclined to be over-practical, disenchantingly matter-of-fact, tailored. Give her something exquisite -- frivolous -- enchanting -- glamorous. Every woman fancies she's fascinating in her boudoir. And finally, a word on the inevitable subject of money. We don't know how much you can spend, but we do know that you want your gift to be the most beautiful gesture in the world."

The examiner gave the following directions: "Now, back up again, and read this as you would if you were on the radio." The examiner recorded a grade of the total effect of this performance in oral reading.

During these three performances, the examiner also recorded grades on the following speech habits: articulation, pronunciation, inflection, voice quality, and fluency.

In this way, there were eight scores recorded for each cadet officer. These eight scores were all according to the following schedule:

7. Excellent
6. Superior
5. Good
4. Average
3. Poor
2. Mild defective
1. Severe defective

CHAPTER III

RESULTS

The speech examination determined a rating for ability in articulation, pronunciation, inflection, voice quality, fluency, conversation, commands, and reading for 255 cadet officers in the junior and senior college levels of advanced military training. These 255 men ranged in age from 19 to 29; their mean age was 21 years and two months.

Articulation was assumed to mean explicitly the manner in which the articulators moved. The articulators were considered to be the lips, the jaw, the tongue, and the soft palate. Anatomic anomolies of these four functional organs and their associated proximal organs were also considered capable of modifying articulatory ratings. The 255 cadet officers ranged from two to six in their ratings in articulation; their mean articulation rating was 4.3.

Pronunciation was defined as the speech sounds as distinguished from the movements which produced these sounds. Phonetically, pronunciation was considered the product of a combination of articulation, respiration, and phonation. The 255 cadet officers ranged from two to seven in their ratings in pronunciation; their mean pronunciation rating was 4.7.

Inflection was conceived as more than the traditional construct of pitch variation and range, and instead the newer obtaining theory was accepted. This broader concept imputes inflection to be the kinematic manner in which the organism as a whole responds in the total situation with, of course, particular emphasis being given to the affective movements of expression and articulation. The 255 cadet officers ranged from two to seven in their ratings on inflection; their mean inflection rating

was 4.3.

Voice quality was understood to mean, physically speaking, the relative intensity of the fundamental and several overtones. The more the voice quality frequency-energy formants were distinct from the phonetic frequency-energy formants, the better the voice quality. Physiologically, voice quality was construed to be merely an index of the degree of the damping and masking of the glottal and phonetic sounds issueing from the labial orifice. The 255 cadet officers ranged from two to seven in their rating on voice quality; their mean voice quality rating was 4.0.

Fluency was postulated psychologically to include the overt behavior accompanying adjustment to the speaking situation and physiologically as being an index of the ability to perform continuous variation in successive patterns of articulatory movement without syllable, word, or phrase repetition, hesitations, prolongations, integrations, or conspicuous pauses. The 255 cadet officers ranged two to six in their rating in fluency; their mean fluency rating was 4.0.

Conversation was rated in accord with the total effect left by the cadet officers in that part of the examination designated as the conversation situation. The conversation situation required a formal type of response and an opposing habitual type of response which permitted this rating to be a composite score for the complex of affective states. The 255 cadet officers ranged from three to five in ratings on ability in conversation; their mean conversation rating was 4.0.

Ability in giving commands was rated as a composite score for both preparatory commands and commands of execution. The cadet officers gave a series on commands which would be adequate to form and move a company.

A command consists of two parts: the preparatory command, as "forward", which indicates the movement to be performed; and the command of execution, as "march", which indicates the movement. Judgments, which were the basis for rating on the command, included the inflection and cadence, the force and spirit of the voice, the distinctness and firmness of the preparatory command, and the emphasis of the command of execution. The 255 cadet officers ranged from two to six in rating on the ability to give commands; their mean command rating was 4.1. For 255 cadet officers there was a coefficient of correlation of .19 $\pm$ .06 between ability in giving commands and ability in articulation. For 172 cadet officers there was a coefficient of correlation of .11 $\pm$ .06 between ability in giving commands and ability in pronunciation. For 255 cadet officers there was a coefficient of correlation of .24 $\pm$ .06 between ability in giving commands and ability in inflection. For 255 cadet officers there was a coefficient of correlation of .36 $\pm$ .05 between ability in giving commands and ability in voice quality. For 255 cadet officers there was a coefficient of correlation of .19 $\pm$ .06 between ability in giving commands and ability in fluency. For 255 cadet officers there was a coefficient of correlation of .01 $\pm$ .06 between ability in giving commands and ability in conversation. For 255 cadet officers there was a coefficient of correlation of .14 $\pm$ .06 between ability in giving commands and ability in oral reading. For 252 cadet officers there was a coefficient of correlation of -.01 $\pm$ .06 between ability in giving commands and mean grade to date in basic and advanced military courses together with summer military camp.

The rating of the ability in reading was based on the total effect of the cadet officers performance. The 255 cadet officers ranged from two

to six in rating on ability in reading; their mean rating was 4.3.

This speech examination consisted of the above eight items, and these items taken together in a single mean rating per cadet officer gave a composite index called their rating in the speech examination. The 255 cadet officers ranged from 3.1 to 5.4 in their ratings in the speech examination; their mean speech examination rating was 4.2. For 252 cadet officers there was a coefficient of correlation of .36 $\pm$ .06 between this speech examination rating and their grades to date in basic and advanced military science including summer camp grades. For 135 cadet officers there was a coefficient of correlation of .89 $\pm$ .02 between this speech examination and the semester grade in a basic speech course called Essentials of Public Speaking, Course No. 202. For 94 cadet officers, there was a coefficient of correlation of .39 $\pm$ .08 between this speech examination and their semester grade in a basic mathematics course, College Algebra, Course No. 144. For 234 cadet officers there was a coefficient of correlation of .35 $\pm$ .06 between this examination and their semester grade received in a basic English course, Freshman Composition, Course No. 113. The semester grades in these three fundamental courses of the cadet officers were supplied by the college registrar. For 255 cadet officers there was a coefficient of correlation of .74 $\pm$ .03 between this speech examination (taken as a whole including commands) and the ability in giving commands (commands taken alone).

For 94 cadet officers there was a coefficient of correlation of .15 $\pm$ .06 between their mean grade to date in basic and advanced military science (plus summer camp) and their grade in a basic mathematics course, College Algebra, Course No. 144. For 139 cadet officers there was a coefficient of correlation of .07 between their mean grade to date for

basic and advanced military science (plus summer camp) and their semester grade in a basic speech course, Essentials of Public Speaking, Course No. 202. For 210 cadet officers there was a coefficient of correlation of .25 $\pm$ .06 between basic and advanced military grades (plus summer camp) and their grade in a basic English course, Freshman Composition, Course No. 113. For 135 cadet officers there was a coefficient of correlation of -.04 between their semester grade in a basic English course, Freshman Composition, Course No. 113, and their semester grade in a basic speech course, Essentials of Public Speaking, Course No. 202. A total of 55.8 per cent of the 255 cadet officers had had the basic speech course, Essentials of Public Speaking, Course No. 202. For 23 of the 255 cadet officers there was a record of their having had high school speech only. For 66 of the 255 cadet officers there was no record of their having had any speech training. For nine of the 255 cadet officers there was a record of their having had more than six semester credit hours of speech training. For all 255 cadet officers the range of speech training was from zero to 22 semester credit hours.

TABLE I

THE RATING OF 255 CADET OFFICERS ON FIVE BASIC SPEECH HABITS AND THREE FORMS OF SPEECH SKILL ON THE SCALE OF ONE TO SEVEN.

Type of Rating	Average Rating	Range of Ratings
Articulation	4.3	2 to 6
Pronunciation	4.7	2 to 7
Inflection	4.3	2 to 7
Voice quality	4.0	2 to 7
Fluency	4.0	2 to 6
Conversation	4.0	3 to 5
Commands	4.1	2 to 6
Reading	4.3	2 to 6

TABLE II

THE RELATION OF ABILITY IN GIVING COMMANDS OF CADET OFFICERS TO SPEECH HABITS AND SKILLS AND MILITARY ACHIEVEMENT.

No. of Officers	Catagory	Correlation with Ability in Giving Commands
255	Articulation	.19 $\pm$ .06
172	Pronunciation	.11 $\pm$ .06
255	Inflection	.24 $\pm$ .06
255	Voice Quality	.36 $\pm$ .05
255	Fluency	.19 $\pm$ .06
255	Conversation	.01 $\pm$ .06
255	Reading	.14 $\pm$ .06
252	Military Grades	.01 $\pm$ .06

TABLE III

SHOWING THE RELATION OF GRADES RECEIVED BY THE CADET OFFICERS TO THEIR ACHIEVEMENT DEMONSTRATED ON THIS SPEECH EXAMINATION (EIGHT FACTORS INCLUDED IN A COMPOSITE FORM).

No. of Cadet Officers	Relation of Grades	Correlation with the Speech Examination
255	Military	.36 $\pm$ .06
143	Speech	.89 $\pm$ .02
94	Mathematics	.39 $\pm$ .08
234	English	.35 $\pm$ .06

The highest 25 cadet officers in ability in articulation had a mean rating in articulation of 3.9, and in ability in giving commands of 4.5. The lowest 25 cadet officers in articulation habits had a mean rating of 2.9 in ability in articulation, and 4.0 in ability in giving commands. The 25 high cadet officers in ability and pronunciation had a mean rating of 6.1 in ability in pronunciation and a mean rating of 4.3 in ability in giving commands. The low 25 cadet officers in ability in pronunciation had a mean rating of 3.1 in ability in pronunciation and a mean rating of 3.7 in the ability in giving commands. The high 25 cadet officers in the ability in inflection had a mean rating of 6.0 in the ability in inflection and a mean rating of 5.0 in the ability in giving commands. The low 25 cadet officers in the ability in inflection had a mean rating of 3.1 in the ability in inflection and a mean rating of 3.6 in the ability in giving commands. The high 25 cadet officers in the ability in voice quality had a mean rating of 5.6 in the ability in voice quality and a mean rating of 4.7 in the ability in giving commands. The low 25 cadet officers in the ability in voice quality had a mean rating of 2.8 in the ability in voice quality and a mean rating of 3.8 in giving commands. The high 25 cadet officers in ability in fluency had a mean rating of 5.1 in the ability in fluency and a mean rating of 4.3 in the ability in giving commands. The low 25 cadet officers in ability in fluency had a mean rating of 3.0 in the ability in fluency and a mean rating of 3.8 in the ability in giving commands.

TABLE IV

SHOWING THE RELATION OF ABILITY IN GIVING COMMANDS AS A FUNCTION OF SPEECH HABITS FOR THE 25 HIGHEST AND THE 25 LOWEST CADET OFFICERS IN SPEECH HABIT RATINGS.

Group	Speech Habit	Rating in Speech Habit	Rating in Ability in Commanding
High	Articulation	5.9	4.5
Low	Articulation	2.9	4.0
High	Pronunciation	6.1	4.3
Low	Pronunciation	3.1	3.7
High	Inflection	6.0	5.0
Low	Inflection	3.1	3.6
High	Voice Quality	5.6	4.7
Low	Voice Quality	2.8	3.8
High	Fluency	5.1	4.3
Low	Fluency	3.0	3.8

A comparison was made between the 25 most superior and the 25 most inferior cadet officers in ability in giving commands and the five fundamental speech processes. The 25 cadet officers who rated highest in ability in giving commands had a mean rating of 5.4 in that ability in contrast with the 25 cadet officers who rated lowest with a mean rating of 2.6 in ability in giving commands, a difference of 40.0 per cent. Those superior in ability in giving commands had a mean rating of 4.6 in ability in articulation in contrast to the 25 inferior in giving commands who had a mean rating of 4.0. Those superior in ability in giving commands had a mean rating of 5.0 in ability in pronunciation in contrast to the 25 inferior in giving commands who had a mean rating of 3.7. Those superior in ability in giving commands had a mean rating of 4.7 in ability in inflection in contrast to the 25 inferior in giving commands who had a mean rating of 3.8. Those superior in ability in giving commands had a mean rating of 4.6 in ability in voice quality in contrast to the 25 inferior in giving commands who had a mean rating of 3.5. Those superior in ability on giving commands had a mean rating of 4.5 in ability in fluency in contrast to the 25 inferior in giving commands who had a mean rating of 3.8.

TABLE V

THE 25 MOST SUPERIOR AND THE 25 MOST INFERIOR CADET OFFICERS AT ABILITY IN GIVING MILITARY COMMANDS, SHOWING RESPECTIVE MEAN RATING OF THE TWO GROUPS IN FIVE SPEECH HABITS.

Abilities	High	Low	Per Cent Difference
Articulation	4.6	4.0	8.6
Pronunciation	5.0	3.7	18.6
Inflection	4.7	3.8	12.9
Voice Quality	4.6	3.5	15.7
Fluency	4.5	3.8	10.0

The six cadet colonels and the three cadet majors were placed into a group of nine cadet officers of the highest military ranking and it was found that they had a mean average rating of 4.4 in this speech examination, a difference of 2.5 per cent above the average of all 255 cadet officers. The 32 cadet captains were placed into a single group, second only to the colonel-major group, and were found to have a mean rating of 4.2 on this speech examination, which score is identical with the mean rating of all 255 cadet officers.

A sub-investigation was made on pronunciation. The problem was concerned with whether or not ability in pronunciation was solely function of number of words mispronounced. In order to show this, 42 cadet officers were studied for their mistakes in pronunciation of the words in the reading test at the time when this reading test was given in the speech examination. Of the 42 cadet officers in this sub-investigation, 40 mispronounced lingerie, 21 mispronounced exquisite, 17 mispronounced fiancee, 16 mispronounced boudoir, 11 mispronounced negligee, gesture, and forget, six mispronounced inevitable, three mispronounced disenchantingly, hinting, two mispronounced glamorous, fascinating, privately, woman, and one mispronounced practical, fascinating, fancies, been, on, she's, that, the, whom, you're, when, flatter, spend, much, every, it's, from, subject, do. Pronunciation is shown by a coefficient of correlation of .57 $\pm$ .11 to be related to relative number of words mispronounced, but frequency of mispronunciations is not predictive of the pronunciation rating and is probably related to intermediate factors such as the acoustic quality of the phonetic elements, patterns, and hypha.

There is a very close relationship between basic speech habits and

speech pathology. Speech pathology nomenclature is closely related to the classifications made of speech habits. Dyslalia is a functional or structural defect of articulation and is dependent on malfunctioning of the lips, jaw, tongue, or palate, or malformation of these articulators. Dysrhythmia is a functional defect of the cadence and inflective elements of voice and the style of movement of the articulators. Dysphonia is a functional or organic defect in voice quality which muffles or interferes with phonation. Dysphemia is an intermittent and variable fluency disorder symptomatic of psychoneurosis.

A total of 2.3 percent of the 255 cadet officers were to found to be defective in speech habits of the order of two on the rating scale and no cadet officer was found to have a severe speech defect of the order of one on the rating scale. Dyslalia affected two cadet officers who rated two in ability in articulation. These two cadet officers had a mean rating of 4.0 in conversation, 4.0 in ability in giving commands, and 3.4 in oral reading. Dysrhythmia affected one cadet officer who had a rating of two in inflection, a rating of four in conversation, three in ability in giving commands, and four in ability reading. Dysphonia affected four cadet officers who had a rating of two in ability in voice quality. These four cadet officers had a mean rating of 4.0 in conversation, 3.2 in ability in giving commands, 3.7 in ability in reading. Dysphemia affected no cadet officers since none received a rating of less than three in ability in fluency.

A mean rating of two was received by six cadet officers in ability in giving commands. Carrying out the above logic, these cadet officers were considered defective in their skill in giving commands. They received

a mean rating of 4.6 in ability in articulation, 4.3 in ability in inflection, 3.3 in ability in voice quality, and 4.0 in ability in fluency. They ranged from four to six in ability in articulation, three to five in ability in inflection, two to five in the ability in voice quality, and three to five in the ability in fluency.

Each cadet officer received through his rating a definite evaluation in the several speech habits and skills, and furthermore in addition to these ratings many cadet officers had added special qualifiers, more rigidly describing their individual deviations in speech habits and skills. For example, a special note to the effect that hearing was defective was added to the record of five cadet officers, and three were believed to have facial dysarthria. The examination showed that 27 cadet officers had incorrect stress on their inflection in the giving of commands, and 24 cadet officers did not use adequate force in giving commands, and six cadet officers did not evidence adequate "snap" in giving commands. After inflection ratings on 23 cadet officers examined a jerkyness in rate was recorded, nine spoke too rapidly, and one too slow. After the ratings on voice quality, qualifications were added to 92 cadet officers that the voice was too high, to 90 that there was nasality, to 45 that the voice was raspy, to 18 that the voice was shrill, to 16 was noted the presence of whang, to 10 was added that the voice was thin, to nine was noted habitual twang, to seven was added that the voice was harsh, to six that the voice broke, to five was added the qualification ventricular-ophonia, to four was added that the voice was husky, to three was added that the voice was raucous, pre-pubescent, penumophonic, and to two was added the description "gravel voice" or that the voice was flat. After the articulation rating, 93 cadet officers were described as not opening

their mouths sufficiently wide, 27 were defined as lispers, 22 as having bad teeth formation, 15 as various sibilant idiosyncrasies, 11 as clenching the teeth while speaking, five as stammerers, five as bothered with zezaycism, four had brogues, two had paralambdalalia, and one as demonstrating macroglossia.

CHAPTER IV

CONCLUSIONS

There were no severe speech defects found in the 255 cadet officers examined and there were not enough mild defects found to warrant any conclusions. The cadet officers were found to have a normal distribution otherwise on each of the speech habits so that ability in giving military commands and achievement in military science was not found to be a function of any one speech habit. Grades of college courses in mathematics, English, and speech had no relation to achievement in military science. Grades in college courses in English, mathematics, and military science have no relation to the present examination of speech habits and skills, but the grades in the basic college speech course give a reliable prediction of the composite rating on the present speech examination. This college course offers training in skill in one type of speech performancy and three-eights of the speech examination was an evaluation of different skills in speech. However the comparison between this speech examination and the basic college speech course is not one of skill versus skill but is skill plus habits versus a fourth skill, public speaking. Rating in the ability to give commands predicts fairly well the composite score on the whole of this speech examination. Grades in college English were found not to be related to grades in college speech.

The mean rating of the 255 cadet officers showed that they were average in basic speech habits with the exception of pronunciation, which was slightly above the average. The average rating in the three skills believed to be related to the performance of military duty was also average.

Their ability in giving commands was related to no particular habit or skill other than the ability to give commands. The cadet officers who rated highest in any speech habit, as a group, consistently rated higher in ability in giving commands, and this higher rating was most superior to the inferior group of cadet officers, who rated lowest in the basic speech habits, in regard to inflection and voice quality. Those cadet officers who were most superior in ability in giving commands were consistently superior to the cadet officers inferior in giving commands in all five basic speech habits, and the rank order of difference from the greatest to the smallest was pronunciation, voice quality, inflection, fluency, and articulation. Military rank had no relation to any rating in the speech examination; which is to say that the colonels were no better than the sargeants, etc.

CHAPTER V

IMPLICATIONS

If speech has any relation to achievement in military science and ability in giving commands this study has given no indication of it. It would seem that high ability in speech habits and skills are not in themselves sufficient and adequate to be a prerequisite for military training. This study does not indicate, however, that training in commands should not be a sub-course content for the cadet officer's training, but it does indicate that any ability they gain from this sub-course in giving commands guarantees in no way any particular level of achievement in military science. It would further seem that ability in giving commands is not particularly fundamental as a basis for recommendations for military training or induction into the army. This study would seem to indicate that ability in speech is not needed by draftees other than that perhaps the present army physical standards are adequate regulations in regard to handicapping and disabling speech defects.

Whether or not any army training program should include speech training is not exhaustedly indicated here, but certainly the information to date would not recommend it. This does in no way mean that particular training in giving commands, directions, reports, and making announcements need not be given any consideration in a defense program which trains officers. But certainly any army's commissioned men do not require special achievement or training in fundamental speech habits.

It is obviously indicated that if the armed forces need men able in the ability in giving commanding, that these men should be trained specifically in the ability to give commands only. There is no background

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work needed in basic speech habits. No associated skills in speech need to be considered. This is no isolated example, since it generally is agreed in advanced educational circles that if a student is to be trained in any specific skill, he must be given training in that skill, and not in different skills however closely related. It is only within an institutional situation that administrators overlook such a view in their efforts to artificially divide the educational process into three-hour semester courses, which situation demands the inclusion of unnecessary background content to fill up the whole of the seventeen weeks allotted to the subject.

Obviously no speech corrector or pathologist is needed in army service from the induction board or through the service. Perhaps specialists in speech correction might find some duties in eliminating speech defectives from the ranks of the men who have received their draft call, or correcting speech disorders in civilians before they receive their draft call so that they could pass their physical examinations. Beyond the question of who is to be drafted it would seem that it should be concluded that the subject of defective speech habits is in no way the concern of the armed forces, and the Federal Board of Hospitalization policy, since September, 1940, has eliminated the armed forces from the concern with speech defects incurred during military duties.[19]

19. Annual Report of the Administrator of Veterans Affairs for the Fiscal Year Ended June 30, 1940, Washington, 1941, p. 1.

The present policy is to dismiss such men from the Service. Thus speech defects give concern only before being drafted or after dismissal from the service.

CHAPTER VI

SUMMARY

This is a study of the relation of speech defects, speech habits, speech skills, and grades in basic college courses in speech, English, and mathematics to grades in military science, to ability in giving military commands, making military reports and announcements. An individual speech examination was given to 255 cadet officers in the advanced military courses at Oklahoma Agricultural and Mechanical College which included an analysis of articulation, pronunciation, inflection, voice quality, fluency, ability in giving commands, ability in conversation, and ability in reading aloud. It was found that proficiency in these habits and skills had nothing to do with achievement in military science. It was further found that ability in reading aloud, in conversation or any other speech habit was not related to ability in giving military commands. Achievement in such college courses as mathematics, English, and speech are not related to military achievement.

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Date: May 11, 1942

Name: Ernestine Leverett Position: Student

Institution: Oklahoma A. & M. College

Location: Stillwater, Oklahoma

Title of Study: The Speech Habits of Cadet Officers

Under Direction of What Department: Secondary Education

Scope of Study: This is a study of the relation of speech defects, speech habits, speech skills, and grades in basic college courses in speech, English, and mathematics to grades in military science, to ability in giving military commands, making military reports and announcements. An individual speech examination was given to 255 cadet officers in the advanced military courses at Oklahoma Agricultural and Mechanical College which included an analysis of articulation, pronunciation, inflection, voice quality, fluency, ability in giving commands, ability in conversation, and ability in reading aloud.

Findings or conclusions: It was found that proficiency in speech habits and skills had nothing to do with achievement in military science. It was further found that ability in reading aloud, in conversation or any other speech habit was not related to ability in giving commands. Achievement in such college courses as mathematics, English, and speech are not related to military achievement.

ADVISER'S APPROVAL

OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE

THE GRADUATE SCHOOL

To The Members of the Committee:

You are requested to act as a committee for the examination of Ernestine Leverett for the degree of Master of Science.

This examination is scheduled to be held in

Mr. Chauncey's Office, Morrill Hall,

Saturday, May 23, 1942 at 11:00 a.m.

Major: Education

Minor:

O. C. McIntosh
Dean of the Graduate School

COMMITTEE:

Professor Guy A. Lackey, Chairman
Professor M. R. Chauncey
Professor Frank Fuller
Professor C. H. Voelker

The Committee on Advanced Degrees recommends that the Thesis or Research be given special attention during the examination. Questions in major and minor departments should be over the fields rather than on specific courses. Questions requiring thought and use of information are preferable to those requiring memory only.

Each member of the committee will please arrange to be present during the entire examination.

IF YOU CANNOT ATTEND, ARRANGE FOR A SUBSTITUTE AND NOTIFY THE CHAIRMAN OF THE COMMITTEE OF THE CHANGE.