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LINGUISTIC STRUCTURE AND PERSONALITY DEVELOPMENT

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

Corrine Snyder Cope, A.B., B.Sc. in Edu., M.S.

* * * * *

The Ohio State University
1968

Approved by

A handwritten signature in cursive script, reading "Francis P. Robinson". The signature is written in dark ink and is positioned above the printed name "Francis P. Robinson".

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ACKNOWLEDGMENTS

I wish to express my deep appreciation to Dr. Francis P. Robinson, my adviser, who gave generously of his talents and time not only throughout this project but during my entire doctoral training program; whose great knowledge and interest was a constant source of inspiration to me; who encouraged me when I needed it most; and from whom I learned the importance of well-planned, painstaking research and the necessity for reporting it as clearly and accurately as possible. I am proud to have been his student.

I wish to thank Dr. Frank M. Fletcher and Dr. Maude A. Stewart who read both the original proposal and the completed dissertation and made numerous helpful suggestions.

I am especially indebted to Dr. Milton E. Foreman for having made available to me the verbatim transcriptions used in this research.

I am indebted to Dr. Robert J. Wherry for help in interpretation of the factor analysis and to Mr. Michael Donovan for advice in planning the statistical analyses.

I wish to thank members of my family not only for their encouragement but also for their very real help in the endless hours of tabulation of the data.

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CHAPTER I

INTRODUCTION

Language as a complicated system of abstract symbolic representations is unique to the human species. Man's ability to use the abstract signs and symbols, both oral and written, which are called language, differentiates him from the infrahuman animals. Oral language behavior, or speech, is man's major activity throughout his lifetime. It is part of almost everything he does. Add to this his activities in the secondary language forms, writing and reading, and the statistics are impressive. This includes not only his output of words but also his intake of speech and writing. Carroll (1964) estimates that the average college student hears approximately 100,000 words in a day not including those he produces himself. He could read, even at a modest rate, an additional 90,000 words a day in the course of his study. Such a student would be exposed to three-quarters of a billion words a year. Carroll estimates that even a person who is not particularly talkative can speak a billion words in a lifetime.

Although the average child speaks his first word at about one year of age (cf., Bayley, 1933; Cattell, 1940; McCarthy, 1954; Shirley, 1933), he is using 15,000 words a day between his third and fourth year (McCarthy, 1960).

Since human life as we know it could not exist without language, it would seem that language would early have had a predominant place in psychological research. Quite the contrary has been true. Wundt and his followers in Europe and the Structuralists in America depended upon the vehicle of language in their primary psychological method of introspection, but the study of language itself was left to the linguists.

Study of Language as Behavior

Until the last two decades, the interest of psychologists in language often has been incidental to their interest in other areas of human behavior, as thinking, learning, memory, and problem-solving. Ebbinghaus (1913) in his study of memory was the first to recognize the importance of language itself as a variable. As a partial control of this variable, he devised a series of nonsense syllables for use in his experiments. Subsequent experimentation in learning often followed his example of using meaningless material or concentrated on animal learning, both of which

procedures were based on the assumption that language learning itself required no direct study.

Notable exceptions to this disregard for the importance of language behavior as suitable for study were Carroll (1938), Skinner (1937), Thorndike (1938), Zipf (1935), and numerous child and developmental psychologists. Beginning in the 1920's Bayley (1933), Gesell (1925, 1928), Lewis (1936), McCarthy (1929, 1930), Nice (1920, 1925) and others were observing oral language behavior in infants and children. McCarthy (1954) reviewed the hundreds of studies undertaken until the 1950's which focused on all aspects of the language behavior of children. She suggested that the increased interest in language development after 1925 was due largely to the recognition of its relationship to cognitive development.

The first suggestion that language use and structure may be intimately related to personality traits of an individual came from the research of the child psychologists. Most of these studies dealt with language disorder syndromes and with the effects of environmental factors on language development. Both were found to relate to personality development (for a comprehensive summary of these studies, see McCarthy, 1954, pp. 584-597, 601-613).

McCarthy (1954) wrote that there has been increasing recognition "of the important clues that can be gained as to the nature of an individual's personality adjustment from a study not only of the content but also of the manner of his speech and the form of his verbal expression both oral and written (p. 492)."

Lewis (1963) links language and thought directly to personality development in the infant and child. He argues that neither language nor development can be understood unless these are considered as an integrated whole. He sees language learning as a dual process. The child's language "influences his thought and feeling; his thought and feeling influence his speech and language (p. 8)."

A New Look at Language

In the last two decades a discipline known as psycholinguistics has emerged (cf., Chomsky, 1957; De Cecco, 1967; Jakobovits & Miron, 1967; Lenneberg, 1964; Osgood & Sebeok, 1965; Saporta, 1961). Some of the psychologists involved in this new approach (Brown, 1958; Jakobovits & Miron, 1967) prefer to refer to their new endeavor as a study of the psychology of language. By whatever name this research is designated, the emphasis is on language as a behavior which must be studied if the complexities of human behavior are to be understood.

The approach is interdisciplinary encompassing psychology, linguistics, sociology, anthropology, and biology.

An emphasis in psycholinguistics is upon the referents of words (Brown, 1958; Saporta, 1961; Osgood & Sebeok, 1965). A word is not a person, a thing, an event, nor an experience. It is a symbolic representation; it refers to a person, a thing, an event, an experience. Just how a person builds his referent system and develops his meanings has been an area of much speculation. Osgood (Osgood, Suci, & Tannenbaum, 1957) developed a semantic differential scale from the theory that an individual's referent system would give insight into his personality. The numerous adjective checklists (Gough, 1950; Merrill & Heathers, 1954; Heilbrun, 1958) developed as measures of self-concept are based on the assumption that the meaning of specific adjectives describes definite personality factors. In a sense all personality inventories are built upon the theory that the individuals in a speech community have developed similar referent systems for the same words, similar enough that they can be used as measures. This assumption may or may not be true.

In this present study an attempt will be made to control referents by the selection of measures used in the analysis. The words I, me, mine, myself are

generally accepted by people in the English-speaking community as referents to self. The words we, us, our, ours, ourselves refer to the self and at least one other person. The use of negatives, such as no, not, never, nothing, are understood by most people as meaning anti or against something. Verbs can be separated into time referrals of past, present, and future. These are some of the measures that will be used in the present research.

Counseling as Verbal Therapy

The primary function of language is communication or social contact. Counseling psychologists early recognized its importance in the counseling experience (Robinson, 1950, 1955; Rogers, 1942; Tyler, 1953), and much of the early research in counseling was devoted to the study of language behavior in the interview (cf., Auld & Murray, 1955; Cartwright, 1957; Robinson, 1955; Snyder, 1953).

Robinson (1950) wrote that "any problem disturbing an individual is usually poorly verbalized and vague (p. 54)." More recently Levy (1963) emphasized the importance of language in therapy when he proposed that psychological interpretation may be the means by which success in therapy is accomplished. He defines psychological interpretation as behavior in the interview which brings "an alternate frame of reference, or language system, to bear upon a set of observations

or behaviors, with the end in view of making them amenable to manipulation (p. 7)." It is the change in language system which he sees as the important factor.

The first psychotherapist to utilize language behavior in the treatment process was, of course, Sigmund Freud (1938). Regardless of whether one accepts or rejects Freud's general premises and his method of psychoanalysis as treatment, the entire structure of counseling and clinical psychology is built upon the foundations he established. Regardless of what personality theory one subscribes to, the counselor is indebted to Freud for having initiated the "talking cure." Freud (1920) stated that "in psychoanalytic treatment nothing happens but an exchange of words between the patient and the physician (p. 21)." From Freud's system developed all the other systems of verbal therapy. Ford and Urban (1963) emphasize that all verbal psychotherapies are based upon Freud's premise that "if one can arrange a special set of conditions and have the patient talk about his difficulties in certain ways, behavior changes of many kinds can be accomplished (p. 109)." They add that the changes "effected in behaviors . . . appear to be inaccessible to change by any other method (p. 109)."

Research of Language Behavior in Counseling

Although language only recently has become a subject for intensive study in the general field of psychology, it has long been a major topic of research for counseling and clinical psychologists. Most of the early research in psychotherapy was devoted to the study of language behavior in the interview. Analyses of verbatim transcriptions of interviews, a method begun by Porter (1943), was a common research activity. These early studies were classified as content versus process (Goldman, 1954) or were concerned with the most effective unit for study. Later reviewers (Auld & Murray, 1955; Mardsen, 1965) categorized all of this research as content-analysis. How it is grouped depends largely upon the definition of "content." The earlier grouping of content and process did emphasize some of the different ways in which researchers were looking at language.

1. Content versus Process Research

Content studies dealt with client language behavior, and the emphasis was upon evidence of change during treatment as indicated by the words the client used. Two popular measures were the Discomfort-Relief Quotient, the DRQ, (Dollard & Mowrer, 1947) and the Positive-Negative-Ambivalence Quotient, the PNAvQ, (Raimy, 1948). All words the client spoke were considered

when the DRQ was used whereas the PNAVQ was generally used to test remarks about self.

The counselor's language behavior was the focus of the process studies, and the emphasis here was upon how he used his language patterns as a tool in the counseling experience. Cartwright (1957) suggested the category of form-analysis as distinct from either content or process. In these studies the variables were essentially grammatical, as the Type-Token Ratio, clause length, adjective-verb ratio, use of nouns, use of pronouns, and so on. The present study would fall into this classification.

Excellent summaries of this research are included in the reviews of Auld and Murray (1955), Cartwright (1957), and Mardsen (1965). A few of the studies will be mentioned here to show the range of topics. Those pertinent to the present research will be discussed more fully in Chapter II.

Robinson (1949), Rundquist (1952), and Muthard (1953) studied the relative effectiveness of different types of units used in interview analysis. The problem of unit of analysis is a recurring one not only in the area of psychotherapy but also in most psychological research. It is a present controversial topic in linguistic or structural analysis.

Snyder (1945) classified client remarks; Seeman (1948) classified those of the counselor. Elton (1951)

studied counselor remarks as affected by the client and the topic discussed. Muthard (1953), Danskin (1955), Hoffman (1959), and Campbell (1962) researched counselor subroles as indicated by his verbal behavior. Dipboye (1954) assessed counselor style as evidenced by discussion of different topics in the interview. Brams (1961) studied counselor characteristics and their relationship to effective communication in counseling.

Carnes and Robinson (1948) considered the role of client talk in the interview and found a correlation between client talk ratio and client responsibility for progress of the interview. Page (1953) assessed the predictive value of six language measures and found that total words of clients in the first interview was the only measure that correlated with outcome success.

Raimy (1948) found client shifts from self-depreciation and ambivalence toward self to self-approval as treatment was termed successful. Todd and Ewing (1961) replicated Raimy's study obtaining similar results. These changes were measured by changes in the self-referral words used by the client. Braaten (1961) studied movement from non-self to self on the part of the client as indicated by his language. Berg (1958) made a detailed analysis of word choices in the published verbatim transcription of Roger's (1942) case

of Herbert Bryan. These word choices he correlated with personal adjustment.

Studies of content-analysis, as defined by Mardsen (1965) to include all of the above, have continued to be popular particularly among client-centered therapists. Another type of research of language behavior in the interview has developed among the counselors and clinicians with a learning theory or behavior modification orientation. These are studies of verbal conditioning and reinforcement. Language is important here for two reasons; it is the behavior being conditioned and is also often the reinforcing agent.

2. Verbal Conditioning in the Interview

Krumboltz and his students (Ryan & Krumboltz, 1964; Krumboltz & Thoresen, 1964) demonstrated that decision-making remarks and information-seeking behavior can be increased both within and outside the interview by verbal conditioning. Greenspoon (1955), and Krasner (1958, 1963) earlier had shown that the probable frequency of verbal responses could be increased by the use of positive reinforcement. Matarazzo, Weitman, Saslow, and Weins (1963) found that sentence length on the part of the counselee could be influenced by the sentence

length employed by the counselor. Cahoon (1965), Cole (1965), Thompson (1965) have also demonstrated the effectiveness of verbal conditioning in the interview.

3. Semantics, or Word Meanings, and Counseling Research

Some recent studies have emphasized yet another aspect of language behavior in the interview: word meanings, and how the similarities and differences of these in the client's and counselor's language systems affect counseling. Results of this research indicate that in "successful" counseling words and word meanings in the client's and counselor's language systems move closer together. These studies would seem to support the theoretical positions of Weitz (1954) and Levy (1963) on the importance of language and the manipulation of events by it in therapy. Levy postulates that the effect of what he calls psychological interpretation is predictable "to the extent that therapist and patient possess a common core of language meaning and usage. (p. 282)."

Rosenthal (1955), Nawas and Landfield (1963), Landfield and Nawas (1964), Cook (1966), and Persons and Pepinsky (1966) found success in therapy to correlate with adoption of counselor values by the client. Evidence of this adoption was judged largely through the medium of the client's language system, both oral and

written, through answers to tests and questionnaires.

The Problem

From this research of oral language behavior in the psychotherapeutic interview, several studies suggest that an individual's use of certain words and structural patterns may be related to personality traits. Other evidence suggesting such a relationship comes from child and developmental psychology. Research suggests a correlation between language behavior and personal growth. Since most language behavior of an individual is oral and spontaneous, samples of such language would seem the most appropriate to analyze for any relationships which may exist.

This present research is designed to analyze structural dimensions of spoken language samples and to determine if these are related to measured personality development. The oral speech patterns of two groups of college students will be studied. These two groups have been measured as different in personality development. The purpose of this study, then, is to investigate the proposition that two groups of people who differ on various personality measures also differ in their oral language behavior as determined by certain linguistic measures.

This research is designed further to investigate the possibility that basic factors exist in language structure. Seventy-five linguistic measures will be used in the present study. This is more than has been used in any previous research of this kind. Since many of these measures would seem to overlap, they will be factor analyzed to determine if basic factors exist in linguistic patterns of behavior.

CHAPTER II

HISTORY OF THE PROBLEM

The previous chapter summarized briefly the importance of language, the psychologists' approach to the study of language as behavior, the importance of language to the counseling psychologist, and the counseling psychologists' methods of researching language behavior. A close relationship between language behavior and personality development has been suggested by research. This present study is an attempt to investigate further this relationship, not in a counseling setting but in a setting where subjects from a general college population participate in spontaneous oral language behavior. If a relationship exists between personality development and language use, this relationship should be evident in other than client language behavior in the interview. If a relationship exists, there should be a difference between the ways in which more psychologically healthy and less psychologically healthy persons use language.

Certain difficulties are inherent in a study of this kind and need to be considered. Two things are to be measured and compared, language behavior and

personality development. First, decisions must be made as to the specific elements of language behavior to be investigated and how best these can be measured. Secondly, the concept of personality development must be defined and criteria established for measuring it. These two tasks are the subject of this chapter.

Research and theory indicating a relationship between language use and personality growth come from the areas of child development and psychotherapy.~ Relevant studies from these two areas will be reviewed with special consideration of the measures used.

Previous researchers investigating language patterns of adults generally have compared a population exhibiting deviate behavior, as schizophrenics, with a "normal" population, as college students, (cf., Chotlos, 1944; Fairbanks, 1944; Mann, 1944) or have considered changes in the language style of one or more subjects as they participated in a series of therapy sessions (cf., Berg, 1958; Raimy, 1948; Snyder, 1953). In every case significant differences in language patterns were found. In the present study an attempt will be made to determine if these or other differences exist between the language patterns of two groups who measure as different on certain dimensions of personality

development but who are from the same general population, students on a college campus.

Studies of language behavior from developmental psychology would seem particularly appropriate to this research because most of these have used subjects from the general population termed "normal." Many of the measures developed and found meaningful were used first with children, then later adopted for studies of psychotherapy. Most of these developmental studies are of oral language behavior which again makes them pertinent to the present research. Measures used were developed for measuring the dimensions of oral language as it is used by a general population.

Research of Developmental Language Behavior

From developmental psychology comes the earliest and greatest number of studies of oral language behavior. Despite this large amount of research (McCarthy, 1954), most of it has been concerned with language acquisition and the development of language skills. Frequently the statement is made that language is intimately related to adjustment (cf., Lewis, 1963; Loban, 1964; McCarthy, 1954; Templin, 1957), but studies investigating this relationship are difficult to find. Many of the researchers state that this relationship exists then

study language acquisition and the learning of language skills. Exceptions to these are the studies of language disorders and accompanying personality disorders (for a review of these, see McCarthy, 1954, pp. 602-613).

The literature concerning language as behavior is filled with studies of language maturity. Although it may be assumed that a relationship exists between language maturity and personality, this cannot be asserted definitely without substantiation. This substantiation is difficult to find. However, since much of the research in developmental psychology measures language maturity, since language disorders and personality disorders seem related, and since it is theorized that personality maturity is related to language maturity, the measures that have been found to differentiate between language maturity and immaturity will be considered here.

Two major problems in a study of the structural dimensions of language, the concern of the present research, are (1) the units of analysis and (2) the techniques of measurement. Questions are being raised by the psycholinguists about some of the traditional units and techniques (Brown, 1958; Chomsky, 1957; Loban, 1963; Spache, 1968), and new measures have been suggested and used (Bormuth, 1964; Loban, 1963, 1964; Strickland,

1962). Since recent research and theory question but do not disprove the value of some of the old measures, both the old and the new measures will be considered here.

1. Units of Analysis

Traditional units of analysis used in developmental studies of oral language behavior after children have learned to speak are words, phrases, clauses, and sentences.

The psycholinguists, utilizing research and theory from linguistics, are questioning these units of analysis. The "word" as a unit is under attack. Greenberg (1965) states "the word as a unit occupies a paradoxical situation . . . no generally accepted and satisfactory definition exists and some linguists deny validity of the word altogether, relegating it to folk-linguistics (p. 66)." Units more acceptable to the linguists because of precise definition are phonemes, the smallest unit of speech with distinctive sound elements, and morphemes, the smallest semantic, or meaningful, unit. Words and morphemes are the same in some instances but not in others. Although recognizing the difficulty of defining "word" other than (a) as an arbitrary way of writing down speech sounds that have

acquired meaning, and (b) as a language unit generally accepted in developmental language behavior, words as a unit of analysis will be retained for this research.

Other units of analysis, phrases, clauses, and sentences, are streams of words in sequence. Sentence length as a measure of language maturity has been popular since Nice (1925) found it significant. In her review McCarthy (1954) states "sentence length is a measure which continues to show increase in normal children until maturity (p. 550)", and she defends the mean length of sentence as a "reliable, easily determined, objective, quantitative, and easily understood measure of linguistic maturity (p. 551)."

In recent years "sentence" has become even more controversial than "word", particularly in oral language behavior. Fries (1952) defines a sentence as those words between two end marks of punctuation. This is applicable to written language but not to oral. Run-on sentences, complete thoughts which follow one after the other with no break between, and incomplete and tangled sentences are very common and unique characteristics of oral language behavior of both children and adults. In earlier studies these were disregarded or omitted because they were difficult to analyze or were considered unimportant.

A spontaneous oral language sample from a college student participating in a group discussion is an example:

Because why, well, why couldn't they, uh, it should be something 604, Science Teaching Methods, well, why couldn't you learn the whole scope of the thing in one course, I mean, like the way it is now, 535 is Teaching Methods, and then 604 is Science Teaching Methods.

And another:

Well, I think I've found that, I found that when I first started going through these, that they just didn't seem to have anything to do with anything, but as I get farther along, it seems as though you go over the same thing, but uh, maybe they think they won't do you any good for teaching, but you'd be surprised how much you gain in yourself, and you get in front of a bunch of kids and you know it comes back to you, and you say, "Well ya, I remember that."

As stated before, a major problem in analyzing oral language behavior is determining how best to segment the stream of vocalizations into units of analysis. Loban (1963, 1964) and Strickland (1962), in their studies of children's speech, employed three new units of analysis developed by a group of psycholinguists and researchers. These were named the phonological unit, the communication unit, and the maze.

The phonological unit is defined as the stream of words occurring between two silences and is determined

by intonation patterns such as stress and pause. The two previous examples of college student speech were each a single phonological unit. Had the student written down his ideas expressed above, he likely would have divided them at some places by end punctuation marks. However, in speaking he did not use silences to separate his ideas.

The communication unit is defined as the shortest group of words which convey meaning. This is the same as Watt's (1948) definition of what he called "the natural linguistic unit (p. 65)." It is a group of words which cannot be further divided without losing some of its meaning. In the first sample above, the group of words "why couldn't you learn the whole scope of the thing in one course" is a unit of communication. To divide it further and say only "why couldn't you learn" changes the essential meaning of that communication unit. In another situation "why couldn't you learn" could be a communication unit since it does convey meaning. Loban (1964) formally defines the communication unit as "an independent clause between two silences (p. 22)." It is an independent clause with its essential modifiers.

The language "maze" is a word or group of words which does not make semantic sense. Strickland (1962) classified these as (a) noises, or unintelligible sounds as "uh" and "er," (b) holders, such as "well," "I mean," and "you know," (c) repeats, or the repetition of words such as "I know-I know," and (d) edits. This last involves a correction or change in the language pattern in an attempt to communicate and often involves more words than the first three. Loban (1964), in discussing these confused and tangled language patterns which are very characteristic of spontaneous speech, states:

The linguistic troubles of the subjects resemble very much the physical behavior of a person looking for a way out of an actual spatial maze. He thrashes about in one direction or another until, finally, he either abandons his goal or locates a path leading where he wishes to go. Sometimes he stumbles upon a way out; sometimes he has presence of mind enough to pause and reason a way out. (p. 24)

Loban found that as children became more mature in language habits they produced more communication units and increased the average number of words in those units and at the same time reduced their total number of words per maze.

Since communication units and mazes have been found related to language maturity and since they are

meaningful units of analysis for spontaneous oral language behavior, they also will be used as units of analysis in this research.

Units of analysis to be used for the present research are words, communication units, mazes, and utterances. This latter is the stream of vocalizations emitted by one person until he stops and another begins. Fries (1952) has named this "the utterance unit (p. 28)."

2. Techniques of Measurement

Various techniques may be used in analyzing oral language when using the above units. Quantitative measures used in developmental studies have included amount of talking, length of response, parts of speech, vocabulary, and subordination. One of the oldest and simplest measures is that of totaling the various units. The amount of talk, or the total number of words, as a measure has been criticized repeatedly as being limited in scope, but it has the one advantage of being a completely objective measure. The totals of communication units and mazes, however, have been found to correlate with maturity in language development through the first seven years of school (Loban, 1964).

Parts of speech have been used in many developmental studies and can be expressed as totals, as

proportions of the total talk, and as ratios to other parts of speech. The adjective/verb ratio was used first by Busemann (1925) in Germany to measure what he called an action-qualitative quotient in children's language. Busemann believed that the ratio between action and qualitative interests changed in definite rhythmical cycles throughout one's life. He believed these ages for boys were 5, 9, 12-13, 17-18, and for girls were 9-10, 11-15, and 16-17. He felt his research indicated the existence of these action-qualitative periods and that changes in the adjective-verb ratio in children's language patterns accompanied similar changes in motor behavior. He postulated that these cyclical changes occurred throughout the life span. Rorschach (1964) developed a similar measure in analyzing responses to his inkblots. He named it a kinesthetic-color quotient and used this ratio to differentiate between personality types. Busemann believed the action-qualitative quotient indicated rhythmic changes in emotional stability and creative power. Rorschach felt his kinesthetic-color quotient indicated an intraversion-extraversion dimension of personality. Although the theoretical implications have been questioned due to lack of substantiation

(Boder, 1940), this measure has continued to be used as a measure of language maturity.

Use of nouns and pronouns are other measures which have shown significance in studies of language maturity. Goodenough (1938) found evidence from oral samples that the use of a large number of pronouns after the age of three and one-half years could be interpreted as a sign of language immaturity. She also found the third person neuter "it" declined as proper and common nouns were substituted and the child became more specific in his speech.

Carroll (1939) found the use of articles increased as the child developed. These findings were substantiated by Young (1941).

Measures of vocabulary variety or diversity have been common. These have included the type/token ratio suggested by Carroll (1938) and named by Johnson (1944), vocabulary size measured by tests, as the Seashore-Eckerson Test (Seashore & Eckerson, 1940), and the level of vocabulary complexity judged according to the lists of word frequencies developed by Thorndike and Lorge (1944).

The type/token ratio, the TTR, has been a common measure used to determine diversity or flexibility of

vocabulary which accompanies language maturity. The ratio is computed by dividing the number of different words used (type) by the total number of words spoken (token). Both Loban (1964) and Carroll (1964) state that for this measure to be meaningful, the size of the language samples must be uniform because this ratio will decrease as sample size increases. Carroll (1964) proposes that a better measure of language diversity is obtained by dividing the number of different words by the square root of twice the number of words in the sample as this ratio is relatively unaffected by sample size.

Vocabulary size is measured by taking a sample of words used or recognized and determining those beyond the most common. Seashore and Eckerson (1940) had subjects indicate word meanings and from this they determined size of vocabulary. More appropriate for testing size of oral speech samples is the method employing the Thorndike-Lorge (1944) word lists. Although these lists were developed from written samples of language, they have been found useful for both oral and written. Thorndike and Lorge have determined the 500 most frequently used words in the English language, the 1000 most frequently used words, and the level of frequency

for a total of 30,000 words. By analyzing a language sample as to frequency level of the words used, vocabulary size may be determined.

Subordination is a measure of language complexity and has been found to correlate with language maturity (Davis, 1941; Hahn, 1948; Loban, 1964; Strickland, 1962). Although the use of subordinate clauses is not the only means of subordination, it is the measure most used in developmental studies. The frequency of use of subordinate conjunctions is also considered an index of the ability to express relationships.

Linguistic Analysis in Psychotherapy

Research indicating a relationship between language structure and personality development has occurred in the area of psychotherapy as well as in that of child development. Language behavior of persons hospitalized for mental disorders and of persons undergoing therapy has been analyzed by the use of measures similar to those used in the studies of language behavior of children.

Fairbanks (1944) compared speech samples of ten schizophrenics with speech samples of ten college freshmen, using type/token ratio, parts of speech, and word frequencies as measures. Her findings were that the

speech of the schizophrenics was less highly differentiated in structure, more negatively toned, and showed preoccupation with the past as judged by verb tense. The schizophrenics also used more self-referent pronouns (I, me), more pronouns and verbs, and fewer nouns and articles than the college students.

Grummon (1950) analyzed transcribed interviews of six hospitalized psychotic patients and ten non-psychotic, self-referred counseling cases. He found a significant correlation between successful treatment and a decrease in the use of negatives. He also found differences in time reference, pronouns, and the use of clauses. Longer clauses were associated with better adjustment, and the use of subordinate clauses increased as treatment progressed. A high frequency of pronouns correlated with poor adjustment, and progress in counseling correlated with a shift from past time reference as indicated by verbs to present and future time reference. This finding is similar to that of Fairbanks (1944) and Seeman (1948).

Berg (1958) analyzed word choices in a complete transcript of eight interviews of one of Roger's (1942) clients. He found changes in the client's use of certain words as adjustment improved. Ego words (I, me) tended

to decrease in frequency while empathic words increased. The use of negatives, no, not, never, nothing, none, was inversely related to improved adjustment, but the adjective-verb ratio showed very little relationship.

Measures to be used in the present study will be selected according to the following criteria: (1) objectivity of measurement, (2) having produced meaningful developmental results in previous research of oral language behavior, (3) having exhibited relationship to changes in psychotherapy with adults, and (4) seemingly related to young adult development. The 75 measures selected as best meeting these criteria will be discussed in Chapter III.

Personality Development

This research is designed to investigate the relationship between oral language behavior patterns and personality development. It is postulated that two groups of persons who measure as different on dimensions of personality development will also differ in the ways they use language. In order to study this relationship, linguistic elements and personality development must be defined and measured. Units of analysis and techniques of measurement for language

elements have been determined; the present concern is the definition and the techniques of measurement of personality development.

The concept of personality development or growth is a common one in psychology. English and English (1958, pp. 381-384) use four pages to define personality, as both noun and adjective, and the word from which it is derived, person. Every person, while he lives, develops and grows in some direction. The term personality development as used by contemporary psychologists, however, generally connotes positive valuation. Personality development is viewed as proceeding in a desired direction, desired by the individual person and by the society of which he is a member.

Personality development, personal growth, maturity, adjustment, psychological health, optimal mental health, positive mental health are only a few of the terms used more or less interchangeably to indicate behavior of an individual which is satisfying to himself and desired by others in his community. Definitions include behavioral attributes acceptable from an inner or individual point of view and also from an outer or social point of view.

One way of defining psychological health is to define psychological illness and then assume health is non-illness. In recent years this definition has been inadequate as psychologists have become concerned with encouraging potential psychological growth within individuals. Robinson (1950) talks about higher level adjustment skills. Maslow (1954) talks of self-actualization, Rogers (1961) of the fully functioning person. Jourard (1963) uses the term healthy personality instead of mental health. He defines personality as "characteristic ways in which a person reacts to life situations (p. 3)." He uses the term healthy personality to refer to "modes of behavior which are valued because they gratify needs, are appropriate to the person's age and society, his personal value-system, and the immediate situation (p. 25)." He believes that such behavior will permit personality growth or development.

Jourard sees overlap in the various concepts used by different psychologists in their attempts to define psychological health, yet there are differences. The difficulty of investigating personal development or psychological health, or whatever words by which these concepts are named, results from the complexity of the concepts. The difficulty of studying "personal growth"

is in part due to the difficulty of operationally defining it. Thus the possibility of measuring it is difficult. Tindall (1955) studied sixteen measures frequently used to assess adjustment status and found an inter-correlation of only .228 among them. For an excellent review of the literature defining and discussing mental health, see Foreman (1964).

One fortunate study recently occurred which facilitated the present research so it will be discussed in some detail. Foreman (1964, 1966) attempted to determine empirically some of the dimensions of psychological health. One of the problems in such a study is the identification of persons exhibiting positive mental health. Foreman used the unique procedure of having college students nominated as psychologically most healthy by professors and residence hall counselors and then using certain measures to determine if they differed from a group who had not been nominated as psychologically most healthy, i.e., this group was selected to represent the typical student. This study will be summarized here.

Foreman's 58 subjects were selected from an original group of 10,000 students on a college campus. Professors ($N = 132$) and residence hall personnel

(N = 27) were asked to nominate students in their classes or residence halls whom they felt manifested optimal mental health. These nominators were permitted to use their own criteria for judging optimal health but were given suggestions as to what they may wish to consider in such nominations. (See Appendix A-1 for a copy of the letter sent to the professors. An identical letter was sent to the residence hall counselors). They were requested not to let academic performance influence their decisions. From the original group of students 600 were nominated at least once as being psychologically healthy. Of these, 48 received two or more independent nominations. The 29 subjects selected for the study were those who were nominated twice and were enrolled in the College of Education. This last criteria for selection was used to provide a common area of interest in order to facilitate participation in small discussion groups, from which some of the dimensions were to be measured. Foreman named this group the "zestfuls."

Foreman's second group of 29 was selected from a sampling of the same original population but from the group which received no nominations. The two groups were matched by pairs on the basis of age, sex, Ohio

State Psychological Examination scores, and the number of academic quarters completed. This group also was from the College of Education. He named this group "normals."

Foreman selected eleven dimensions of psychological health from the literature of psychologists such as Allport, Jahoda, Maslow and others (Foreman, 1964). These dimensions selected for study were:

(1) active involvement with the environment; (2) social orientation; (3) admission of personal problems; (4) spontaneity; (5) flexibility; (6) expression of affect; (7) self-other orientation; (8) openness to experience; (9) close interpersonal relations; (10) autonomy; and (11) anticipation of outcomes, i.e., optimism.

To measure these dimensions of optimal mental health, Foreman devised five pencil and paper methods and six additional measures utilizing judges' ratings of the Ss as they participated in small discussion groups. "Active involvement with the environment" was measured by Ss' responses to an Activities Participation Questionnaire, a device to assess participation in diverse environmental activities. Selected items from the Strong Vocational Interest Blank were used for

measuring "social orientation" by comparison of "like", "dislike", and "indifferent" responses.

"Admission of personal problems" was assessed by The Mooney Resources-Problems Check List. "Spontaneity" and "flexibility" were measured by a modification of The Reflex-Reserve Method, a technique from Gardner and Thompson (1956).

The zestfuls, or the optimally healthy students, were hypothesized as being more actively involved with their environment, as being more socially oriented, showing more spontaneity and flexibility, and being more willing to admit personal problems than the normals, the group not nominated as exhibiting optimal mental health. Significant differences were found between the two groups, in the expected direction, on all of the dimensions except that of social orientation.

The 58 subjects were then asked to participate in small discussion groups, each subject participating only once. Nineteen such sessions, each lasting forty minutes, were recorded on audio-tape. Each group was asked to discuss the same topic: how, if necessary, the image of the College of Education could be improved on campus. The subjects did not know their designation into zestfuls or normals nor were they aware of any characteristics assigned to others. (for procedure and instructions used by Foreman, see Appendix A-2).

The taped recordings of these small discussion groups were then evaluated by four trained judges. The judges did not know the category of the participants. The judges rated each subject on the dimensions of expression of affect, self-other orientation, openness to experience, close interpersonal relations, autonomy, and anticipation of outcome. The zestful students received significantly higher ratings than the normals on all of these six dimensions. However, Foreman found the correlation between these dimensions such that he concluded "the dimensions rated during the group discussions are so interrelated that the judges were influenced by halo effect, and discrete personality characteristics were not measured (1966, p. 8)." He concluded, however, that "optimally healthy subjects seem to participate in small discussion groups in ways quite different than subjects of normal psychological health (1966, p. 8)."

Foreman's two groups of college students, the zestfuls and the normals, measured as significantly different on ten of eleven dimensions of positive mental health, which is one way of assessing personality development. Their oral language patterns in small discussion groups were used to judge six of these

dimensions. Their ways of participating in these groups were rated as very different by judges who listened to the taped recordings of the nineteen discussion groups.

While Foreman found differences between his two groups, he did note certain shortcomings of his study: (1) he recognized the difficulty of defining psychological health; (2) the nominators did not necessarily know the students well; (3) the number of nominations required, i.e., two, was low and unreliable; (4) a "halo" effect probably entered into the judges ratings on six of the dimensions of psychological health. Foreman asked for further research. In spite of these questions raised by Foreman about his study, the language produced in his free discussion sessions is an unusual resource and so the present researcher proposes to use it.

Communication between persons by oral language may be investigated by studying (1) the communicators, (2) the non-verbal behavior, such as hand and body movements, or (3) the verbal message itself, the words selected by the participants. This message, or words, may be assessed as to affectivity (or meaning) or as to its structure. Foreman's study included an assessment

of the communicators as determined by the affectivity of their verbal messages, and he found a significant difference between his zestfuls and his normals. He did not assess the structure of the verbal message of these two groups. The present study will attempt to do this.

CHAPTER III

METHOD OF STUDY

This research is designed to investigate the relationship which may exist between personality development and structural dimensions of oral language behavior. The rationale for believing such a relationship exists was presented in the previous chapters. Verbatim transcriptions from the nineteen small discussion groups used by Foreman in his investigation of psychologically healthy college students will be used for the linguistic analysis in this present study. Foreman's study was summarized in detail in Chapter II. (pp. 33-39).

This chapter will include a discussion of the subjects selected, the linguistic measures to be used for analyzing the verbatim transcriptions of the discussion groups, the hypotheses generated, and the statistical methods selected to analyze the data.

Selection of Subjects

The subjects selected for this research are the 58 college students used by Foreman (1966) in his study

"Some Empirical Correlates of Psychological Health."

His two groups, 29 in each, were designated as optimally healthy, or zestfuls, and as of normal mental health, or normals. Both groups were from the general college population at the Ohio State University.

The 29 psychologically healthy students were from a group judged on this dimension by 132 professors and 27 residence hall counselors from an original population of 10,000 students. Six hundred students were nominated once from this original population, and 48 of these 600 students were independently nominated two or more times. The 29 selected by Foreman for his study were only those who received two or more nominations and who were enrolled in the College of Education. Since he planned to have his subjects participate in small discussion groups, he felt a commonality of interest and experience would facilitate discussion of the topic presented to them. The 29 students representing normal mental health were from a sampling of the original group of 10,000 students. This group received no nominations for positive mental health. The two groups were matched by pairs on the basis of age, sex, Ohio State Psychological Examination scores, and the number of academic quarters completed.

Each of the 58 subjects participated once in a small discussion group (N = 2, 3, or 4) on the topic of how the image of the College of Education on the local campus might be changed. (Appendix A-2 is a direct quote from Foreman describing the procedure and instructions for the small discussion groups.) Nineteen sessions of 40 minutes each were recorded on audiotape. These groups consisted ideally of four subjects, two zestfuls and two normals. Five such groups met. Four other groups of four's included a stooge. The rest of the subjects met in groups of three's and two's, with each group, except one, including both zestful and normal subjects. Three of the groups of three's included a stooge. Seven stooges were utilized to sit in with some of these groups of two's and three's in order to maintain a group atmosphere. The stooges, young looking graduate students, were instructed to participate naturally but not to accept responsibility for carrying on the discussion. There was no evidence that the stooges were seen as different from the other participants. Following is a listing of the composition of the groups.

Group	Number	Zestfuls	Normals	Stooges
1	3	1	2	
2	4	2	2	
3	3	1	2	
4	3	1	2	
5	3	2	1	
6	4	2	2	
7	4	2	1	1
8	2	1	1	
9	4	1	2	1
10	4	2	2	
11	3	2	1	
12	4	2	2	
13	3	2		1
14	4	2	2	
15	4	2	1	1
16	3	1	1	1
17	4	1	2	1
18	3	1	2	
19	3	1	1	1
Total	65	29	29	7

While in smaller groups a person has more chance to talk, the zestfuls and normals were distributed in the groups of 2's, 3's, and 4's in such a way that the two groups had comparable opportunity to speak.

The results of Foreman's study were summarized in Chapter II. The audio tapes from the nineteen discussion sessions were later transcribed. The participants were labeled only as Able, Baker, Charlie, or Dog. These designations had been made based on the chair in which each sat in the discussion room. The group designation (zestful or normal) was not known to this researcher until all ratings were done.

The data to be used in the present study are the verbatim transcripts of the nineteen taped recordings of the small discussion groups. (See Appendix B for sample) These verbatim transcripts will be analyzed according to thirty distinct linguistic counts. A total of 75 variables, 45 of which are ratios, has been established. A complete list of these 75 linguistic variables is included in Appendix C.

Measures Selected

Criteria for the selection of measures for use in this study are: (1) objectivity of measurement, (2) having produced meaningful developmental results in previous research of oral language behavior, (3) having exhibited relationship to changes in psychotherapy with adults, and (4) seemingly related to young adult development. The measures selected may be grouped into six major categories: (1) participation in language space, (2) parts of speech, (3) vocabulary variability, (4) time reference, (5) negativism, and (6) clearness of expression.

Sampling basis. The total words produced by the 58 subjects in their 40-minute discussion period

will be included in all analyses except those for vocabulary variability. The type-token ratio, a measure of variability, is valid only if used on equal numbers of words for each subject (Carroll, 1964; Loban, 1964). Therefore, 500-word samples for each subject will be selected and analyzed for the two measures of vocabulary variability, i.e., the type-token ratio and vocabulary load. Several other measures, such as the I, me/we, us ratio and the use of negatives will be computed on the 500-word sample as well as on the total words to determine if a small sample, such as 500 words, gives comparable results to that of a larger sample for some of these linguistic analyses.

Participation in the language space

In most of the studies comparing language patterns, the samples of language have included the same number of words for each subject regardless of the time required to produce those words. The common element generally has been the same number of words. In this study the common element is time, the time span being 40 minutes. Theoretically each member of a discussion group had the same opportunity as all other members of that group to participate in the 40-minute time space. Since all groups, except one, included both

zestful and normal subjects, their use of this time space can be compared.

Two measures will be used to determine language participation in the 40-minute period: (1) total number of words spoken by each subject, and (2) total number of times that each subject spoke, or total utterances. From these can be computed the average length of speeches for each person. The additional variable of one-word responses will be included here and the proportion of these to total responses computed. Templin (1957) found that the proportion of one-word responses uttered was an indication of language maturity and that these declined with increasing maturity.

Parts of Speech

Some words can be categorized into the parts of speech by structure. "I", "me", "he", "they" are always pronouns. The categories of most words, however, are determined by function in the sentence. The word "show" may be a noun or a verb depending on its use in the sentence. Since the proportionate use of certain parts of speech have figured widely in the study of language patterns in psychotherapy, these measures will also be used here. Theoretically the optimally healthy would seem to use more "we, us," or socially-oriented

pronouns, and less "I, me," or self-referent pronouns. It is theorized they will also use more modifiers, adjectives and adverbs, since these define meaning more precisely. They will also use more nouns in relation to pronouns since naming an object, or thing, or event is more precise than referring to it by the use of an indefinite pronoun.

A word count will be made of (1) pronouns, (2) adjectives, (3) adverbs, (4) verbs, and (5) nouns. The pronouns, "I, me," "we, us," and "it" will be included in the total count of pronouns but the three groups also will be counted separately. Articles will be a part of the total count of adjectives but will be counted separately as an additional measure. Since the total numbers of words used by the subjects are not equal, ratios will be computed to determine comparable use of these parts of speech and specific words. The measures to be considered are:

1. Total counts of the above parts of speech and specific words
2. The ratio of each of the parts of speech and specific words to total words spoken
3. The proportion of "we, us" to "I, me"
4. The proportions of "We, us" "I, me" and "It" to total words

5. The ratio of nouns to pronouns
6. The proportions of adjectives, adverbs, and articles to total modifiers.
7. The noun-verb ratio
8. The adjective-verb ratio
9. The adverb-verb ratio
10. The adverb-adjective ratio
11. The noun-adjective ratio
12. The ratio of articles to total adjectives

Vocabulary variability

Two measures of vocabulary variability or diversity will be used: (1) type-token ratio and (2) vocabulary load.

The type-token ratio is determined by dividing the number of different words (types) in a language sample by the total number of words (tokens). According to Carroll (1964) and Loban (1964), this measure is valid only if computed on equal numbers of words. Generally, the greater the number of words one speaks, the less the different types. For this reason, samples of 500 words will be selected from those produced by each subject. As nearly as is practical, these will be selected equally from the beginning, the middle and the end of each person's total number of words. Six

of the 58 subjects spoke less than 500 words total. In these six cases, the total words produced by each subject will be used to compute the type-token ratio.

Vocabulary load may be determined by the ratio of high frequency words used to those of low frequency. The sample of 500 words from each subject will be analyzed for this measure. The Thorndike-Lorge (1944) list of the 500 most frequently used words in the English language will be considered as a base, and all words for each subject which do not appear in Thorndike's list will be counted.

Time reference

Each time one uses a verb or verb phrase, he refers to the present, the past, or the future. It is theorized that the more mature or psychologically healthy individual will be oriented toward the present and future and less fixated on the past than the less mature. Time reference will be determined by counting the verbs or verb phrases and determining the percentage of times a subject refers to the present, to the past, and to the future.

Use of negatives

This measure has been used in several studies of language patterns of therapy clients (Berg, 1958).

This is simply a count of all negative words, such as no, not, never, nothing, which a subject uses. Theoretically, a positive attitude toward the world indicated by a low use of negative words in language patterns would seem characteristic of the psychologically healthy. Raimy's (1948) findings of the tendency to change in therapy from negative to positive self-reference would substantiate this. In the present study the ratio of negative words to total words used will be computed and compared between the groups of zestfuls and normals.

Clearness of expression

Organizing words into complete sentences is a characteristic of written language but not of oral. In reading transcriptions of counseling interviews or of any verbatim spontaneous speech of either children or adults, one is struck with the lack of organization of words into grammatically complete sentences. Oral language utterances are characterized by incomplete phrases, tangles of words with confused meanings, false starts, fillers, repetitions, and so forth. If one is to adequately study the language patterns of a subject, these parts of his behavior should be considered. The only studies which include an evaluation

of this characteristic of language behavior are those of Loban (1963, 1964), Strickland (1962), and Bormuth (1964). The measures developed for use in their research will be used in this study. These measures were discussed in detail in Chapter II.

Another measure of clearness of expression is that of subordination. Use of subordinate clauses aids in expressing more precise relationships in one's attempt to communicate. Theoretically the optimum person will be able to speak more clearly and precisely and will not have difficulty in selecting words from his pool of language symbols to express his meaning. Also, he will indicate more exact relationships by his use of subordination.

The specific measures to be used to assess clearness of expression are:

1. Total number of communication units for each subject
2. Total words in communication units
3. Average number of words per communication unit
4. Proportion of words in communication units to total words spoken
5. Total number of mazes used by each subject
6. Total words in mazes
7. Average number of words per maze
8. Proportion of words in mazes to total words spoken
9. Ratio of mazes to communication units

10. Ratio of words in mazes to words in communication units
11. Total subordinate clauses in communication units
12. Proportionate use of subordination (subordinate clauses divided by communication units for each subject)

Sixty-four linguistic measures have been described above. In addition, 11 repeat counts on the 500-word sample make a total of 75 variables or measures which will be used in the statistical analysis. Appendix C includes a list of all 75.

Hypotheses

Certain predictions of differences in language patterns between the two groups of zestfuls and normals are suggested by the results of previous research.

Specific hypotheses are:

1. The zestfuls will participate more in the 40-minute time span than the normals.
 - 1.1 Zestfuls will produce a greater number of words than the normals.
 - 1.2 Zestfuls will speak more frequently.
 - 1.3 Zestfuls will produce more words each time they speak.
 - 1.4 Zestfuls will produce less one-word responses.
2. The zestfuls will measure on the variables involving the parts of speech in the directions that have been suggested by previous research as indication of maturity.

- 2.1 Zestfuls will use significantly more "we, us" and less "I, me" pronouns than the normals.
 - 2.2 Zestfuls will use less "it" pronouns than the normals.
 - 2.3 Zestfuls will use proportionately more modifiers, both adjectives and adverbs.
 - 2.4 Zestfuls will use proportionately more articles than the normals.
 - 2.5 Zestfuls will use a significantly higher ratio of nouns to pronouns.
 - 2.6 Zestfuls will use proportionately more verbs in relationship to their total number of words spoken.
 - 2.7 Zestfuls will use a higher ratio of adjectives to verbs.
3. The vocabularies of the zestfuls will show greater variety than those of the normals.
- 3.1 Zestfuls will have a significantly higher type-token ratio.
 - 3.2 Zestfuls will use more words not included in Thorndike's list of the 500 most-used words.
4. Zestfuls will be more oriented toward the present and the future than the normals.
- 4.1 Zestfuls will use more verbs referring to the present than the normals.
 - 4.2 Zestfuls will use significantly less verbs referring to the past than the normals.
 - 4.3 Zestfuls will use more verbs referring to the future than the normals.

5. Zestfuls will speak more positively than the normals, i.e., zestfuls will use less negative words such as no, not, and never.
6. Zestfuls will rate significantly higher on clearness of expression than the normals.
 - 6.1 Zestfuls will produce more communication units than the normals.
 - 6.2 The average length of the communication units will be longer for the zestfuls than for the normals.
 - 6.3 Zestfuls will produce fewer mazes than the normals.
 - 6.4 The average length of the mazes will be shorter for the zestfuls than for the normals.
 - 6.5 Zestfuls will use more subordinate clauses in their communication units than the normals.
7. Seventy-five linguistic measures have been used in the present study, many more than in any similar study investigating personality development and linguistic patterns. Tremendous work is involved in such an analysis. Because of the probability that many of these measures overlap, it is hypothesized that basic factors exist in language structure which can be determined by a factor analysis. This may reduce the number of factors which would need to be considered in subsequent studies.

Statistical Analysis of Data

Means and standard deviations will be computed on each variable for the entire group of 58 subjects and for each group of 29 subjects. This will show range or variability within the total group and within each subgroup on each measure.

The major test of the first six major groups of hypotheses will be an F test to determine any predicted differences between the means of the two groups (Walker & Lev, 1953). Since an analysis of variance procedure assumes a normal distribution of a variable and since 45 of the 75 measures are proportions, or ratios, which do not distribute normally (Walker & Lev, 1953; Winer, 1962), scores will be transformed before computation of the F ratios. The arcsin formula suggested by Winer (1962, p. 221) will be used to normalize the distributions.

To investigate language structure (hypothesis 7) a general factor analysis using the Biomedical Computer Program (Dixon, 1965) will be run. This program performs a principal component solution and an orthogonal rotation of the factor matrix. This method will be used to attempt to determine basic factors in the structure of oral language patterns.

CHAPTER IV

RESULTS AND DISCUSSION

In the present study it was postulated that a group of college students who were nominated by professors and residence hall counselors as exhibiting optimal mental health and who tested as significantly different on various personality measures would also test as significantly different on certain linguistic measures, designed to determine language patterns, from a matched group of college students who had not been so nominated. The selection of the 75 linguistic measures to be used and of the 58 subjects whose language patterns were to be analyzed has been discussed in Chapter III. Results will be discussed here.

It was also postulated that much overlap exists in the numerous linguistic measures developed over the years and used in this study. In order to determine basic factors in language structure, the 75 linguistic variables were factor analyzed. The results of this factor analysis will be the subject of the second part of this chapter.

A multiple regression analysis was performed to test the first six hypotheses and the corresponding subhypotheses presented in Chapter III. The means and standard deviations for the two groups, named zestfuls and normals, on each of the 75 linguistic variables used in this study were determined by this method. The significance of the differences between the means of the two groups was established through an analysis of variance procedure and the resulting F ratios. Tables 1 through 6 show the means, standard deviations, and the F ratios for the various linguistic measures. The specific hypotheses and the corresponding results follow.

Hypothesis 1. The zestfuls will participate more in the 40-minute time span than the normals.

- 1.1 Zestfuls will produce a greater number of words than the normals.
- 1.2 Zestfuls will speak more frequently.
- 1.3 Zestfuls will produce more words each time they speak.
- 1.4 Zestfuls will use significantly less one-word responses.

The means, standard deviations, and the F ratios for the measures used to test this hypothesis

of total word production and participation in the time span are presented in Table 1. The zestfuls spoke significantly more words (at the .05 level) in the 40-minute time span than the normals (Hypothesis 1.1). On the average they spoke a few more times (H. 1.2) but not significantly so. They tended to speak longer each time they spoke (H. 1.3) and they tended to use less one-word responses (H. 1.4), but neither of these reached significance. These results support hypothesis 1.1 but not 1.2, 1.3, or 1.4.

Hypothesis 2. The zestfuls will measure on the variables involving the parts of speech in the directions that have been suggested by previous research as indication of maturity.

- 2.1 Zestfuls will use significantly more "we, us" and less "I, me" pronouns than the normals.
- 2.2 Zestfuls will use less "it" pronouns than the normals.
- 2.3 Zestfuls will use proportionately more modifiers, both adjectives and adverbs.
- 2.4 Zestfuls will use more articles.

TABLE I

Comparison of the Two Groups on Measures of
Participation in the Language Space
(Hypothesis 1)

Hypo- thesis	Variable	<u>Zestfuls</u> (N = 29)		<u>Normals</u> (N = 29)		<u>F^b</u>
		M	SD	M	SD	(df 1, 56)
1.1	Total words spoken	1984.14	915.77	1434.03	962.41	4.972**
1.2	Total utterance units	60.07	26.19	52.59	33.96	.883
1.3	Average length of utterance units	37.57	21.83	27.36	12.75	3.339*
1.4	One-word responses	6.17	7.25	5.28	4.88	.305
	One-word responses/ utterance units ^a	.098	.088	.128	.123	1.646

* $p < .08$

** $p < .05$

a / = ratio

b F ratios for measures which are themselves ratios are computed from transformed scores, according to Winer, 1962, p. 221. However, in these instances, Means and Standard Deviations are computed from raw scores.

- 2.5 Zestfuls will use a significantly higher ratio of nouns to pronouns.
- 2.6 Zestfuls will use proportionately more verbs in relationship to their total words spoken.
- 2.7 Zestfuls will use a higher ratio of adjectives to verbs.

Table 2 shows the means, standard deviations, and the F ratios for the parts of speech used as measures in this study. These include nouns, pronouns, adjectives, adverbs, and verbs. In addition, separate counts were made for the first person singular pronouns (I, me), the first person plural pronouns (we, us), and the third person neuter (it). The articles (a, an, the) were included in the total count of adjectives, then separated out and totaled separately. All of the words falling into the various categories were counted. Ratios then were computed between each count and total words and between all combinations of the various parts of speech.

An examination of Table 2 shows that total modifiers, total adjectives, total articles, total adverbs, total nouns, total verbs, and total "it"

TABLE 2

Comparison of the Two Groups on Measures of
Parts of Speech
(Hypothesis 2)

Hypo-thesis	Variable	Zestfuls (N = 29)		Normals (N = 29)		F ^b (df 1, 56)
		M	SD	M	SD	
2.1	"I, me"	83.76	46.30	63.69	49.06	2.567
	"We, us"	16.55	11.16	13.97	11.06	.786
	"I, me/words ^a	.043	.016	.044	.016	.009
	"We, us"/total words	.009	.005	.010	.005	.020
	"I, me"/pronouns	.224	.069	.231	.086	.000
	"We, us"/pronouns	.049	.029	.050	.028	.001
	"We, us"/"I, me"	.262	.245	.244	.193	.945
2.2	"It"	44.28	22.61	29.86	19.46	6.773***
	"It"/words	.023	.007	.023	.010	.110
	"It"/pronouns	.120	.032	.121	.055	.036
2.3	Modifiers	464.62	232.52	336.52	225.76	4.531***
	Adjectives	271.17	145.31	194.69	131.20	4.426***
2.4	Articles	109.24	68.03	76.62	52.59	4.174***
	Adverbs	193.45	91.28	139.97	98.59	4.595***
	Modifiers/words	.230	.016	.236	.021	1.146
	Adjectives/words	.133	.017	.134	.026	.000
	Articles/words	.053	.012	.053	.014	.007
	Adverbs/words	.098	.011	.101	.021	.279
	Adjectives/modifiers	.576	.047	.565	.093	.316

TABLE 2--Continued

Hypo-thesis	Variable	<u>Zestfuls</u> (N = 29)		<u>Normals</u> (N = 29)		<u>F^b</u>
		M	SD	M	SD	(df 1, 56)
	Articles/modifiers	.227	.042	.222	.053	.223
	Adverbs/modifiers	.424	.047	.429	.101	.055
	Articles/adjectives	.392	.055	.396	.084	.033
	Adverbs/adjectives	.747	.150	.834	.503	.325
	Nouns/adjectives	.933	.085	.932	.224	3.213*
2.5	Nouns	250.72	130.24	173.31	116.45	5.694***
	Pronouns	368.79	156.91	278.00	191.92	3.890**
	Nouns/words	.124	.014	.121	.016	.666
	Pronouns/words	.191	.023	.190	.021	.033
	Nouns/pronouns	.666	.165	.648	.139	.070
2.6	Verbs	468.55	207.83	349.69	240.32	4.059***
	Verbs/words	.241	.029	.243	.020	.134
	Nouns/verbs	.529	.157	.502	.096	.307
2.7	Adjectives/verbs	.571	.178	.560	.135	.056
	Adverbs/verbs	.410	.070	.414	.084	.017

* $p < .10$
 ** $p < .06$
 *** $p < .05$

a / = ratio

b F ratios for measures which are themselves ratios are computed from transformed scores, according to Winer, 1962, p. 221. However, in these instances, Means and Standard Deviations are computed from raw scores.

produced by the zestfuls compared to the normals were significant at the .05 level. Total pronouns were significant at the .06 level. Since the zestfuls produced significantly more total words than the normals (Hypothesis 1), it seems reasonable that they would also use more of all of the parts of speech.

When the various parts of speech and the specific words are divided by the total words produced, the two groups used approximately the same proportions. None of the ratios are significant. Also, none of the ratios of one part of speech to another, as nouns to pronouns or adjectives to verbs, are significant (at the .05 level).

Hypothesis 2 was supported only in terms of total parts of speech used, and this can be explained by the fact that the zestfuls spoke more words than the normals. None of the hypotheses involving ratios of parts of speech to total words or of one part of speech to another were supported by the data in this study.

Hypothesis 3. The vocabularies of the zestfuls will show greater variety than those of the normals.

- 3.1 Zestfuls will have a significantly higher type-token ratio.
- 3.2 Zestfuls will use more words not included in Thorndike's list of the 500 most frequently used words.

According to Table 3 tokens are significant at the .05 level, but this is due to an artifact. Six of the normals produced less than 500 words total. These numbers enter into the F ratio and thus make the ratio for tokens appear significant. The type-token ratio also is significant at the .05 level, but in the opposite direction to that predicted. The type-token ratio is computed by dividing the number of different words used (type) by the total number used (token). Both Carroll (1964) and Loban (1964) state that this ratio is reliable only if computed on equal samples as the ratio tends to decrease as the total words spoken increase. It was for this reason that a sample of 500 words was taken from the total words produced by each subject. For the six who produced less than 500 words total, the total number they did produce was used to compute the ratio. This is probably what caused the type-token ratio to show

TABLE 3

Comparison of the Two Groups on Measures of
Vocabulary Variability
(Hypothesis 3)

Hypo- thesis	Variable	<u>Zestfuls</u> (N = 29)		<u>Normals</u> (N = 29)		<u>F^b</u>
		M	SD	M	SD	(df 1, 56)
3.1	Tokens	500.00	0.00	447.76	115.87	5.895**
	Types	170.38	11.98	160.83	33.35	2.106
	Type/token ^a	.341	.024	.378	.085	5.165**
3.2	Words not in Thorn- dike's list of 500 most-used words	54.59	9.43	48.46	15.16	3.237*
	Words not in Thorn- dike's list of 500 most-used words	.109	.019	.108	.020	.016
	most-used words/token					

* $p < .10$

** $p < .05$

a / = ratio

b F ratios for measures which are themselves ratios are computed from transformed scores, according to Winer, 1962, p. 221. However, in these instances, Means and Standard Deviations are computed from raw scores.

significance but in the direction opposite to that predicted, again probably an artifact.

To pursue the above reasoning further, the type-token ratio was computed for the 23 of the normal group who spoke more than 500 words total, thus making it possible to sample 500 of their words and to compare them to the group of zestfuls according to Carroll's and Loban's stipulations. The following results were obtained:

	<u>Normals</u> (N = 23)
Tokens	500.00
Types (Mean score)	173.13
Type/token ratio	.346

By comparing these results with those in Table 3, it is observed that these figures more nearly approximate those of the 29 zestfuls than those of the 29 normals. When only the normals who spoke more than 500 words are compared with the zestfuls, the differences in type-token ratios are no longer significant, thus hypothesis 3.1 is not supported.

The total number of words used by the two groups which were beyond the 500 most frequently used words according to the Thorndike-Lorge (1944) word frequency

count, approaches significance (at the .10 level). Here again the tendency for this count to be significant would seem due to the six who produced less than 500 tokens. When these totals are divided by the tokens (total words) from which this count was made, the ratio of words beyond the 500 most frequently used words is the same for both groups, thus hypothesis 3.2 is not supported by the data.

Hypothesis 4. Zestfuls will be more oriented toward the present and the future than the normals.

4.1 Zestfuls will use more verbs referring to the present than the normals.

4.2 Zestfuls will use significantly less verbs referring to the past than the normals.

4.3 Zestfuls will use more verbs referring to the future than the normals.

The total number of times the zestfuls as compared to the normals referred to the present and the future is significant at the .05 level, as presented in Table 4. These significant differences in means of the two groups when considering total

TABLE 4

Comparison of the Two Groups on Measures of
Time Reference
(Hypothesis 4)

Hypo- thesis	Variable	<u>Zestfuls</u> (N = 29)		<u>Normals</u> (N = 29)		<u>F</u>
		M	SD	M	SD	(df 1, 56)
	Total references to present	207.38	102.24	144.03	95.96	5.918**
	Total references to past	60.52	36.01	54.45	44.93	.322
	Total references to future	30.72	15.57	20.48	15.70	6.221**
4.1	Per cent of time referred to present	.689	.083	.632	.139	3.616*
4.2	Per cent of time referred to past	.207	.090	.274	.167	3.635*
4.3	Per cent of time referred to future	.104	.036	.094	.049	.816

* $p < .07$
 ** $p < .05$

counts are probably due, as before, to the fact the zestfuls produced more total words so they produced more of everything.

By comparing the per cent of time the two groups referred to the present and the past, these tend to be significant (at the .07 level) in the expected directions. The zestfuls referred proportionately more to the present (H. 4.1) and the normals referred proportionately more to the past (H. 4.2). Reference to the future showed no difference (H. 4.3).

The results from this research indicate that the zestfuls in this group of college students tend to be more oriented toward the present and the normals more oriented toward the past when judged by their use of verb tense. Thus there is some evidence of support for hypotheses 4.1 and 4.2. Hypothesis 4.3 is not supported.

Hypothesis 5. Zestfuls will speak more positively than the normals, i.e., zestfuls will use less negative words such as no, not, and never.

As Table 5 indicates, the differences in the use of negatives by the two groups is not significant. The zestfuls tend to use more total negatives

TABLE 5

Comparison of the Two Groups on
Use of Negatives
(Hypothesis 5)

Hypo- thesis	Variable	<u>Zestfuls</u> (N = 29)		<u>Normals</u> (N = 29)		<u>F^b</u>
		M	SD	M	SD	(df 1, 56)
5	Negatives	47.76	24.91	35.86	25.77	3.195*
	Negatives/words ^a	.024	.006	.028	.013	1.341

* $p < .10$

a / = ratio

b F ratios for measures which are themselves ratios are computed from transformed scores, according to Winer, 1962, p. 221. However, in these instances, Means and Standard Deviations are computed from raw scores.

(significant at the .10 level) but this is due to the fact they speak more. When the ratio of negatives to total words is computed, the normals are slightly higher, but this does not reach significance.

Hypothesis 5 is not supported.

Hypothesis 6. Zestfuls will rate significantly higher on clearness of expression than the normals.

- 6.1 Zestfuls will produce more communication units than the normals.
- 6.2 The average length of the communication units will be longer for the zestfuls.
- 6.3 Zestfuls will produce less mazes than the normals.
- 6.4 The average length of the mazes will be shorter for the zestfuls than for the normals.
- 6.5 Zestfuls will use more subordinate clauses in their communication units than the normals.

The means, standard deviations, and the F ratios for the measures used to test this hypothesis of clearness of expression are presented in Table 6. The zestfuls produced more communication units, more words in communication units, and also more mazes than the

TABLE 6

Comparison of the Two Groups on Measures of
Clearness of Expression
(Hypothesis 6)

Hypo- thesis	Variable	<u>Zestfuls</u> (N = 29)		<u>Normals</u> (N = 29)		<u>F^b</u>
		M	SD	M	SD	(df 1, 56)
6.1	Communication units	156.76	63.80	114.38	71.44	5.678***
	Words in communi- cation units	1557.24	688.90	1135.31	749.62	4.980***
	Words in communi- cation units/ total words ^a	.791	.057	.813	.073	1.895
6.2	Average length of communication units	9.92	1.81	9.68	2.04	.571
6.3	Mazes	88.21	51.89	62.41	44.20	4.153***
	Words in mazes	425.24	254.23	298.72	255.40	3.574*
	Words in mazes/ total words	.209	.057	.187	.073	1.795

TABLE 6--Continued

Hypo-thesis	Variable	<u>Zestfuls</u> (N = 29)		<u>Normals</u> (N = 29)		<u>F</u> ^b
		M	SD	M	SD	(df 1, 56)
6.4	Average length of mazes	4.87	1.27	4.56	1.79	3.477*
	Mazes/communication units	.555	.191	.507	.162	.683
	Words in mazes/words in communication units	.270	.091	.241	.119	1.388
	Subordinate clauses	58.59	25.31	43.86	30.66	3.978**
6.5	Subordinate clauses/communication units	.382	.102	.373	.119	.158

* $p < .07$

** $p < .06$

*** $p < .05$

a / = ratio

b F ratios for measures which are themselves ratios are computed from transformed scores, according to Winer, 1962, p. 221. However, in these instances, Means and Standard Deviations are computed from raw scores.

normals. These are significant at the .05 level. As with most of the results in this study, these probably are due to the more words the zestfuls spoke. When ratios are considered the significance disappears. The average length of communication units is practically the same for both groups and is not significantly different.

The average length of mazes tends to be significant (at the .07 level) but in the opposite direction to that predicted. The average length for zestfuls is greater than that for normals. When total words are considered, the zestfuls produced 79.1 per cent of their words in communication units and 20.9 per cent in mazes. The normals produced 81.3 per cent in communication units and 18.7 per cent in mazes. These are in the opposite direction to that predicted.

The total use of subordinate clauses is higher for the zestfuls but, as before, their production of more words is reflected in their production of more subordinate clauses. When the ratio of subordinate clauses to communication units is computed, no difference exists between the two groups.

Although Hypothesis 6 is not supported except for total production, the tendency for the zestfuls to produce a slightly greater per cent of their words in mazes and less in communication units is interesting because it is opposite to that suggested by previous research.

In comparing the means of the zestfuls and the normals on the various measures above, the zestfuls differ significantly from the normals only in the number of words produced in the 40-minute time space given to each discussion group. The hypotheses about using modifiers for finer discrimination, of referring more to the future, of referring more to "we, us" compared to "I, me", of using fewer mazes have not been supported by the results of this research. Repeatedly the only thing that reached significance was that the zestfuls simply talked more.

The only other hypothesis that approached significance was that zestfuls would show more concern with the present and normals more fixation on the past as indicated by verb tense.

In considering these results, one might speculate as to their causes. Later, in the section on

factor analysis, it will be seen that the largest factor is total production of words or verbal fluency. This would seem to coincide with the findings here. Secondly, these results may raise some question as to the criteria used by the professors and residence hall counselors in nominating their zestfuls. Perhaps they were influenced by the fact the students just talked more.

More research seems indicated by the results obtained here. This will be discussed after the section on factor analysis.

Before a discussion of hypothesis 7 and the results of the factor analysis, two questions concerning reliability will be considered. The question was raised in Chapter III (p. 45) whether a small sampling of oral language, such as 500 words, would give results comparable to those of a larger sample for some of these linguistic analyses. A 500-word sample was used for the computations of the two measures of vocabulary variability, i.e., the type-token ratio and the word frequency count. This was done because the type-token ratio is a valid

measure only if used on equal numbers of words for each subject (Carroll, 1964; Loban, 1964). Additional measures used on the 500-word sample were the ratios of "I, me," "we, us," "it," articles, and negatives to the total words. These ratios were correlated with comparable ratios on the total words produced, with the following results:

Measure	Correlations between 500-word Sample and Total Words
"I, me"/words	.90
"We, us"/words	.72
"It"/words	.71
Articles/words	.75
Negatives/words	.84

These correlation coefficients may be spuriously high because of the fact that the 500-word samples were also included in the total word count. However, it would seem that even considering this, a 500-word sample may be used if necessary but with the understanding that a larger sample would give more reliable results.

The second question of reliability concerns that of the analysis procedures. Even though all measures used in this research were quantitative measures, some of the analyses required subjective decisions. This was true for the parts of speech

when these were determined by function in the utterance and it was also true for the segmentation of the utterances into communication units and mazes. The latter analysis required more subjective decisions than any other part of the analyses. The rules used in the present research (Appendix E) were those established by Loban (1963, 1964). To test the reliability of the present researcher's analysis, Tape 16 was segmented into communication units and mazes at two separate times with a month intervening between. The following counts were obtained:

	(Subject) "Able" Analysis		(Subject) "Baker" Analysis	
	I	II	I	II
Communication units	85	84	216	214
Words in Com. Units	991	985	2250	2242
Mazes	42	42	166	164
Words in Mazes	268	274	683	691

From these figures it is evident that the two counts produced very similar results.

The final section of this chapter will include a discussion of hypothesis 7 and the results of the factor analysis followed by suggestions for further research.

Hypothesis 7. Seventy-five linguistic measures have been used in the present study, many more than in any similar study investigating personality develop-

ment and linguistic patterns. Tremendous work is involved in such an analysis. Because of the probability that many of these measures overlap, it is hypothesized that basic factors exist in language structure which can be determined by a factor analysis. This may reduce the number of measures which would need to be considered in subsequent studies.

The program used for the factor analysis is described in Chapter III. It was arbitrarily decided to rotate for ten factors. It was found before rotation that four factors accounted for most of the variance, as follows:

Original and Successive Variances

Cycle No.	Variances
1	.2233568
2	.3660964
3	.4428765
4	.4589780
5	.4591039
6	.4591067
7	.4591068
8	.4591068
9	.4591068
10	.4591068

Because of the above findings, the factors were rotated a second time for four factors. The factor loadings of both rotations will be discussed here.

Table 7 presents the factors and factor loadings for both the ten- and four-factor rotations. All measures with loadings above .40 have been included. Fruchter (1954) states that loadings of less than .2 usually are considered insignificant, from .2 to .3 are low, from .3 to .5 moderate, .5 to .7 high, and above .7 are very high. A loading of .4 is a commonly used basis for factor analysis. The measures loading on the various factors are listed in rank order of the loadings from highest to lowest according to the ten-factor rotation. It will be observed from a study of Table 7 that the rank order of the measures on both the ten- and four-factor rotations are very similar. A discussion of the individual factors follows:

Factor I, Verbal Fluency. Twenty-one of the twenty-two measures loading on Factor I are totals. Included are total words spoken, totals of the parts of speech, totals of the specific words counted (as "I, me"), total references to present, to past, and to future, total utterance units, total communication units, total mazes, and total subordinate clauses. The only negative loading is "average length of utterances," the reason for this is not clear.

Summary of Factor Pattern

Loading ^a		Linguistic Measure
10-factor rotation	4-factor rotation	
Factor I: Verbal Fluency (25% of h^2)		
.972	.967	Total pronouns
.972	.979	Total adverbs
.972	.954	Total verbs
.968	.943	Words in communication units
.966	.963	Total words spoken
.962	.935	Total subordinate clauses in communication units
.960	.942	Total communication units
.958	.958	Total modifiers
.945	.949	Total negatives
.939	.940	Total references to present
.924	.919	Total adjectives
.917	.919	Total nouns
.888	.918	Total mazes
.880	.873	Total "It"
.873	.883	Total articles
.854	.826	Total future
.833	.893	Total words in mazes
.798	.807	Total "I, me"
.714	.720	Total references to past
.691	.656	Total utterances
.657	.629	Total "we, us"
-.466	-.468	Average length of utterances
Factor II: Adjective/verb (14% of h^2)		
.943	.876	Adjective/verb ^b
.887	.845	Adjective/words
.875	.831	Nouns/verbs
.787	.796	Nouns/words
.784	.711	Articles/tokens
.775	.775	Adjectives/modifiers
.763	.822	Nouns/pronouns

TABLE 7--Continued

<u>Loading^a</u>		<u>Linguistic Measure</u>
10-factor rotation	4-factor rotation	
Factor II: Adjective/verb (14% of h^2)-- <u>continued</u>		
.745	.790	Articles/words
.690	.592	Modifiers/words
.616	.702	Articles/modifiers
.610	.504	Articles from 500
-.764	-.789	Adverbs/modifiers
-.762	-.659	Verbs/words
-.643	-.767	Pronouns/words
-.496	-.411	Negatives/words
-.453	-.558	Adverbs/words
-.444	-.574	Adverbs/adjectives
-.441	-.345	Negatives/tokens
	-.610	"I, me"/tokens
	-.587	"I, me"/words
	-.403	"I, me"/pronouns
Factor III: Social Orientation (8% of h^2)		
.935	.866	"We, us"/words
.934	.859	"We, us"/pronouns
.862	.799	"We, us"/"I, me" from 500
.825	.853	"We, us" from 500 words
.801	.750	"We, us"/"I, me"
.795	.742	"We, us"/token
.577	.551	Total "We, us"
	.440	Beyond Thorndike's 500
	.435	Types
Factor IV: Positive Adjustment (9% of h^2)		
.813	.717	% Present
.710	.428	% Future
.572	.621	Subordinate clauses/communication units
.543	.610	Types
.420	.412	Articles

TABLE 7--Continued

<u>Loading^a</u>		<u>Linguistic Measure</u>
10-factor rotation	4-factor rotation	
Factor IV: Positive Adjustment (9% of h^2)-- <u>continued</u>		
.408		"We, us"/"I, me"
	.484	Beyond Thorndike's 500
-.854	-.658	% Past
-.671	-.781	Type/token
-.653	-.731	Average length communication unit
-.631	-.767	Negatives/words
-.526	-.699	Negatives/tokens
-.485	-.631	Average length of utterance
-.441	-.592	Average length of maze
	-.555	"It"/pronouns
	-.488	"It"/words
	-.478	Adverbs/words
	-.473	One-word response/utterances
	-.413	Adverb/verb
Factor V: Self-reference (7% of h^2)		
.889		"I, me"/words
.888		"I, me"/token
.864		"I, me"/pronoun
.852		"I, mr" from 500
.424		Total "I, me"
.408		Pronoun/words
-.523		Type/token
Factor VI: Indefiniteness (5% of h^2)		
.819		"It"/words
.840		"It"/token
.785		"It"/pronouns
.770		Total "It"

TABLE 7--Continued

<u>Loading^a</u>		<u>Linguistic Measure</u>
10-factor rotation	4-factor rotation	
Factor VII: Language Maze (6% of h^2)		
.929		Words in mazes/words
.928		Words in mazes/words in communication units
.602		Mazes/communication units
.470		Words in mazes
-.927		Words in communication units/ words
-.580		Average length of mazes
Factor VIII: Adverbs (4% of h^2)		
.925		Adverb/verb
.791		Adverb/word
.553		Adverb/modifiers
.466		Adjectives/adverbs
-.489		Adjectives/modifiers
Factor IX: Unclear as to composition (3% of h^2)		
.695		One-word responses
.654		Words beyond Thorndike's 500/ token
.524		Words beyond Thronldike 500
.485		One-word responses/utterances
-.413		Total negatives
-.410		Negatives/tokens

TABLE 7--Continued

<u>Loading^a</u>		<u>Linguistic Measure</u>
10-factor rotation	4-factor rotation	
Factor X: Articles (3% of h^2)		
.815		Articles/adjectives
.600		Articles/modifiers
.490		Articles/words
.455		Nouns/adjectives

^a Only factor loadings of absolute value greater than .400 are included

^b / = ratio

The loadings on Factor I are of particular interest because the major finding of the first part of this research was the existence of a significant and consistent correlation between personality development and verbal fluency. Factor I accounts for 25 per cent of the variance.

Factor II, Noun-adjective versus Verb-adverb. The measures loading positively on this factor are the various measures including nouns and their modifiers, i.e., adjectives and articles. Those measures with negative loadings are the verbs and their modifiers, i.e., adverbs and negatives. Pronouns also show a moderately high negative loading on this factor; and

when only four factors are rotated, the "I, me" measures appear in this factor. Factor II accounts for 14 per cent of the variance.

This factor is not one of all modifiers as had been hypothesized earlier (hypothesis 2.3) as indicating preciseness of description. Note that adjectives and adverbs are at opposite ends. It is difficult to know if this is a noun versus verb factor (naming versus action) or if this may be a factor of adjective-verb ratio (the old action-qualitative ratio of Busemann and Rorschach). The highest positive loading is the adjective/verb measure.

In his original work on adjective-verb ratio, Busemann (1925) grouped adjectives and nouns together. In German this is not difficult to do because many of their nouns contain an adjective component, i.e., Hauptbahnhof means main railroad station. However, the German language also contains many separate adjectives, a common one being gross or grosse meaning large or much. Busemann argued that an adjective alone has little meaning. It is the adjective-noun group that is meaningful and according to him should be considered a unit.

Perhaps Factor II is an action versus qualitative factor present in language structure that is related to basic personality types. This would tend to substantiate the theories of both Busemann (1925) and Rorschach (1964) that personality dimensions are indicated by action-qualitative words (Busemann) or kinesthetic - color statements (Rorschach). Both theorists felt that it was the relationship or ratio of these two attributes which was the important indicator of personality type, and both discussed the existence of these personality types among the normal (non-pathological) population. This needs further research.

Factor III, "We, us" factor. All measures involving "we, us" have high loadings on this factor. This might be interpreted as a social orientation factor even though the first person plural includes a reference to self. "We, us" refers to self plus at least one other person. This may infer the willingness and ability to include reference to self and others simultaneously in one's language patterns. The "I, me" measures and the "it" measures do not load at all on this factor. Representative

loadings (Appendix D) of these two measures are:

"I, me"/words	014
"I, me"/pronouns	-078
"It"/words	026
"It"/pronouns	-083

When only four factors were rotated, this factor appeared as the fourth factor and two measures of language diversity loaded on this factor. Since these latter two loadings are low and since these are not ratios, their significance is unclear.

The question is raised as to whether this factor may be an artifact due to the same number appearing in the numerator of the measures. The same question is raised about Factors V, VI, VII, VIII, and X of the 10-factor rotation. Factor III accounts for 8 per cent of the variance.

Factor IV, Time, positiveness, and preciseness of expression. The highest loadings on this factor, when ten factors are rotated, are the percent of references to time. References to the present and the future load positively while references to the past load negatively. The ratio of subordinate clauses in communication units also loads positively on this factor. Subordination is a measure of ability to express precise relationships. "Types", a measure of vocabulary

variability as determined by word frequencies, appears in this factor, as does total articles and total "we, us". Negative loadings are the ratio of negative words to all words produced and the average length of utterance units, communication units, and mazes. This factor accounts for 9 per cent of the variance.

According to these loadings, this factor would seem to be a combination of orientation to present and future, of positive orientation, and of more preciseness in expression. These characteristics often are considered attributes of better adjustment or maturity. Their combining into one factor adds credence to this, thus this factor might be called a positive adjustment factor.

When only four factors are rotated, this factor comes out as Factor III and contains a positive loading of "beyond Thorndike's 500 words." Ratios of "it", of adverbs, and of one-word responses load negatively on this factor when four factors are rotated. These negative loadings could be interpreted as measures of less preciseness and this fits the construct.

While the two groups of subjects in this study, the zestfuls and the normals, did not differ

significantly on most of the individual measures, Factors II, III, and IV do seem to deal with aspects of adjustment. These three factors give possible dimensions for measurement and for development.

The factors after IV add little variance. The first four factors accounted for 56 per cent of the variance and the last six for 28 per cent. Each of the remaining six will be described and then discussed.

Factor V, "I, me" factor. All measures with high loadings on this factor are ratios of "I, me." The total count of "I, me" loads less heavily as does the ratio of all pronouns to total words. It is difficult to interpret the negative loading of the type-token ratio because of the possibility it was influenced unduly by the use of the six subjects who spoke less than 500 words total. The possibility that this measure may be an artifact of these six cases was discussed in the first section of this chapter (See the discussion of Hypothesis 3). Factor V could be designated as a self-referent factor. This factor accounts for 7 per cent of the variance.

Factor VI, "It" factor. This factor includes all measures of "it." These include the total use

of the word as well as its proportionate use. The use of "it" would seem a reference to indefiniteness. Factor VI accounts for 5 per cent of the variance.

Factor VII, Language maze. The highest loadings here are the proportion of words used in mazes to all words produced and to words produced in communication units. Although this factor did not contribute much in this study in terms of total variance, it did emerge as a definite factor. Factor VII accounts for 6 per cent of the variance.

Factor VIII, Adverbs. All adverb measures load high and positively on this measure. The adjective-modifier ratio would be expected to load negatively here. Since adverbs and adjectives added together equal total modifiers, as the ratio of adverbs to total modifiers increases, the adjective-modifier ratio would decrease. When only four factors were rotated, some of these adverb measures appeared with negative loadings on Factor IV. Factor VIII accounted for 4 per cent of the variance.

Factor IX, Unclear as to composition. This is a confusing factor since it combines in positive loadings briefness of expression as measured by

one-word responses and diversity of language as measured by words used beyond those in the Thorndike-Lorge (1944) list of the 500 most frequently used words. This combination of positive loadings along with negative loadings of the use of negatives is difficult to organize as a construct. Factor IX accounts for 3 per cent of the variance.

Factor X, Articles. This factor includes loadings from all measures in which articles were ratios. The two ratios of articles to modifiers and of articles to total words appear also in Factor II. The other two measures appearing in this factor do not appear elsewhere. Factor X accounts for 3 per cent of the variance.

The ten factors which were originally rotated, as well as the four factors which were rotated later, have been presented here. The four major factors are: Factor I, word fluency, Factor II, noun/adjective versus verb/adverb, Factor III, "we, us", and Factor IV, orientation toward time, positiveness, and preciseness of expression.

The question arises whether Factors V, VI, VII, VIII, and X (and possibly III in part) may be artifacts of this particular set of data. Did these factors emerge because the same set of numbers appeared in the numerator in each factor's computations? On the other hand, these factors fit language categories.

Factor IX is a confusing factor because the basis of it is not clear. The variance is low. It may also be an error factor.

All ~~ten~~ factors have been included and discussed because of the clear unity of the factors. It is recognized that five of these (V, VI, VII, VIII, and X) may be artifacts of this set of data. Further research is needed to determine if these are basic factors of language structure.

Suggestions for Further Research

Certain questions concerning research in other areas are raised by the results of this study. How does one judge optimal mental health? What part may verbal fluency have played in the original selection of the subjects for Foreman's (1964, 1966) study? Foreman's two groups, those nominated as

psychologically healthy and those not having received such nominations, did test significantly different on ten of the eleven dimensions of optimal mental health devised by Foreman. However, the question remains. How do people generally judge subjects as optimally healthy when the subjects are not intimately known by the judge?

A second major question concerns using some of the linguistic measures employed in this study to determine successful outcome in psychotherapy. In research of psychotherapy, some of these measures have been used and shown to correlate with outcome success. If these changes in language behavior are desirable, are they restricted to the interview or do they continue outside of the interview? For example, if a client changes in his use of the proportions of "I, me" to "we, us", or if he uses less negatives, do these changes in behavior continue outside the interview? Perhaps this could be measured by comparing samples of a client's spontaneous language behavior outside the interview both before and after counseling. This would be difficult. It is much

easier to measure changes occurring within the interview or changes which can be indicated by oral or written answers to tests or questionnaires.

Another question which arises is whether these changes in a client's language patterns are due to conditioning in the interview. If a client uses more "we, us" words and less negatives, is this due to his adopting the therapist's language system which likely includes less of these words? It has been shown that success in counseling may be related to the convergence of the language systems of the client and counselor (Persons & Pepinsky, 1966) or to the client adopting the values of the counselor, as measured by changes in the client's language system (Lanfield & Nawas, 1964). Are these changes in language behavior due to verbal conditioning within the interview and do they transfer to other behavior and to the client's language system outside the interview? It would seem necessary to investigate spontaneous oral language behavior in other than interview or therapy situations to learn more about the variable of language structure as it is related to personality

development, to client behaviors, and to the outcomes of counseling.

Questions are also raised about measures of language behavior among adults. The measures used in this study may be appropriate to developmental and psychotherapy research but may not assess differences in psychological health among adults. Perhaps new measures need to be devised to determine if differences in language behavior exist between those of optimal psychological health and those less psychologically healthy. Another possibility is that language development may reach a plateau in adulthood and that differences in oral language behavior are no longer evident.

CHAPTER V

SUMMARY AND CONCLUSIONS

Language is basic to human existence as we know it and a major activity of man throughout his lifetime. Oral language behavior is a part of almost all human behavior. For many years psychologists studied language as it related to other activities such as thinking, learning, and problem-solving. A survey of the literature reveals that child and developmental psychologists have centered their research of language on acquisition and the development of language skills. These studies have been concerned mainly with the language behavior of children and occasionally with that of adolescents in high school.

The research of oral language behavior of adults has occurred largely in the area of psychotherapy. There language has been studied as an indicator of clients' progress and as a tool useful to the counselor.

Research and theory in both developmental psychology and psychotherapy suggest a relationship

between language behavior and personality development. If such a relationship exists, it should be evident among other than children and among other than adults in therapy. If a correlation exists between language structure and personality development, this should be evident between persons who reveal optimal psychological health and those revealing less psychological health.

This study was designed to investigate two things: (1) the relationship which may exist between language structure and personality development, and (2) the possibility that basic factors exist in language structure.

Seventy-five linguistic measures designed to measure various aspects of oral language behavior were selected according to the following criteria: (1) objectivity of measurement, (2) having produced meaningful developmental results in previous research of oral language behavior, (3) having exhibited relationship to changes in psychotherapy with adults, and (4) seemingly related to young adult development. Thirty of these 75 were total counts and included total words spoken, totals of certain parts of speech and

special words, total utterance units, total communication units, total mazes, and total subordinate clauses in communication units. Forty five of the measures were ratios determined from the original thirty counts. All seemingly meaningful ratios of words or units to one another were computed. These 75 measures were designed to measure: (1) participation in language space, (2) the use of parts of speech and of certain words, (3) vocabulary variability, (4) time reference, (5) negativism, and (6) clearness of expression.

Subjects selected were the 58 college students used by Foreman (1966) in his study, "Some Empirical Correlates of Positive Mental Health." His study revealed that his two groups, named zestfuls (psychologically healthy) and normals (less psychologically healthy), differed significantly on ten of the eleven measures he used to assess optimal mental health.

Foreman had each of his 58 subjects participate in a small discussion group ($N = 2, 3, \text{ or } 4$) for a period of 40 minutes. Four trained judges rated the two groups on six personality dimensions, and the zestfuls measured as significantly different from the

normals on all six measures. Foreman concluded, because of a possible "halo" effect, that the results did not indicate six discrete personality dimensions, but he stated that the two groups did behave in very different and distinguishable ways in small discussion groups. Foreman's judges used the taped recordings of the nineteen small discussion groups. For the present study the nineteen tapes were transcribed verbatim. These protocols then were analyzed using the 75 linguistic measures selected.

Statistical analyses included: (1) computation of the means and standard deviations and the use of F ratios to determine the significance of the differences between the means of the two groups, and (2) a factor analysis of the 75 variables.

Conclusions

From this research the following tentative conclusions seem indicated. The seven hypotheses will be considered in turn with a brief discussion of the results which support or fail to support each hypothesis.

1. The first hypothesis states that the zestfuls will participate more in the 40-minute time span than the normals. It was found that the zestfuls spoke

significantly more words than the normals (.05 level). Since theoretically all members of each discussion group had the same opportunity to speak, this measure of total word production supports the hypothesis. The zestfuls spoke a few more times, they tended to speak longer each time they spoke, and they tended to use less one-word responses. However, none of these last three measures reached statistical significance (.05). This hypothesis may be accepted only in terms of total words produced.

2. Zestfuls will measure on variables involving the parts of speech in the directions suggested by previous research as evidence of maturity: they will use more "we, us" and less "I, me" and "it" pronouns; they will use more adjectives, adverbs, and articles; they will use a higher ratio of nouns to pronouns and of adjectives to verbs. This hypothesis was not supported and must be rejected. The only measures which reached significance were the totals of the various words and parts of speech used by the zestfuls. Since they spoke more total words, this was expected. They used more words of all kinds.

3. The vocabularies of the zestfuls will show greater variety than those of the normals. This

hypothesis was rejected since the two groups showed no significant difference on either the type-token ratio or the measure of variability determined by the Thorndike-Lorge (1944) word-frequency lists.

4. Zestfuls will be more oriented toward the present and future and less toward the past than the normals when measured by verb tense. The zestfuls used proportionately more verbs in the present tense and less in the past tense than the normals. The two groups were no different in the proportion of the future tense verbs they used. These results suggest partial substantiation of this hypothesis but the support is not as clear as would be desirable.

5. Zestfuls will speak more positively than the normals when judged by the grammatical negative. The proportion of negative words to total words was similar for both groups, hence this hypothesis was rejected.

6. Zestfuls will rate significantly higher on clearness of expression, as judged by their use of more and longer communication units, less and shorter mazes, and more subordinate clauses in their communication units. The totals of all of the measures used to test this hypothesis were higher for the

zestfuls but, again, this probably reflects the fact that they talked more. They spoke more words so they produced more of everything. When ratios to total words produced are considered, the significance between the two groups declines. The number of communication units and their average length was not significant, nor was the number of mazes. The average length of mazes, although not significant, was higher for the zestfuls, which was in the opposite direction to that predicted. This hypothesis was rejected.

7. This hypothesis states that basic factors exist in language structure which can be determined by factor analyzing the 75 linguistic measures used in this study. Ten factors were rotated. Four factors accounted for most of the variance. These four are: Factor I, verbal fluency; Factor II, adjective-verb; Factor III, social orientation, and Factor IV, adjustment indices.

The six remaining factors although accounting for less of the variance did indicate clear unities. They are: Factor V, self-reference; Factor VI, indefiniteness; Factor VII, language maze, Factor VIII, adverbs; Factor IX, an unclear factor; and Factor X, articles. It is recognized that five of these last six factors (V, VI, VII, VIII,

and X) may be artifacts of this particular set of data because of a common number appearing in the various measures which loaded on each factor. However, since four basic factors did emerge, hypothesis 7 may be accepted.

According to this study the major difference in oral language structure between two groups, the zestfuls and the normals, who had measured as different on certain personality dimensions was in their verbal fluency. The tendency of the zestfuls to be more verbal, to produce more words, was revealed repeatedly. Verbal fluency also emerged as Factor I in a factor analysis of the 75 measures used in this study. The only other language structure which approached significance was the tendency of the zestfuls to refer to the present as determined by verb tense and the normals to refer to the past. None of the other measures were significantly different between these two groups.

The results of this study may indicate that measures which assess differences in language development of children or differences in therapeutic interviews may not be applicable to two adult groups which

measure significantly different in personality development but are from the same general population. Perhaps language development reaches a plateau in adulthood with differences no longer evident. Perhaps new linguistic measures need to be devised in studying differences in psychological health. If differences exist they would seem to be other than most of those measured in this study.

The factor analysis suggests the possibility of the existence of three factors which may be related to basic personality types. Factor II emerged as an adjective-verb ratio and tends to substantiate the earlier works of Busemann and of Rorschach both of whom hypothesized an action-qualitative dimension in personality. Factor III reflects a socialization dimension. Factor IV suggests the existence of an adjustment factor in the measures used. Combined in this factor were orientation to present, positiveness, and clearness of expression. These often have been suggested as attributes of maturity.

Although the relationship between personality development and language structure is not clear from this study except for verbal fluency, such a relationship is suggested and warrants further research.

APPENDIX A

1. Copy of Letter Used by Foreman for Nominations of Psychologically Healthy Students (from Foreman, 1964, p. 79)
2. Procedure and Instructions Used by Foreman for his Small Discussion Groups (from Foreman, 1964, pp. 109-110)

INSTRUCTION FORM FOR CLASSROOM INSTRUCTORS FOR
THE NOMINATING OF MENTALLY HEALTHY SUBJECTS

Dear Instructor:

A study is being designed which is attempting to measure some of the empirical correlations of positive mental health. However, a central problem in a study of this type is the identification of a "mentally wholesome" population, and it is with regard to this aspect of the study that your help will be greatly appreciated.

You are requested to think of the students with whom you have contact in your present classes. Would you consider any of these students as outstanding examples of positive mental health - not only in relation to the other members of your class - but who you would consider as outstanding in any class.

In order to better define the concept of "wholesome" personality, some of its characteristics as given by Allport, Jahoda, Maslow, and others are provided as follows:

1. Spontaneity
2. Zestfulness
3. Problem centered rather than ego centered.
4. Creativeness
5. Accepting of self and others, and of nature.
6. Capacity for warm relations with others.
7. Ability to rise above turmoil and misfortune.
8. Possession of ideals.
9. Demonstration of democratic social interest.
10. Independent of culture and physical environment.

The study recognizes you have not had sufficient opportunity to evaluate your students on each of the above characteristics. However, we are interested in the name of any student who, to the best of your knowledge, seems to reflect these characteristics in a global sense. One caution seems necessary; please be wary of over evaluation on the basis of high academic achievement.

Please record the name of any student(s) on the following form. In the area marked "A", fill in the name of any student(s) you would recommend without reservation. In "B", record the name of any student(s) who you would

recommend as a picture of positive mental health with only very slight reservation. If you have no students meeting these criteria, write the word "none" in the appropriate areas. Thanks for your cooperation.

Sincerely,

Milton E. Foreman
Counseling and Testing Center
Student Services Bldg.

(Quoted from Foreman, 1964, p. 79)

PROCEDURE AND INSTRUCTIONS
FOR SMALL DISCUSSION GROUPS

"The subjects entered the room as they arrived and selected any chair they desired. After an appropriate waiting period for tardy subjects, the writer presented the following standardized problem to the groups which, by virtue of their homogeneous educational backgrounds, was designed to promote group interest, but would not serve to structure relationships between the group members:

As you probably know, teacher education programs are periodically evaluated by a national accrediting agency. The National Council for the Accreditation of Teacher Education will visit our campus soon in order to evaluate our program.

The College of Education is preparing for this visit in many ways. One aspect in which we are particularly interested is how present students view the effectiveness of our training program. Therefore, we would like you as a group to consider and discuss any and all aspects of the teacher education program, both those you like and those you dislike. We would be very interested in any suggestions you may have on how you would like to see the program changed or improved.

We will record this discussion for the purpose of tabulating the comments of all students, and therefore, we are interested in what you say, but not in identifying particular students. This means two things: one, we want you all to feel free to help one another elaborate upon any idea, and to agree or disagree with each other's viewpoints; and two, remember we invited you. This material will in no way be traced back to you as an individual, so feel free to be just as positive or negative as you like.

Because our time is so limited, we would like you to warm up to this discussion as soon as possible. I'll give you a starting point which you may continue to follow or not, as you like. One criticism of our program that has been voiced by many students has been in terms of the image it presents to the rest of the university. Many students have complained, for example, that people from other colleges - both faculty and students - tend to look down on education majors and say we have it soft; that anyone can get an education degree. Do you think this image is real, and real or not, is there anything we can do to change it?

Do you understand our purpose? Are there any questions?

The writer then withdrew from the group conference and entered the listening room. The group discussion began without further direction, and the participants were entirely free to communicate their views and feelings."

(Quoted from Foreman, 1964, pp. 109-110)

APPENDIX B

Sample Transcript

Key:

Able	-	Student
Baker	-	Student
Charlie	-	Student
Dog	-	Student
Dk	-	Don't Know

TAPE 10

Able I was selected as a freshman to be in an experimental group.

Charlie Ya.

Able I really haven't had much. I never had 408 or any of those, you know.

Dog 408 is ridiculous. The, when I took it our instructors did it the wrong way, and you, there were so many different ways it was being taught and everyone learned something different that we really didn't learn that much and it's just extra hours where if you wanted to take another elective you couldn't get it in because you have to take this Education and in 408 you couldn't expand in any particular area because they said, well, we can't go into that because you're going to get that in 533 or we can't touch on that because you're going to get that in your special methods, we can't touch on that because you'll learn that in the History of Education, you can't touch this because you'll learn that in the Philosophy of Education so consequently you went to class and you didn't do very much at all.

Charlie Are you still in that special program?

Able Uh-umm. Ya, I only have one more course which is a seminar, I think it's a one or two hour, and that will be next fall and that's it.

Charlie You don't take any this quarter?

Able No, the first two years we did.

Baker What is this?

Able Uh, the first year was devoted to trying to get insight into Education in the school and the community and things like that through contemporary novels, you know, contemporary literature and realting things like that.

Charlie You don't have the other courses then like we did?

- Able Well, what do you mean the other courses?
- Charlie Well, I mean the regular Education courses like 535 and this.
- Able I took one, it was 535. It was taught, the first two years we had Dr. Mell and Dr. Mashar, and this was taught by a guy that is one of the regular teachers and it was probably the closest thing I've had to a real education course. It was supposed to pick up the things that we'd felt we'd missed in the first two years, and, and I enjoyed it very much. We did our participation and we taught in class and
- Baker Well, I, well, now see when I took it we had the two courses 533 and 534. Did you just take 535?
- Charlie I had 535. It was one.
- Baker Well, see I thought it was a waste of time. We had 33 and 34.
- Dog Ya.
- Baker Because you didn't, the same, you discussed the same thing. You didn't go any further, but now they have 535 which I think is a good idea. I still think they could eliminate 408.
- Dog Yes.
- Able What do you think of Psychology 407?
- Dk I'm taking it now and I put it off till I was a senior because I
- Dk I don't think you need it. It's a waste
- Dk I don't know whether I was hoping they'd drop it from the curriculum or what, but I just didn't want to take it at all.
- Baker Ya, but I think you're better off if you take a....course.
- Dog Ya, as a follow after 401 because I didn't learn anything more than in 401.

- Baker No, but instead of using maps you're using people.
- Dog Ya, and it's all common sense.
- Charlie I thought those case studies....That's about the only part of the course.
- Baker But not all instructors did this.
- Dog Ya, it depends on your instructor. I know some of the instructors I heard were very good. The one I had was rather terrible. We didn't do very much at all.
- Charlie I think they were good practice, uh, the last couple of weeks.
- Baker Uh-umm. Ya, uh, I used case studies when I was in there, but a lot of them haven't used case studies and I think, instead of having a 407 requirement they should have, uh, for instance I took Adolescent Psychology which I think helped me more because, uh, being in Secondary Education you would.
- Able One thing about Psych. 407, it's the whole book seems to be so child centered. I mean, really child, elementary child.
- Baker And, uh, for the, I mean I also took Exceptional Children.
- Able Oh, did you?
- Baker And there, at least, you had a little bit of knowledge of how to handle the gifted child and retarded child, I mean, you're going to have these in your classes anyway.
- Able Uh-umm.
- Baker and you might as well learn how to handle them. In 407 you really didn't learn how to handle anybody.
- Dog It's more of a survey course.
- Baker Uh-umm. Ya. It's a survey course all over

again and I think that's the trouble with most of the Education courses. They're survey courses, you don't touch on anything.

Able Uh-umm. No methods.

Baker And then when you get, have you taken the History of Education?

Dog No, I'm only a sophomore.

Charlie I already have.

Baker You've had History of Education. Do you have history? Is it a philosophy course or is it a history course?

Charlie Well, it's neither one. The first one I've got it, uh, well, when I first came into it I expected it to be dry history, you know, such and such happened at such and such a time, write it down and memorize it, but he shys away from the textbook, he tells a lot of stories, and....uh, philosophy of history and all this.

Baker Uh, have you had a mid-term in there yet?

Charlie No, he hasn't said anything about a mid-term yet.

Baker I just wondered because

Charlie Well, I don't think it would be interesting unless you had somebody like him to present it in the way he does.

Baker But, I was just wondering because, uh, you know, you've heard all these different Horace Mann, John Dewey, uh, all these great educators and I haven't had a course yet where I've learned about any one of them. I mean, you know, this is, to me this is all part of the history.

Dog Uh-umm.

Baker I mean, Horace Mann started his first school to actually train the teachers, you know, his Normal School and that. I think this all belongs in the History of Education and yet, I hate to say it, I don't know anything about it other than what I've picked up on my own reading.

- Able Ya.
- Baker Because in the History of Education we, we talked about the Athenians and the Spartans and of course that is something, I think you get just in a history anyway.
- Charlie Well, we studied all about uh,
- Baker We didn't concentrate that much on the History of Education.
- Charlie We studied about when they first started high schools and, uh, grammar schools and things like that in 535.
- Baker Well, see, we didn't do that in 533 and 534.
- Dog That we didn't or we haven't gone into I think just seeing what all we're going to do on it.
- Baker And I think, think we should do that just as well as, I mean
- CharlieI don't think that they can waste too much time. Maybe a couple of weeks in a quarter.
- Baker No, but I think you should, I think you should study the background more, the general ideas and more of the different, uh, well, for instance, even when in Philosophy of Education you should know where these different philosophies started. I mean, how did they start, when did they start, where, whom?
- Able I was just thinking. I got a great deal out of my September Field Experience, not so much out of participation because we only had an hour a day, you know, one class period, but it seems to me, uh, that you could get so much more if you could spend more time in actual classroom situations whether you're observing or just helping or anything because I really, honestly, I felt professional those three weeks that I was doing September Field Experience and after this I felt like a stupid again.

Baker Uh-umm. And I really think they should require more time for student teaching. I don't think....is sufficient. I mean, I have, I know students on it last quarter.

Able I only did it for fifteen hours. I'm dying to go back to student teaching.

Baker Ya, and I'd do anything to get back to student teaching because I think I learned more in student teaching than I learned in all of my courses.

Able That's the way I feel.

Charlie

Able I want to do it for fifteen hours because I think anything short of that is just.

Baker Well, I couldn't take fifteen hours, I had two other courses that I had to take so I only had nine hours, and even with the hours you have to spend four hours a day in the school. The only thing in nine hours of student teaching, I think they should allow you to teach two courses because you have three periods of observation and you're supposed to, you know, get two hours of school which is really too much time because you, there's not enough to keep you busy. You can only observe so many classes, you can only, uh, look up so many records, you know, I mean, this is what they expect of you and when you think two hours or two periods.

Able Uh-uh.

Baker What, 45 minute periods, two periods of doing that and one period of teaching really,

Able Uh-uh.

Baker I would have liked to gotten rid of one of these periods and taught another class. My cooperating teacher worked very nicely with me, she gave me her study hall to work with. She said you might as well because you're bored.

Able Ya.

Baker Which I was. I couldn't, I had too much time. But, I think, uh, I think that you should teach two schools in Secondary, at least well, elementary they have the whole grade.

Able I had a fifteen hour.

Baker Fifteen, well, they can only, the minimum is twelve for them.

Dog

Baker I don't think they do just, no, I don't think they do.

Dog No, I think it's twelve is the minimum.

Baker Well, see, I think that maybe that should be the minimum for Secondary people or maybe not twelve hours but two classes.

Able Ya.

Baker Two teaching classes should be the minimum that we should have because you learn more from that. I mean, you don't, you talk about all these.

Able I think that's where you learn your actual knowledge that you can really use.

Baker I mean you get to teaching and they talk about all these different methods and how they approach to students, how to handle this situation and well, you don't, you don't even think of it really that much. You think well, ya,

Able Uh-uh.

Baker sure you do it this way until you get in front of the class and the boys start a fight in the back of the room or something, and well, let's see what did I learn in class.

Able Uh-uh.

Baker Ya, if they did this you're supposed to do this and it doesn't work because it's too theoretical in class and it's not cut and dry.

Charlie Well, I think they do have one good effect in that they teach you kind of, they give you kind of a general background in say discipline or something and, uh, you shouldn't have to stop and think exactly what should I do now, he's done this, and debating what should I do, if I can remember from my course, you know, you kind of have, a, uh, an inside kind of a concept, I mean, it should become automatic or second nature to you.

Dk Uh-uh.

Charlie I think this is the object to develop this in a, uh, student who is in college, that's the best way, that's the only way you can handle this. You can't always

Abletime you go back.

Charlie Sure....

Dick I didn't, I think, uh, I'm just wondering though how you get this instinct you have.

Charlie It's something that kind of grows on you.

Dog I heard a suggestion of the students getting off in either observing or participating in a class before they're juniors or seniors to see if they really like education. We were talking about this in the 535 class, you know, you don't really get a taste of it until you are an upperclassman, and, gee, then if you don't like it, you know, you're stuck.

Able Well, isn't that what September Field Experience is supposed to do for you?

Dog But you don't do that until the beginning of your junior year.

Baker Well, you can do it at the beginning of your sophomore year.

Able You can do it.

Dog But they never tell you about it, I mean, I have never heard a thing about it yet.

Baker I think they should, uh, well, see when they make the announcements in the bulletin

that says at the beginning of your junior year by the time you're

Able Uh-uh.

Baker they advise that you do it then or before you're a senior you have to do it. I mean they really don't say, well, you know, it would be very helpful in, you know, before your sophomore year.

Dog I think if you do it two, two times too, it would be very helpful

Able Uh-uh.

Baker Sure it would be especially, well, especially for someone in secondary.

Able Ya.

Baker They can do it once in the junior high and once in the secondary schools.

Able Or maybe once in your major and once in your minor.

Dog Uh-uh.

Baker Or something like that so you get the different approaches. I did it at the beginning of my sophomore year.

Dk laugh

Charlie It's very inconvenient for me. I come from Michigan and up there as far as I know where I live it's just a little ways from Michigan State University, and they don't have any. I've never heard of a program like that, working in the schools, in September before school starts. It was completely new to me when I came down here, and if I, when I go back there and if I had to do it in a school up in Michigan I don't know how they will accept it right away. I imagine they'll probably think it's a good idea.

Able That's what they'll do. They, they'll, uh.

Charlie That's the same thing where I'll have to go and ask the principal if he'll accept it.

I was wondering about this. Did you say you had participation in one course or not?

Able Ya, I think it was in 534.

Charlie Two weeks.

Dog Uh-uh.

Able Uh-uh. I think we did it for three weeks actually. We did it longer than usual.

Charlie How would you compare that with the September Field Experience?

Able Uh, personally I didn't get as much out of it because we just, you know, you come and rush in and sit in the back of the class and at least I had to. I didn't get to assume near the teacher role that I did during September Field Experience. I think mostly because I was with a teacher and it was her very first year and I was her fourth or fifth observer.

Charlie Did you teach?

Able Uh, a couple of days she, ya, I taught Spanish songs, Christmas carols to them, that was in November, But that was just about the extent of it.

Baker Well, I got sort of cheated on my participation. I'm doing it now, but it's really only observing because, uh, apparently they didn't even check with the teacher who they assigned me to and she had no idea that I was coming and she was very busy and she had no idea that I was coming and she was very busy and she had no time for participators.

Able Ya, that's what happened with me too. She didn't even know what a participant was, but when I told her I was going to watch her class she just threw her hands up in the air and said, oh, this makes five or something, and it was her very first year, she just came out, she just said, I don't want to appear jealous or anything, but this is my class and I only had them for two or three months, this is my first year of teaching and I'd kind of like to do it myself.

Baker Well, don't you think this is a result of the fact that there are so many other students here at the college.

Able Ya.

Baker that have to go out?

Dog They really use this field experience immensely.

Baker I've often wondered, I mean, I found that, uh, I was talking to one of the men from Cleveland. They'd love to have students from Ohio State do their student teaching up in Cleveland.

Able Oh, really.

Dog Gee.

Baker They have this reciprocal bit, if students come up there can we can get an education?

Dog Ya.

Able Uh-umm.

Baker That's the way that county works, and I guess the other areas are looking for that too because Cleveland, I don't think has any type of system, I haven't heard of it any way, but I think we just have too many around here plus the fact that you have them from, uh, what's that.

Able Western, Otterbein.

Baker Otterbein and Ohio Western.

Charlie Do they do that too?

Baker Their student teachers do anyway.

Charlie Oh.

Baker So you have them circulating in this area also, and I think there's just too many for this area to handle. I think they're gonna have to go into other areas in order to give sufficient background.

Dog But still, I don't know if it would be too much work, but at least to contact the teachers

Able Ya.

Dog to find out, you know, if you are supposed to be doing participating to give you the chance to do it. I mean, I'm sorry, I'm too busy, I'd be glad to have you observe, but that's about all.

Charlie I had a really good experience in learning from 535.

Able Did you?

Charlieand, uh, well I was late. We had a little car trouble the first day. I was about five minutes late and I walked in and he came over and he was in the middle of a lab or something and he called me by name and everything. He was real nice, and I taught the last week, and he had very modern methods. It was more like what, you know, so often you learn things here in the school and it's completely different.

Able Ya.

Dog Uh-umm.

Charlie They teach the right things here and then you go out and do the wrong things, but it was about the closest thing it seemed to a democratic science classroom.

Baker Well, since you're in physics....in English, but have you noticed whether you're, what you're learning in college is up to date with what they're teaching in schools? See, I'm not that familiar with the area of physics, but in the area of math they're using all the new program called S.M.F.G. mathematics. It's actually S.M.F.G., it's not new, but it's comparatively new because they're starting it in the schools. They're starting it in the junior and senior high schools, but as students in mathematics we don't even study it.

Able Oh.

Baker Other than it's mentioned in our methods courses. You know that this is something new, you should

- Baker Other than it's mentioned in our methods courses. You know that this is something new, you should learn about it, and yet you have no opportunity actually in college, in the college curriculum to learn about it, and I'm in a situation where I'm going to be teaching it in September.
- Able It's really just about the opposite in my field, in Spanish and French languages, uh, they teach you at the university that students aren't to see the written words, they're just to hear and learn how to say it back and to learn it more or less like we learn English when we were babies, and in high schools they're still doing this conjugating of verbs and translating and giving the kids written work right away and it's really just about backwards from the way we're taught to teach it, and I've had more friends that go to schools to do their student teaching and their advisor here says, now you've got to teach it this way, the way we teach you at Ohio State and the participating teacher or whatever she's called says well, I'm not going to have my students, you know, you're not going to mess my class up with the kind of stuff and this, a friend of mine really had to drop out of student teaching because the two, the college person and the high school person just couldn't get together on it, and it was really a sad situation, you know, I mean she's having to take twenty hours or something, uh, I don't know, a lot anyway just to catch up.
- Charlie I don't think that exists in....too much.
- Dog Those things, those things are poor planning, I mean, I don't know on the part of the college or something. I mean that that should happen that the girl would have to be burdened with twenty hours maybe when she was doing her student teaching, I mean, I think there should be some way that.

- Able It really honestly was too bad because the teacher that she had was just, she was an older woman that was very set in her ways. As a matter of fact, it's the woman I did my September Field Experience with before I had had any methods courses and I didn't know that she was, that's just the way I learned it when I was in high school and then, then, I got here and took a methods course and, uh, they said well you don't give the students their books for three months or so, uh, all of it's just, you know, verbal, just like they were babies and learning English again only it's another foreign language, and, uh,
- Baker I learned my foreign language.
- Able Which way, the oral?
- Baker Ya.
- Able Did you?
- Baker Of course, I learned it in the second, I guess that's why. I mean we could just barely read anyway.
- Able What language was it?
- Baker French. I've forgotten a great deal of it, but I learned it that way, and I always thought that was a good way to learn it because you have the vocabulary before you had to sit down and write,
- Able Uh-umm.
- Baker and you knew whether your sentence was correct or not, I mean, you've got
- Able Just by hearing it.
- Baker Just by hearing it, Uh-umm, you know, you couldn't.

- Able Well, another thing is when the kids see the written rules it really hampers their pronunciation because they will pronounce the words the way they would be if they were in English, you know, and, and they really lose on the pronunciation.
- Baker Do you think, uh, to alleviate this problem that your friend got in that the college when setting up, it seems kind of hard to do in a university this size, but in setting up these different appointments that the, uh, in student teaching, say, let's limit it to student teaching that the supervisors from the college should make a point to go out and discuss, uh, what they expect of the student teachers with the cooperating teachers so that really in advance before the student even goes into the school and if they find out that their views are not compatible that, that is not a good place.
- Able Ya.
- Dog I think it would help a lot.
- Able I do too. Now I have another friend that was doing student teaching the very same quarter and was at a school where they had a listening lab in the school and the teacher was just, uh, received her very well and all of her ideas that she didn't use a book and she taught it very, the way that she was instructed to teach or she learned how to teach, and she got an A in student teaching and just did a wonderful job, and I think the students did real well with her.
- Baker Well, I feel that I was lucky because my supervisor went out and talked to my cooperating teacher first or during the first week anyway.
- Able Uh-umm.
- Baker Before he even came to observe me or anything else he talked with her and said, well this is what he expected.

Able Ya.

Baker and what, you know, what you were expected or what kind of, uh, atmosphere do you want in your classroom,

Able Uh-umm.

Baker how much limitations are you going to put on the student teacher to get this straightened out so when you went there you didn't know, well who am I suppose to please, am I suppose to please myself or the teacher? Am I suppose to please my supervisor?

Able Ya, uh-umm.

Baker Because that puts you in an awful position.

Able See the problem here is that neither the supervisor nor the cooperating teacher were willing to give an inch, you know.

Baker In that case I don't think that the student teacher should have been placed.

Able It was a bad thing. I mean it really upset the girl, I know.

Dog I have a question. I've heard that there are too many Education courses, you know, and that many of them could be combined. Now I have, I've only had two and I was just wondering, you've probably taken more than that, what do you think about that?

Charlie It's a good point.

Baker Well, I think first of all I think 408 can be dropped completely.

Dk Uh-uh.

Baker I think 533 and 534 should be combined, well, they are now, they're combined into 535, 6, what's the Health course?

Able 610

Charlie A five hour with eight classes a week.

Baker Which?

Able Health Education.

Baker Ya, it is.

Able 610 I think it is.

Baker 610 is.

Dog Health is that?

Able Uh-uh, Health Education.

Baker Health Education, and I don't feel that I go anything out of that course. Well, you aren't suppose to.

Charlie Oh, I think so.

Able Well this program that this thing that I'm in I didn't have to take that at all.

Baker I know.

Able And we don't have to take History of Education because

Baker I know several that didn't have to take it under that program.

Able Ya.

Baker and I'm just wondering since it was felt that you didn't have to take it under that program exactly what they feel you're getting out of the course. I would prefer if it was more of a First Aid type course.

Dog What was it? Really what was it?

Able I don't have any idea.

Baker Well, you studied, we sort of skimmed over various diseases that students may have, and, uh, you should go for a physical check-up, the teacher should work with the school nurse, cooperate with her.

Charlie How to keep records and watch the students.

Baker How to keep, how to keep health records.

Able How to keep health records, what?

Charlie Spring test and all that.

Baker We had actual folders.

Dog Teachers are suppose to do that?

Baker Well, in some of the smaller schools I guess they do it.

Able How do you learn how to keep a health record? I mean, isn't it just where you write in things or do they mean that you have to write out written reports on?

Charlie It's, uh,

Baker No, these are just the typical health records which you do in the schools which I thought was stupid.

Charlie As far as the teacher's concerned it's more of an observation thing and they.

Able Oh, I see.

Charlie They're more of in a referral position to the Health nurse or school doctor of something.

Able Ya.

Charlie And then a student is referred to them, then they go over and write it down.

Able It seems like maybe healthe or something could be combined with the Psychology bit because we, we discussed that a lot.

Baker Well, here if you enter when you're a Freshman you have to take 400 Health anyway.

Dk uh-umm.

Baker In which you learn about these different things and I think they could maybe set up this special section 400 for Education people where they can bring this in because I think it was a lot of repetitious material.

Dog And health 400 is worse than anything.

Charlie I didn't have Health 400 so I don't know.

Baker Well, see that, if you take Health 400, 610 is nothing more than a repetition of 400 except they say, well, the teacher should do this instead of being a nice normal citizen, you know.

Charlie Well, this ought to be either one time or the other.

Baker I don't think you need both of them.

Charlie Actually I didn't think of it that way before but I guess it would be a repetition more or less.

Baker And I would, as I said, I think we would benefit more by having actual First Aid type courses where,

Dog Uh-umm.

Baker I mean, I'm not saying that all teachers you know are supposed to be the doctor.

Charlie I don't think it's worth a three hour for a whole ten week period.

Baker No, but I think they should have, maybe have a one hour course something like where you get First Aid.

Dk Uh-uh.

Baker They have a course here, I know in Denver, Colorado it's a requirement for teachers. They have to know First Aid, and I think it's something good to know.

Dog I could see where it would be helpful.

Able Uh-uh.

Baker Well, anything can happen in the schools. I mean, students can hurt themselves in the halls and nobody else would be around.

Able Uh-uh.

Baker And I know where I was the nurse wasn't there all the time, and so it's going to be up to someone in the in the school to administer First Aid before they can.

Dog What about some of the other Education courses?

Baker Well, what all is there?

Charlie You know something, I'm taking Education 604 in Science Education and, uh, of course last quarter I took 535 which is the Teaching methods, and a little bit of History,

Dog Uh-uh.

Charlie but I can see no reason why they shouldn't be combined.

Baker What?

Charlie Because why, well, why couldn't they, uh, it should be something 604, Science Teaching Methods, well, why couldn't you learn the whole scope of the thing in one course, I mean, like the way it is now, 535 is Teaching Methods, and then 604 is Science Teaching Methods.

Dk Uh-uh.

Charlie Why couldn't they just put it all in one?

Baker Oh, I see 535 would have Science Teaching Methods for the science teachers.

Charlie And at the same time you could learn other, the whole scope of them.

Baker Ya, I think that's true too because I have to take two Math Methods courses, I took one for Junior High and Seniro High.

Dog Uh-umm.

Baker and most of the problems that I raised in there were problems that I wanted to raise in 33 and 34.

Dog Uh-umm.

Baker but we couldn't discuss them because it doesn't pertain to everybody.

Dog Uh-uh.

Baker It was specifics and I think they could have been combined, really, put them all together and then make the other 607, which is the Philosophy of Education,

Charlie

Baker and have 607, Philosophy of Education and History of Education, as I said in the History of Education I think we should learn more of the developments of our own schools rather than.

Dk What about

Charlie Why couldn't they combine the Philosophy in with the History?

Dk I don't know, I don't see why they can't because

Charlie This History develops, or Philosophy develops

Dog Ya, develops into History.

Baker You know why the History

Dog Promotes the thing about the reason why these philosophies developed, you know, bring it

in with the events of the times and everything.

Baker Because I think they even can be combined too.
I was thinking

Dog I've never had them, but it seemed to me that
they could have been combined.

Baker I think they could be combined too because I
don't think we really know enough about the
beginning of our own school system, how it
actually started, and why people thought the
way they did, why was Dewey dissatisfied with
the school system, why would he come up with
these pragmatic ideas, why, I still don't
know why really because the, well, we didn't
study anything about the History of our schools
leading up to the time that Dewey went on this,
this bit of his, and the philosophy, we
started well here is his philosophy already
and you didn't know why.

Dog Uh-uh.

Baker You still didn't know why he developed this
philosophy.

Able One thing we did in, I can never remember the
name, the number of this course, I think it
was 535, we did a term paper, uh, on curric-
ulums. Did you do that in yours? Well, this
was to, it took the place of mid-term, final,
etc., you know, and we did a lot of research
on, I forget how many different types of
curriculum, but that was really interesting
to me, and I got a lot out of it because you
could just take each curriculum apart and see
how, you know, what it was composed of and you
could also, it seemed like we also wrote our
own opinions of how well we thought this
would work, you know, according to our own
philosophies and how well we thought we could
teach under this curriculum and things like
that.

Baker Uh, going back to these courses, do you think
it would be better if all the people who were

going to teach these specific courses really decide what they're going to teach in these courses because I know when I took 533 and there was another section of 533, the people in the other section were doing something which you could almost say was totally different than what we were learning.

Charlie Because they're concentrating in a different area.

Able Ya.

Charlie Like now there's four of us here, and there's four of us with completely different backgrounds.

Baker That's right because you're teachers say, well, I'm more interested in this so I'm going to teach this,

Able Right, uh-umm.

Baker and someone else says, I like this so I'm going to teach this and then you have four graduates and they don't really have much of the same basic education.

Able I know just in my 534 class I think there were four or five math majors and just about everybody else was science and there were two of us that were Spanish majors or Foreign Language majors, and we just always felt like, you know, we were way out of it because Math and Science go together pretty well, but the languages I would much prefer being in a, uh, course where everybody was going to be a language teacher.

Dog Right, uh-umm.

Able I'd feel so much better about it because we just, they would spend a lot of time and I can't blame them, I mean, if most people in there were interested in math and science, but that, it seems like that was all they talked about most of all and we just sort of, you know, I learned a lot about math and science....

Dog In my 535 now they are trying to sort of unify the course more. There are five general categories that each instructor is supposed to cover, however that is as far as it goes. Although I think the instructor that I have is doing a very good job of it, it's really very interesting, and the the time goes by, you know it's a long, an hour and a half, it's a long time, but it, it goes and it's interesting.

Charlie An hour and a half?

Dog Well, you know, it's a two hour but we get out.

Charlie Ours was two hours.

Dog Oh, we get out about twenty till.

Baker You don't get a break, do you?

Dog No, we don't get a break, We didn't get a break.

Charlie We didn't get a break and she kept us two hours.

All laugh

Charlie She was suppose to let us out twenty minutes early and she never did.

Dog Oh, well.

Baker I have a feeling I know who you have.

All laugh

Dog But, uh, along the same lines have you ever had an instructor that has taught in the field that you, you know, are preparing to teach in that teaches one of these one of these education courses?

Baker When I took 533 the instructor was a Math, had been a Math teacher and I'm afraid that in

this particular area, she was fine when we could talk about anything Math and Science, but I felt sorry for the people that were in English and in your Social Studies because she had to admit that she wasn't that familiar with these areas.

Able Uh-umm.

Baker and consequently these students aren't getting the same type of education that we are,

Able Ya.

Baker and the same when I took 534 the instructor had been an English major and we had, uh,

Charlie You didn't get anything.

Baker we had critiques to write, but, you know, it was, uh, what do you call them to develop critical thinking in students,

Able Uh-uh.

Baker we had to write these how we could teach something, what we would teach to develop critical thinking,

Able Ya.

Baker and when it came to the math and science reports he said he was sorry that he didn't understand some of what we were talking about,

Able Uh-umm.

Baker and he said he felt at a loss because he felt that he couldn't grade them justly.

Able Uh-umm.

Baker because of this same reason, and well, we felt kind of bad because you couldn't explain to him

Dog Ya.

- Baker if he doesn't have, I mean he knows enough, but even so he says, well, well this is something I haven't heard about, uh, I'm lost.
- Dk Ya.
- Baker Well, we haven't gotten into, you know anything, I don't know if we go into specific courses, you know to do this where, I really don't know.
- Dk Well, your methods courses, your special methods.
- Dog I'm in English, but I'm taking 535 now, I mean, uh, our instructor hasn't, you know, gotten down, well, he's a math teacher however he hasn't, you know, centered it one that, well, he gives examples of things that happened in school or something that shows it's from math, but it's nothing that's boring or anything.
- pause
- Charlie Still there's the question of image in the College of Education.
- Dog Well, you know, I think, uh, if we could eliminate some of these courses and combine them like History and Philosophy and the, the methods, you know, for like science methods course I think, you know, combining some and eliminating all these little courses I think that would do a lot to it, I really do.
- Able I think the one that I really think deserves an image like that is the Home Economics College. I don't know why but I just think that that's where some of it is.
- Charlie
- Baker
- Charlie The College of Education, you know, is just an undergraduate college, you know, you always, well some of my buddies when I first started out as a Freshman, they started Engineering or something,

Able Uh-uh.

Charlie and then, you know it was harder and they say, Well, I can't make it I guess I'll have to go to Education.

Able Switch to Education, ya.

Charlie So I see half of my buddies over here now.

Baker Well, I think that the main factor is the fact that we're not satisfied with the courses. We complain about them other people get the idea, well, I, because I know I've said it many times, well, why should I work that hard in that course because

Dog It's an Education course.

Baker Ya, it's an Education course and you know you're going to bet a B anyway, I mean, I haven't, I have yet to come across some courses where they really dish out C's and D's in Education courses.

Able Uh-uh.

Baker They just don't, I don't think they really do.

Dog I think there should be more meat in the course itself, you know more to

Baker And when you go around saying things like that, and, and every students bound to because you talk about your courses all the time.

Dk Uh-uh.

Baker Other people say, well, they, you know, they say right away your Education courses are B courses.

APPENDIX C

The Seventy-five Linguistic Variables Used in the Study

The Seventy-five Linguistic Variables
Used in the Study

1. Total words spoken
2. Total utterances
3. Total pronouns
4. Total "I, me"
5. Total "we, us"
6. Total "it"
7. Total modifiers (adjectives and adverbs)
8. Total adjectives (including articles)
9. Total articles
10. Total adverbs
11. Total negatives
12. Total verbs
13. Total references to present (verb tense)
14. Total references to past (verb tense)
15. Total references to future (verb tense)
16. Total nouns
17. Tokens (500 words or tokens, except for six S's who spoke less than 500 words total)
18. Types from 500-word sample
19. "I, me" from 500-word sample
20. "We, us" from 500-word sample
21. "It" from 500-word sample
22. Articles from 500-word sample
23. Negatives from 500-word sample
24. Words spoken in 500-word sample that are not in Thorndike's list of the 500 most frequently used words
25. Total number of communication units
26. Total words in communication units
27. Total number of mazes
28. Total words in mazes
29. Total subordinate clauses in communication units
30. Total one-word responses
31. Total words spoken/total times spoke (ratio^a)
32. Pronouns/total words
33. "I, me"/total words
34. "We, us"/total words
35. "It"/total words
36. Total modifiers/total words
37. Adjectives/total words
38. Articles/total words
39. Adverbs/total words
40. Negatives/total words

41. Verbs/total words
42. Nouns/total words
43. Words in communication units/total words
44. Words in mazes/total words
45. One-word responses/total times spoke
46. "We, us"/"I, me"
47. "I, me"/pronouns
48. "We, us"/pronouns
49. "It"/pronouns
50. Nouns/pronouns
51. Adjectives/total modifiers
52. Articles/total modifiers
53. Adverbs/total modifiers
54. Articles/adjectives
55. Adverbs/adjectives
56. Nouns/verbs
57. Adjectives/verbs
58. Adverbs/verbs
59. Nouns/adjectives
60. Present/present + past + future
61. Past/present + past + future
62. Future/present + past + future
63. Type/token from 500-word sample
64. "I, me"/token from 500-word sample
65. "We, us"/token from 500-word sample
66. "We, us"/"I, me" from 500-word sample
67. "It"/token from 500-word sample
68. Articles/token from 500-word sample
69. Negatives/token from 500-word sample
70. Words not in Thorndike's list of 500 most-used words/token from 500-word sample
71. Words in communication units/total communication units
72. Words in mazes/total mazes
73. Total mazes/total communication units
74. Words in mazes/words in communication units
75. Subordinate clauses/total communication units

a/ = ratio

APPENDIX D

TABLE 8

Rotated Orthogonal Factor Loadings
for the Linguistic Variables

TABLE 8

Rotated Orthogonal Factor Loadings
for Linguistic Variables

Variables	Factor*										h ²
	I	II	III	IV	V	VI	VII	VIII	IX	X	
The 2 groups	255	-071	077	184	-033	-016	146	-074	141	194	196
Total counts:											
Words	966	140	-024	109	017	-054	131	-006	021	031	987
Utterances	691	-145	260	011	138	-096	-179	-031	290	060	715
Pronouns	972	006	-011	082	116	-002	119	-045	026	-036	984
"I, me"	798	-061	-079	-054	424	-100	137	-054	049	-180	895
"We, us"	657	104	577	116	003	-033	-034	072	-087	-100	814
"It"	880	-020	-032	109	048	299	076	-100	084	034	903
Modifiers	958	194	-014	102	-010	-056	116	051	013	035	987
Adjectives	924	282	-006	120	-055	-054	112	022	017	038	969
Articles	873	318	-010	123	-134	-029	149	053	016	200	963
Adverbs	972	048	-028	077	058	-049	106	115	005	-001	984
Negatives	945	-056	-015	003	080	-078	083	074	-140	039	942
Verbs	972	-002	-062	101	066	-010	067	-097	025	011	977
Present	939	037	-046	161	-032	-031	151	-010	002	093	946
Past	714	035	011	-195	365	-068	084	-080	129	-134	736
Future	854	-007	019	270	-158	070	010	-016	-079	053	842
Nouns	917	257	-037	095	-029	-122	141	012	038	104	964

TABLE 8--Continued

	Factor*										
Variables	I	II	III	IV	V	VI	VII	VIII	IX	X	h ²
500-word sample:											
Tokens	389	085	250	623	468	039	206	-132	080	113	908
Types	340	232	292	543	305	000	061	-096	327	025	763
"I, me"	123	-243	-048	128	852	053	081	-054	-005	-182	863
"We, us"	-024	020	825	-007	108	035	-134	-037	201	-063	758
"It"	045	-007	156	387	066	770	101	023	043	071	790
Articles	316	610	129	420	152	112	055	121	113	256	796
Negatives	380	-368	173	066	176	132	060	216	-413	106	594
Beyond Thorn-											
dike's 500	380	301	278	367	255	-039	152	-061	524	159	840
Communication											
units	960	028	113	076	050	-033	-016	003	133	056	966
Words in com.											
units	968	139	016	131	018	-044	007	-031	037	002	979
Mazes	888	129	008	077	-020	-056	286	081	-036	085	911
Words in mazes	833	126	-134	029	009	-073	470	066	-033	114	973
Subordinate cl.	962	044	-019	144	064	-019	030	-085	-000	-054	964
1-word response	195	-179	107	-066	057	238	-045	-007	695	-138	650
Words/utterance	-466	-397	241	-485	-156	-099	-284	195	210	082	871
Pronouns/words	-002	-643	258	-006	408	226	153	-048	060	-188	763
I, me/words	020	-244	014	-041	889	-159	025	139	005	-005	898
We, us/words	-021	-101	935	-060	103	017	-040	026	-052	-062	908
It/words	-113	-217	026	-337	-074	819	-014	-070	083	063	866
Modifiers/words	074	690	025	-131	-081	040	-126	414	018	-108	707

TABLE 8--Continued

Variables	Factor*										h ²
	I	II	III	IV	V	VI	VII	VIII	IX	X	
Adjectives/words	139	887	046	048	-122	068	007	-188	002	-163	891
Articles/words	189	745	-030	068	-122	173	-029	-063	-056	490	889
Adverbs/words	-023	-453	-017	-188	140	045	-188	791	010	-041	926
Negatives/words	-027	-496	-004	-631	-122	054	-150	295	-245	104	843
Verbs/words	-079	-762	-132	078	041	067	-246	-247	011	004	738
Nouns/words	112	787	030	-025	-065	-365	-023	-206	087	183	854
Words in com. units/words	-277	-002	130	-117	-023	-029	-927	049	-032	001	971
Words in mazes/words	272	003	-129	116	017	028	929	-049	021	004	971
1-word res./ utterances	-290	-172	-119	-399	-229	301	029	036	485	-217	714
we, us/I, me	081	067	801	408	-126	012	-043	050	022	148	863
I, me/pronouns	010	-062	-078	-066	864	-224	-056	172	021	081	851
We, us/pronouns	-007	000	934	-040	038	-032	-039	042	-067	-028	885
It/pronouns	-125	-018	-083	-373	-212	785	-093	-054	059	132	855
Noun/pronouns	033	763	-238	-028	-210	-317	-127	-081	027	215	855
Adjective/modifier	128	775	049	145	-109	074	082	-489	-010	-152	927
Article/modifier	188	616	-028	128	-110	197	022	-229	-059	600	899
Adverb/modifier	-092	-764	-055	-113	106	-034	-124	553	-004	017	942
Article/adjective	074	126	-128	041	-068	153	-070	111	-074	815	754
Adverb/adjective	111	-444	017	-246	321	135	-044	466	-010	024	612

TABLE 8--Continued

Variables	Factor*										h ²
	I	II	III	IV	V	VI	VII	VIII	IX	X	
Noun/verb	083	875	067	-061	-067	-293	099	003	050	109	896
Adjective/verb	076	943	033	-020	-113	-015	054	-069	003	-169	946
Adverb/verb	033	102	101	-196	048	-010	021	925	-007	-002	918
Noun/adjective	145	083	152	-126	396	-327	069	-141	087	455	570
% Present	186	-064	-084	813	-044	-111	188	052	-038	131	778
% Past	-143	102	083	-854	220	069	-127	055	075	-092	853
% Future	084	-169	-037	710	-378	-071	-047	-030	-005	-081	698
500-word sample											
Type/token	-272	055	-061	-671	-523	061	-195	051	104	-176	890
I, me/token	051	279	-057	-003	888	-021	-058	050	-035	-027	881
We, us/token	-091	-024	795	-351	-060	119	-127	-028	067	-077	810
We, us/I, me	-030	121	862	-087	-199	037	-093	023	089	054	827
It/token	-145	-049	080	-138	-178	840	019	105	-059	012	801
Article/token	134	784	-004	091	010	181	-088	182	069	227	770
Negative/token	049	-441	049	-526	-201	156	-069	281	-410	083	799
Beyond Thorn-											
dike's 500/											
token	141	313	103	-028	-082	-126	-006	084	654	113	599

TABLE 8--Continued

Variables	Factor*										h ²
	I	II	III	IV	V	VI	VII	VIII	IX	X	
Average words in com. unit	-291	-368	324	-653	-148	076	-042	204	197	098	872
Average words in maze	-225	053	-053	-441	046	166	-580	160	-173	205	714
Mazes/com. units	310	205	-151	193	076	059	602	-019	-216	-002	638
Words in mazes/ words in com.unit	262	014	-146	093	033	012	928	-018	000	018	961
Subordinate cl./ com. unit	142	142	-356	573	024	-036	092	-257	-267	-251	706
% of h ²	24.56	13.85	7.70	8.89	6.99	5.01	5.81	4.38	3.33	3.23	

* * Decimals omitted

a / = ratio

Note: Loadings of $\pm .40$ or higher were the ones used to interpret the factors.

APPENDIX E

Rules for Segmentation of Oral Language
Utterances into Communication Units and Mazes
(adapted from Loban, 1963, 1964)

Rules for the Segmentation of Oral Language
Utterances into Communication Units and Mazes

A communication unit is defined as a grammatical independent clause between two silences (Loban, 1964). It is a stream of words which cannot be divided further without the loss of essential meaning. It can be a phrase or a word when these need only the repetition of material from the context to become an independent clause. As an example, the question "Are you going home?" is a communication unit. Answers to this question such as "yes" or "no" or "after a time" are also communication units since they need only the repetition of contextual material to be independent clauses. All words emitted which are not parts of communication units are mazes.

Specific rules for the segmentation of the utterances (the stream of vocalizations emitted by one person until he stops and another begins) into communication units and mazes in the present research are those established by Loban (1963, 1964) as follows:

1. An utterance unit contains at least as many communication units as it contains independent clauses.
2. No communication unit contains more than one independent clause. A communication unit can be a complex sentence, but a compound sentence will be two or more communication units.

3. Words or phrases which can be expanded into independent clauses simply by the repetition of words from the context are communication units.

4. "Yes" and "no" are communication units when they can be replaced by an independent clause. When they cannot be so replaced but serve to introduce an independent clause, they are part of that clause and not a separate communication unit.

5. Every utterance unit contains at least one communication unit. If an utterance unit is not an independent clause but is preceded and followed by terminal silences, it is arbitrarily defined as a communication unit.

6. All words not included in communication units are mazes. When mazes are removed from communication units, "the remaining material always constitutes a straightforward, acceptable communication unit (Loban, 1964, p. 25)."

7. A communication unit may be preceded, followed, or separated by mazes or other communication units.

REFERENCES

REFERENCES

- Auld, F., & Murray, E. J. Content-analysis studies of psychotherapy. Psychological Bulletin, 1955, 52, 377-395.
- Bayley, N. Mental growth during the first three years. Genetic Psychology Monographs, 1933, 14, No. 1.
- Berg, I. A. Word choice in the interview and personal adjustment. Journal of Counseling Psychology, 1958, 5, 130-135.
- Boder, D. P. The adjective-verb quotient: A contribution to the psychology of language. Psychological Record, 1940, 3, 310-343.
- Bormuth, J. R. Relationships between selected language variables and comprehension ability and difficulty. Cooperative Research Project Number 2082. Los Angeles; University of California, 1964.
- Braaten, L. J. The movement from non-self to self in client-centered psychotherapy. Journal of Counseling Psychology, 1961, 8, 20-24.
- Brams, J. M. Counselor characteristics and effective communication in counseling. Journal of Counseling Psychology, 1961, 8, 25-30.
- Brown, R. Words and things. New York: Free Press, 1958.
- Busemann, A. Die Sprache der Jugend als Ausdruck der Entwicklungsrhythmik. Jena; Fischer, 1925.
- Cahoon, D. D. A comparison of the effectiveness of verbal reinforcement applied in group and individual interviews. Journal of Counseling Psychology, 1965, 12, 121-126.

- Campbell, R. E. Counselor personality and background and his interview subrole behavior. Journal of Counseling Psychology, 1962, 9, 329-334.
- Carnes, R. F., & Robinson, F. P. The role of client talk in the counseling interview. Educational and Psychological Measurement, 1948, 8, 635-644.
- Carroll, J. B. Diversity of vocabulary and the harmonic series law of word-frequency distribution. Psychological Record, 1938, 2, 377-386.
- Carroll, J. B. Determining and numerating adjectives in children's speech. Child Development, 1939, 10, 215-229.
- Carroll, J. B. Language and thought. Englewood Cliffs, New Jersey: Prentice-Hall, 1964.
- Cartwright, D. S. Annotated bibliography of research and theory construction in client-centered therapy. Journal of Counseling Psychology, 1957, 4, 82-100.
- Cattell, P. The measurement of intelligence of infants and young children. New York: The Psychological Corporation, 1940.
- Chomsky, N. Syntactic structures. 's-Gravenhage: Mouton & Co., 1957.
- Chotlos, J. W. Studies in language behavior: IV. A statistical and comparative analysis of individual written language samples. Psychological Monographs, 1944, 56, 75-111.
- Cole, C. W. Effects of verbal stimuli in a counseling analogue. Journal of Counseling Psychology, 1965, 12, 408-413.
- Cook, T. E. The influence of client-counselor value similarity on change in meaning during brief counseling. Journal of Counseling Psychology, 1966, 13, 77-81.
- Danskin, D. G. Roles played by counselors in their interviews. Journal of Counseling Psychology, 1955, 2, 22-27.

- Davis, E. A. The location of the subordinate clause in oral and written language. Child Development, 1941, 12, 333-338.
- De Cecco, J. P. (Ed.) The psychology of language, thought, and instruction. New York: Holt, Rinehart & Winston, 1967.
- Dipboye, W. J. Analysis of counselor style by discussion unit. Journal of Counseling Psychology, 1954, 1, 21-26.
- Dixon, W. J. (Ed.) Biomedical computer programs. (Rev. ed.) Los Angeles: University of California, 1965.
- Dollard, J. & Mowrer, O. H. A method of measuring tension in written documents. Journal of Abnormal and Social Psychology, 1947, 42, 3-32.
- Ebbinghaus, H. Memory: A Contribution to experimental psychology. Translated by H. A. Ruger & C. E. Bussenius. New York: Teachers College, Columbia University, 1913.
- Elton, C. F. The effect of client and topic on counselor behavior. Unpublished doctoral dissertation, Ohio State University, 1951.
- English, H. B., & English, A. C. A comprehensive dictionary of psychological and psychoanalytical terms. New York: David McKay, 1958.
- Fairbanks, H. The quantitative differentiation of samples of spoken language. Psychological Monographs, 1944, 56, 19-38.
- Ford, D. H. & Urban, H. B. Systems of psychotherapy. New York: Wiley, 1963.
- Foreman, M. E. Some empirical correlates of positive mental health. (Doctoral dissertation, The Ohio State University) Ann Arbor, Mich.: University Microfilms, 1964. No. 64-5415.
- Foreman, M. E. Some empirical correlates of psychological health. Journal of Counseling Psychology, 1966, 13, 3-11.

- Freud, S. A general introduction to psychoanalysis. New York: H. Liveright, 1920.
- Freud, S. The basic writings of Sigmund Freud. New York: Modern Library, 1938.
- Fries, C. C. The structure of English. New York: Harcourt, Brace, 1952.
- Fruchter, B. Introduction to factor analysis. New York: Van Nostrand, 1954.
- Gardner, E. F. & Thompson, G. G. Social relations and morale in small groups. New York: Appleton-Century Crofts, 1956.
- Gesell, A. The mental growth of the preschool child: A psychological outline of normal development from birth to the sixth year, including a system of developmental diagnosis. New York: Macmillan, 1925.
- Gesell, A. Infancy and human growth. New York: Macmillan, 1928.
- Goldman, L. Counseling: Content and process. Personnel and Guidance Journal, 1954, 33, 82-85.
- Goodenough, F. L. The use of pronouns by young children: A note on the development of self-awareness. Journal of Genetic Psychology, 1938, 52, 333-346.
- Gough, H. G. Predicting success in graduate training: A progress report. Berkeley: The Institute of Personality Assessment and Research, University of California, 1950.
- Greenberg, J. H. The word as a linguistic unit. In C. E. Osgood, & T. A. Sebeok (Eds.), Psycholinguistics: A survey of theory and research problems. Bloomington: Indiana University Press, 1965. Pp. 66-71.
- Greenspoon, J. The reinforcing effect of two spoken sounds on the frequency of two responses. American Journal of Psychology, 1955, 68, 409-416.

- Grummon, D. L. An investigation into the use of grammatical and psycho-grammatical categories of language for the study of personality and psychotherapy. Unpublished doctoral dissertation, University of Chicago, 1950. Cited by Mowrer, O. H. Changes in verbal behavior during psychotherapy. In O. H. Mowrer (Ed.), Psychotherapy: Theory and research. New York: Ronald. 1953, Pp. 463-545.
- Hahn, E. Analyses of the content and form of the speech of first grade children. Quarterly Journal of Speech, 1948, 34, 361-366.
- Heilbrun, A. B. Relationships between the Adjective Check List, Personal Preference Schedule, and desirability factors under varying defensiveness conditions. Journal of Clinical Psychology, 1958, 14, 283-287.
- Hoffman, A. E. An analysis of counselor sub-roles. Journal of Counseling Psychology, 1959, 6, 61-67.
- Jakobovits, L. A., & Miron, M. S. (Eds.) Readings in the psychology of language. Englewood Cliffs, N. J.: Prentice-Hall, 1967.
- Johnson, W. Studies in language behavior: I. A program of research. Psychological Monographs, 1944, 56.
- Jourard, S. M. Personal adjustment: An approach through the study of healthy personality. (2nd ed.) New York: Macmillan, 1963.
- Krasner, L. Studies of the conditioning of verbal behavior. Psychological Bulletin, 1958, 15, 148-171.
- Krasner, L. Reinforcement, verbal behavior and psychotherapy. American Journal of Orthopsychiatry, 1963, 33, 601-613.
- Krumboltz, J. D., & Thoresen, C. E. The effect of behavioral counseling in group and individual settings on information-seeking behavior. Journal of Counseling Psychology, 1964, 11, 324-333.

- Lanfield, A. W., & Nawas, M. M. Psychotherapeutic improvement as a function of communication and adoption of therapist's values. Journal of Counseling Psychology, 1964, 11, 336-341.
- Lenneberg, E. H. (Ed.) New directions in the study of language. Cambridge, Mass.: The M. I. T. Press, 1964.
- Levy, L. Psychological interpretation. New York: Holt, Rinehart & Winston, 1963.
- Lewis, M. M. Infant speech: A study of the beginnings of language. New York: Harcourt, Brace, 1936.
- Lewis, M. M. Language, thought, and personality in infancy and childhood. New York: Basic Books, 1963.
- Loban, W. The language of elementary school children: A study of the use and control of language, effectiveness in communication, and the relationships among speaking, reading, writing, and listening. Research Monograph No. 1. Champaign, Ill.: National Council of Teachers of English, 1963.
- Loban, W. Language ability: Grades seven, eight, and nine. Cooperative Research Project No. 1131. Berkeley: University of California, 1964.
- Mann, M. B. The quantitative differentiation of samples of written language. Psychological Monographs, 1944, 56, 41-74.
- Mardsen, G. Content analysis studies of therapeutic interviews: 1954-1964. Psychological Bulletin, 1965, 63, 298-321.
- Maslow, A. H. Motivation and personality. New York: Harper, 1954.
- Matarazzo, J. D., Weitman, M., Saslow, G., & Wiens, A. N. Interviewer influence on durations of interviewee speech. Journal of Verbal Learning and Verbal Behavior, 1963, 1, 451-458.
- McCarthy, D. The vocalizations of infants. Psychological Bulletin, 1929, 26, 625-651.

- McCarthy, D. The language development of the preschool child. Minneapolis: University of Minnesota Press, 1930.
- McCarthy, D. Language development in children. In L. Carmichael (Ed.). Manual of child psychology. (2nd ed.) New York: Wiley, 1954.
- McCarthy, D. Language development. Monographs of the Society for Research in Child Development, 1960, 25, 5-14.
- Merrill, R. M., & Heathers, L. B. The use of an adjective checklist as a measure of adjustment. Journal of Counseling Psychology, 1954, 1, 137-143.
- Mowrer, O. H. Changes in verbal behavior during psychotherapy. In O. H. Mowrer (Ed.). Psychotherapy theory and research. New York: Ronald Press, 1953.
- Muthard, J. E. The relative effectiveness of larger units used in interview analysis. Journal of Consulting Psychology, 1953, 18, 184-188.
- Nawas, M. M., & Landfield, A. W. Improvement in psychotherapy and adoption of the therapist's meaning system. Psychological Reports, 1963, 13, 97-98.
- Nice, M. M. Concerning all-day conversations. Pedagogical Seminary, 1920, 27, 166-177.
- Nice, M. M. Length of sentences as a criterion of a child's progress in speech. Journal of Educational Psychology, 1925, 16, 370-379.
- Osgood, C. E., & Sebeck, T. A. (Eds.) Psycholinguistics: A survey of theory and research problems. Bloomington: Indiana University Press, 1965.
- Osgood, C. E., Suci, G. J., & Tannebaum, P. H. The measurement of meaning. Urbana, Ill.: University of Illinois Press, 1957.
- Page, H. A. An assessment of the predictive value of certain language measures in psychotherapeutic counseling. In W. U. Snyder (Ed.), Group report of a program of research in psychotherapy. University Park, Pa.: Pennsylvania State University, 1953, Pp. 88-93.

- Persons, R. W., & Pepinsky, H. B. Convergence in psychotherapy with delinquent boys, Journal of Counseling Psychology, 1966, 13, 329-334.
- Porter, E. H., Jr. The development and evaluation of a measure of counseling interview procedures. Educational and Psychological Measurement, 1943, 3, 105-126, 215-238.
- Raimy, V. C. Self reference in counseling interviews. Journal of Consulting Psychology, 1948, 12, 153-163.
- Robinson, F. P. The unit in interview analysis. Educational and Psychological Measurement. 1949, 2, 709-716.
- Robinson, F. P. Principles and procedures in student counseling. New York: Harpers, 1950.
- Robinson, F. P. The dynamics of communication in counseling. Journal of Counseling Psychology, 1955, 2, 163-169.
- Rogers, C. R. Counseling and psychotherapy. New York: Houghton Mifflin, 1942.
- Rogers, C. R. On becoming a person. Boston: Houghton Mifflin, 1961.
- Rorschach, H. Psychodiagnostics. Translated by P. Lemkau & B. Kronenberg. New York: Grune & Stratton, 1964.
- Rosenthal, D. Changes in some moral values following psychotherapy. Journal of Consulting Psychology, 1955, 19, 431-436.
- Rundquist, R. M. A comparison of the analysis of counseling interviews by topical discussion units and by the total case. (Doctoral dissertation, University of Missouri). Ann Arbor, Mich.: University Microfilms, 1952. No. 4283.
- Ryan, T. A., & Krumboltz, J. D. Effect of planned reinforcement counseling on client decision-making behavior. Journal of Counseling Psychology, 1964, 11, 315-323.

- Saporta, S. (Ed.) Psycholinguistics: A book of readings. New York: Holt, Rinehart & Winston, 1961.
- Seashore, R. H., & Eckerson, L. D. The measurement of individual differences in general English vocabularies. Journal of Educational Psychology, 1940, 31, 14-38.
- Seeman, J. A study of preliminary interview methods in vocational counseling. Journal of Consulting Psychology, 1948, 12, 321-330.
- Shirley, M. M. The first two years: A study of twenty-five babies: Vol. II. Intellectual development. Minneapolis: University of Minnesota Press, 1933.
- Skinner, B. F. The distribution of associated words. Psychological Record, 1937, 1, 71-76.
- Snyder, W. U. An investigation of the nature of non-directive psychotherapy. Journal of General Psychology, 1945, 33, 193-223.
- Snyder, W. U. (Ed.) Group report of a program of research in psychotherapy. University Park, Pa.: Pennsylvania State University, 1953.
- Spache, G. D. Contributions of allied fields to the teaching of reading. In H. M. Robinson (Ed.), Innovation and change in reading instruction. Sixty-seventh Yearbook of the National Society for the Study of Education. Part II. Chicago: University of Chicago Press, 1968, Pp. 237-290.
- Strickland, R. G. The language of elementary school children: Its relationship to the language of reading textbooks and the quality of reading of selected children. Bulletin of the School of Education. Indiana University, 38: 4, 1962. Bloomington: Indiana University, 1962.
- Templin, M. C. Certain language skills in children: Their development and interrelationships. Minneapolis: University of Minnesota Press, 1957.
- Tindall, R. H. Relationships among indices of adjustment status. Educational and Psychological Measurement, 1955, 15, 152-162.

- Thompson, A. Conditioning of work oriented and work aversive statements of neuropsychiatric patients. Journal of Counseling Psychology, 1965, 12, 115-120.
- Thorndike, E. L. Studies in the psychology of language. Archives of Psychology, 1938, No. 231.
- Thorndike, E. L., & Lorge, I. The teacher's word book of 30,000 words. New York: Teachers College, Columbia University, 1944.
- Todd, W. B., & Ewing, T. N. Changes in self-reference during counseling. Journal of Counseling Psychology, 1961, 8, 112-115.
- Tyler, L. E. The work of the counselor. New York: Appleton-Century Crofts, 1953.
- Walker, H. M., & Lev, J. Statistical inference. New York: Holt, Rinehart & Winston, 1953.
- Watts, A. F. The language and mental development of children. London: George G. Harrap, 1944.
- Weitz, H. Semantics in diagnosis. Journal of Counseling Psychology, 1954, 1, 70-73.
- Winer, B. J. Statistical principles in experimental design. New York: McGraw-Hill, 1962.
- Young, F. M. An analysis of certain variables in a developmental study of language. Genetic Psychology Monographs, 1941, 23, 3-141.
- Zipf, G. K. The psycho-biology of language. Boston: Houghton Mifflin, 1935.