A CONCURRENT VALIDITY STUDY OF THE VOCATIONAL VALUES INVENTORY

Thesis for the Degree of Ph. D. MICHIGAN STATE UNIVERSITY Jacob Stein 1960



This is to certify that the

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A CONCURRENT VALIDITY STUDY OF THE VOCATIONAL VALUES INVENTORY

by

Jacob Stein

AN ABSTRACT

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

DOCTOR OF PHILOSOPHY

Department of Administrative and Educational Services Guidance and Counseling

1960 Approved:_

JACOB STEIN

ABSTRACT

Three null hypotheses were advanced relative to the purpose of the study. They were:

1. There are no significant differences in the mean subtest scores of the Vocational Values Inventory among students planning to enter different occupations.

2. There are no significant differences in the mean subtest scores of the Vocational Values Inventory among students coming from different socio-economic levels.

3. There are no significant differences in the mean subtest scores of the Vocational Values Inventory among male and female students.

The subjects selected for this investigation were 436 students, 175 women and 261 men. They were enrolled in the Basic College at Michigan State University during the Spring Term of 1959.

The instruments used in the study were the Vocational Values Inventory and a specially designed questionnaire. The Vocational Values Inventory consists of seven subtests of 12 paired items each, or a total of 84 items. The subtests are as follows: Altruism, Control, Job-Freedom, Money, Prestige, Security, and Self-Realization.

Reliability for the instrument was tested in several ways. Using Hoyt's method of analysis of variance, reliability coefficients were obtained from the subtests that ranged from .69 to .91. The mean of the reliability coefficients was .82.

The technique of item analysis using Adkin's short form was used to identify items which might not contribute to the total score of the subtests. Among the men, 6 items were found which did not measure the property for which it was designed, while among the women, 14 such items were found.

The differences among the various groups, occupational, socio-economic, and male and female, were tested by the analysis of variance method. Duncan's technique was used to determine which means actually differed.

The Vocational Values Inventory was found to be reliable insofar as the limitations of this study is concerned. Similar results should be obtained in a retest of the same population.

Among the men, Altruism, Money, and Control significantly differentiated the stated occupational selections, and among the women, Altruism, Prestige, and Control performed the same function.

Ginzberg's theory of "Crystallization" appears to hold up for the men, but not for the women. The realitybased occupational selections of the men are fairly congruent, but they are not congruent for the women.

Except for the subtest of Money for the upper class men and Prestige for the upper class women, students from different socio-economic levels tend to achieve similar scores on the Vocational Values Inventory.

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ABSTRACT

It appears that there is a relationship between values and vocational choice. This is not true for all the values of the Vocational Values Inventory, but only for Altruism, Money, Control, and Prestige. Men and women have different values as measured by the Vocational Values Inventory and students coming from different socio-economic levels tend to have similar values or scores on the subtests of the Vocational Values Inventory. Thus, reinforced by the findings of congruence in fantasy and reality-based vocational selections for the men and none for the women, the above findings of value differences for men and women seem to indicate a need for separate tests for men and women.

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A THESIS

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

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Jacob Stein

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CHAPTER I

THE NATURE AND IMPORTANCE OF THE PROBLEM

Introduction

The entry into a vocational field of endeavor marks an important milestone in the ontogenetic development of the individual. All the years of living, all experiences, both psychological and physiological, are coalesced into the process of vocational decision-making. Truly, it is a most anxiety-provoking situation and rightly so for many people. It is a rare person who has not thought about the irreversibility of some vocational decisions, especially decisions concerning the highly skilled technical and professional vocations. These require many years of preparation, not just at the undergraduate level, but also on the graduate level. The situation is often the same for non-college trained personnel, since technical and many skilled trades often require the same careful long-range planning. It would be a serious waste of money and time to train for some specific profession and then, upon vocational entry, find one is not suited by virtue of dissimilar interests, attitudes, and values. By that time, the years have gone by and retraining is more fearful than accepting the vocation with its concomitant psychological frustrations. Sometimes the psychological manifestations of such decisions

el P Ì. ١ prove deleterious in the long run. However, at the time of making these decisions, the vocational future with its complications is not always envisioned in its proper perspective.

The view that for every man there is a vocation for which he is best suited has often been suggested as the basis for future investigations. However, this observation does not in fact approach the limitations of reality. The concept of vocational selection is dynamic and not specifically fixed or influenced by any one particular factor. As the individual grows, so grows his concepts of life around him. Ideas are superseded by new ones and interests, attitudes, sentiments, values, and motives are modified and changed by the pressures of individual growth and those of society. These shifting changing interests, hobbies, economic upheavals, and other unforeseen influences forestall specific prediction of vocational choice.

Since these influences make prediction a most difficult task, knowing some constant factors common to personality theory might contribute towards a better understanding of what is involved in vocational choice and consequent prediction.

A most important base or constant in the investigation of vocational choice is the values that have helped define, relate, and select the particular vocation. These values are the sources of attitude sets from which societal behavior patterns have evolved. They are the bases for

experiential living. They help pave the way for solutions to every-day problems.

These values are inherently aspects of personality which, from a global point of view, are complex and often unknown to conscious awareness. They are integral to personality and have to be studied in relation to the entire man. The study of these values involves more than an investigation of a circumscribed area. Values are integral to the world of facts (86) and are everywhere and anywhere. Anything that can be seen, felt, heard, or sensed is valued. They can be and are wherever man can see, hear, relate, compare, and judge. They arise out of the life of instincts, interests, sentiments, and motives. Consequently, they arise because of the very existence of man.

Background of the Study

Individual differences are focal to the study of personality with each organism expressing different perceptual anchorage points and different patterns of behavior. These different patterns of behavior pose a problem of trying to predict and generalize behavior from a specific theory. However, some personality factors appear to be more basic than others. These factors, perceptual anchorage points in expression, appear to be derived largely from the individual's values and value systems; the major values as drives provide anchorage for all goal-seeking behavior. It is therefore expected that dominant values and the value systems

surrounding them will be reflected in some manner in the behavior patterns and subsequent decision-making of individuals.

Although this is not an original point of view and philosophers throughout the years have discussed and postulated theories concerning it, only a few scientists in the area of personality research have tried to measure individual values and value systems.

In 1928, Spranger (130) suggested six theoretical constructs in an attempt to formulate a theory of personality. He called them the "Six Types of Man," but inherently they could not be distinguished from attitudes, sentiments, interests, and needs. Briefly, the "Six Types of Man" are: Theoretical, Economic, Aesthetic, Social, Political, and Religious. The Theoretical Man is interested in the truth. with a rational and empirical understanding of knowledge as his primary objective. The Economic Man is almost a prototype of the Pragmatist. He is interested in the world of facts and practicality. Wealth and its ramifications and implications are his main objective in life. The Aesthetic Man is interested in beauty, individualism, self-sufficiency, and self-actualization. The Social Type values people, whether singly or in groups, and regards love, kindness, sympathy, and understanding as the highest types of human functioning. The Political Man conceives power as the only real objective in his life. He wants to be the leader and

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manipulate people. Personal power, influence, and renown are all he cares for. The Religious Man wants to relate himself to God and the Cosmos in a unified totality of being as "One whose mental structure is permanently directed to the creation of the highest and absolutely satisfying value experience." These personality traits were merely suggested by Spranger and he did not attempt to measure them objectively.

Allport and Vernon (4) in 1931 felt that values are means by which the personalities of men are best known. Agreeing with Spranger, they attempted to test his postulates in an objective manner. They formulated an inventory consisting of 120 questions, categorized into six areas representing Spranger's "Six Types of Man."

Applying the test to many vocational groups, it is apparent that they can be differentiated on the basis of values inherent within the vocations as measured by the "Allport-Vernon Study of Values." (4)

Generally, the relationship between values and intelligence is still somewhat vague, especially since the concept of intelligence is not just specific, but is a global functioning. More importantly, from the atomistic point of view, relationships between values and specific areas of personality have been found positive and meaningful. Pintner (111) found that there were positive relationships between social values and intelligence. Similarly, Shaeffer (121), Thurstone (139), Rothney (139), and others have found

a relationship between values and a person's intelligence, aptitude, and achievement.

Although the Allport-Vernon Study of Values appears to be the most popular among researchers, other researchers in the field have formulated tests which purportedly measure values. Lurie (98) constructed a test also based on Spranger's six values. The content is similar to the Allport-Vernon, but he factors out four instead of six values as basic to personality structure. A basic fault which is evident in the test is the fact that there is a definite lack of consistency in the choice of items and a poor scoring system. Definitions of terms are ambiguous, and often different value questions are basically similar in meaning.

A similar test was constructed by Van Dusen, Wimberly, and Mosier (154). They called their test the "Standards Inventory," and the items were basically those of Lurie's. Although the test was not reliable for individuals, it was sufficiently reliable to use with groups. They concluded that Lurie's system was not consistent and the economic and political items should be scored separately, similar to the scoring of the same items on the Allport-Vernon.

The Interest-Values Inventory constructed by Maller and Glaser (100) is based on the Allport-Vernon Study of Values. However, in certain facets of it, there are significant differences. It measures four of the six Allport-Vernon items, theoretic, aesthetic, social, and economic. Although the political and religious are omitted,

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the items related to it are included among the four areas listed. The social value in the Maller-Glaser test seems to represent an interest in social welfare, while in the Allport-Vernon test, it also means interest in individual relationships.

By the use of 49 traits incorporated into a test called "An Index of Adjustment and Values," Bills (23) attempted to measure the values of a person, his acceptance of self, and the discrepancy which exists between his concept of self and his concept of the ideal self. The total of the discrepancies between the self concept and the concept of the ideal self would be a measure of adjustment.

The "Differential Values Inventory" constructed by Prince (113) attempts to delineate values in a more specific fashion. It is divided into 64 items, each of which can be classified as an emergent value or traditional value. The total group of items is divided into eight subscores, four combined into so-called Traditional Values and four combined into so-called Emergent Values. The Traditional Values are: (1) Puritan morality, (2) Individualism, (3) Work success ethic, (4) Future time orientation. The Emergent Values are: (1) Sociability, (2) Conformity, (3) Relativism, (4) Present time orientation.

Although these are some of the investigators who have developed instruments to quantify and measure relationships involving values, there have been many other workers in the field who have attacked the problem in a different

fashion. Many of them did not use value tests per se, but studied the area of values in an intensive fashion and over a period of time in which the developmental aspects of personality could be accurately observed in relation to values and value systems.

Katz (8) in 1931 investigated attitudes of students at Syracuse through the use of a questionnaire administered to all students at the university. He justified his questionnaire on the basis of meeting three general criteria: the kind of information sought, the wording of the questions, and the interpretation of the results. The questions were clear and specific and whether the individual answered the questions truthfully or not is sometimes of no more significance than when one responds to a so-called non-structured test in a manner indicating constriction as a result of extreme defensiveness. In the matter of interpretation the authors felt there was no one particular interpretation that could be used dogmatically for generalization. Therefore, all facets of personality and its concomitant influences must be involved in the interpretation.

This study of Syracuse students indicated that definiteness of vocational choice was a major factor in the students' orientation and adjustment to college life. It greatly influenced values and value systems of all students. There was a significant relationship between definiteness of vocational choice and honesty, academic standing, and the time the student's vocational interests stabilized. They

also found that political, social, economic, and religious questions were important in professionally-oriented vocational counseling.

Jacob (79) used a similar approach in studying the influence of college life and college courses on the development of social values in the student's value system. He found that students in all areas have homogeneous values despite differences in their religious, racial, social, ethnic, and economic backgrounds. Material gratification appears to be primary in their needs and value systems. They want concrete comforts and the things that money will buy, and they expect to get these through the course of study they are pursuing. Although they value honesty and integrity of character on the whole, they do not vehemently denounce those who break this code of conduct. They seem to compartmentalize religion, accepting the guidance of the social code rather than the religious code.

The basic values of students in different curricular areas are very similar at the end of four years of college. Fewer seniors than freshmen tend to glamorize and accept beliefs deviant from the commonly accepted norm. This is not to suggest that college specifically influenced basic values, but that conflicting values might possibly have been resolved over a period of four years.

The authors felt that many colleges appeared to have little affect on the basic value systems of the students. Some colleges, however, mostly those of small enrollment,

appear to greatly influence and modify students' values. These values are internalized and greatly influence the student in his post-graduate functioning.

Although teachers in general do not influence values to any great extent, certain individuals among them do influence and help modify students' value systems. These are the teachers who have openly expressed values to which they seem to be firmly committed.

Rosenberg (118) found that students select occupations in line with their values and most enter their chosen field willingly. He differed with the conclusions of the Jacob study concerning vocational decision-making. He found that most people tend to choose an occupation in line with values of self-realization rather than money as the primary reward. He also found a tendency of the student to change his current values in line with those appropriate for his chosen occupation.

The importance of values in occupational choice is underscored in Ginzberg's (63) study to develop a theory of occupational choice. He selected four variables to study: (1) Reality factors or the social and economic forces which determine the environment of an individual. (2) The educational process, as this is basic to most of the choices one makes in vocational decision-making. (3) The emotional determinants, as most people are under the influence of emotional needs and desires. (4) Values, because there are many reasons for vocational choosing, and values and value judgments are inherent in all of them.

Values are integral to vocational choice and often vocational choice influences and modifies values. This concept, Super (141) feels, emphasizes the fact that the individual either adapts to a vocation or leaves it for one more suited to him on the basis of needs and satisfactions. The influence of the vocation on the value system of the individual also involves adequate role playing. When the needs and values of the individual are related to the role which the vocation assumes as satisfactory for proper functioning in that role, then the individual has a greater chance to be vocationally adjusted.

To study vocational choice and values, Super utilized an instrument called "The Work Values Inventory." (143) the inventory used alone would not achieve the depth necessary for proper evaluation, so he proposed that it be used in conjunction with content-analyzed interviews. He also broke values down into three categories: (1) The Work-Itself, or the nature of the work done. (2) The Concomitants, supervisors and associates and other situational characteristics. (3) The Outcomes of Work, the rewards such as prestige and money. These values were further categorized and dichotomized into Extrinsic and Intrinsic groups. The Intrinsic Values being designated as values inherent in the work itself, and the Extrinsic Values as those which are the rewards.

The Purpose and Importance of the Study

That men work just to provide for their basic physical needs is no longer the primary consideration given for occupational choice. If this were so, then after satisfaction or satiation occurred, people would stop and retire from work. Progress, which is the lifeline of society, would have stopped long ago and civilization as we know it today might possibly never have existed.

Work is important to the individual and the occupation he chooses, of necessity, has to be satisfactory to him in many ways. The training and subsequent functioning of the individual in a vocational situation will occupy him most of the day until he is ready to retire. Thus, his work will have to provide him not only with the means of physical sustenance, but also with psychological stimulation and satisfaction. Without these, other rewards are secondary and soon pall.

It is quite evident that vocational choice is a process rather than an event and to be understood more clearly, the developmental aspects of man's personality have to be taken fully into consideration. Factors numerous in nature comprise the concept of personality. Interests, attitudes, sets, sentiments, and values are all interrelated and are integral to personality development. In this frame of reference there is an implication that research in this area should be more Gestalt in nature. However, in light of the means the scientist has at his disposal today, this

is often impossible to accomplish and the atomistic or mechanistic approach sometimes has to suffice.

Out of the multitude of characteristics that are integral to vocational choice, values have been selected for investigation because of the dearth of studies in this area. It is true that the Allport-Vernon Study of Values has been used by numerous investigators, but the main purpose of the authors was primarily to test Spranger's hypothesis concerning the so-called "Types of Man," rather than its implications in a practical and applied fashion.

The following are the possibilities inherent in the practical applicability of the results of this study:

1. The development of a measure of students' values and their influence on vocational choice which will have demonstrated reliability and validity.

2. The determination to what extent certain values are related to students' vocational choices.

3. The determination of the differences, if any, between the vocational values of students coming from high socio-economic backgrounds and those from low socio-economic backgrounds.

4. The determination of the relationship between the values inherent in the present professional fields or schools that the students want to go into, or are in at the present time, and their scores on a values inventory and questionnaire.

5. The investigation of students' values and their relationship to the work of the counselor so that he can

interpret occupational areas in a more meaningful fashion to the student.

6. Helping students understand their basic value frame of reference concerning their occupational goals in order to more realistically and adequately select their future occupation.

The Problem

This study is generally concerned with the investigation of the values which are related to different vocational and curricular areas. The major instrument involved in the study, The Vocational Values Inventory, ¹ is designed to elicit the various stated values that people feel are the basis for their preference or entry into a particular vocational area. Since the test has not been validated on this particular group, its validation through the use of a questionnaire² and other related material will also be considered. Specifically, this investigation was designed to attain the following objectives:

1. To determine whether students planning to enter different occupations tend to vary in the values measured by the Vocational Values Inventory.

2. To determine whether students from different socio-economic levels tend to have different values as measured by the Vocational Values Inventory.

¹See Appendix A.

²See Appendix B.

3. To determine whether there will be significant differences between male and female students' scores on the Vocational Values Inventory.

Limitations and Scope of the Study

The study is limited to a population drawn from the Basic College of the Michigan State University. This specific group of students was selected from the Social Science 233 class, which is a prerequisite for all students except those who are able to pass a test on the course material in lieu of taking the course. Individual selection of the group was a matter of expediency and convenience, both to the investigator and the authorities of the Basic College who tendered permission to the investigator.

In defense of this manner of sampling, it is important to state that this sample is a reasonable representative selection of a sophomore college group because of similar age, education, and intelligence quotients.

The manner of response to the Vocational Values Inventory suggests another limitation to the study. The items on the test can only be answered in an "either-or" fashion. Accepting the first premise leaves the second one completely out of the final results of the test. Thus, although in real life situations one may sometimes have two divergent concepts concerning the phase of values, on the Vocational Values Inventory this cannot occur.

The state of flux inherent in the population studied limits the area of generalization even more. It is quite

¹ The Basic College is a compulsory program of a broad foundation of general education for all entering freshme

evident that values and vocational choice are often constantly changing in adults who are finished with their training, so that in the population studied this would be even more apparent. This phenomena has been recognized as rather common to Basic College students in specific action by the school authorities. The Basic College students who are indecisive about their areas of specialization can select a non-preference category as their status for a limited time instead of choosing a specific area of study.

Finally, the composition of the population under study further circumscribes the area of generalization. This group was selected from the Social Science 233 class, which is a prerequisite for all students except those who are able to pass a test on the course material in lieu of taking the course. Very often these are the students who are in the upper echelon of academic functioning and eliminating them from the group involves another limitation of the study.

Definition of Terms

Vocational Values

For the purposes of this study, vocational values will be those values which will be selected and discriminated by the use of an inventory called the "Vocational Values Inventory," formulated by Johnson, Singer, and Stefflre.¹ It is designed to measure and explore values which motivate people in choosing their particular vocation.

¹See Appendix A.

Many authors have postulated values which are important in studying vocations. From this literature the authors of this test have culled seven values with items designed to measure them. These items were subjected to an itemanalysis, retaining those items with the strongest relationship to the sub-test scores and rejecting those items which were less related. A more comprehensive description of this test is given in Appendix A. The following are brief descriptions of each of these values as described by Stefflre (132).

- 1. Altruism, the extent to which the student values work in which he helps others and does kind things for them.
- 2. <u>Control</u>, the extent to which he values work where is is the "boss."
- 3. Job Freedom, the extent to which he values work in which he can control his own hours and methods.
- 4. Money, the extent to which he values work with high financial and materialistic rewards.
- 5. Prestige, the extent to which he values work in which people look up to him, a job which gives him high status.
- 6. <u>Security</u>, the extent to which he values work he is sure of keeping as long as he desires.
- 7. <u>Self-realization</u>, the extent to which he values work which lets him express his ideas, interests, and ideals and lets him be creative.

Vocation and/or Occupation

These two activities will be defined synonomously in this study. An occupation or vocation will be the way, manner, or fashion in which a person earns his living.

Population

The population studied were those students in the Basic College who were enrolled in Social Science 233, a prerequisite for all Michigan State University students except those who were able to pass a test of the course material in lieu of taking the course.

Questionnaire

The questionnaire in this study is an instrument specifically designed to elicit information relevant for the concurrent validation of the Vocational Values Inventory. It differentiates students by socio-economic levels, academic curricula, and sex.

Organization of the Study

Chapter I provides the statement of the problem, a discussion of its background, the significance and importance of the problem, and pertinent definitions.

Chapter II presents a review of significant literature. Other areas have been explored because of the semantic problems involved in those such as interests, sentiments, attitudes, sets, motivations, and values, with indications for clarification and future integration.

Chapter III contains a discussion of the statistical design of the study, including the selection, applicability, and reliability of techniques used. These methods include a study of the sample as a whole, and of the sample divided, on the basis of sex, curricular area, socio-economic level, and other related information. The results of the Vocational Values Inventory are included together with the results of the related information and the questionnaire.

Chapter IV presents the analysis of the data, describing such relationships as that of the Vocational Values Inventory and academic curricula.

Chapter V summarizes the findings and presents the conclusions and suggestions for further research.
CHAPTER II

REVIEW OF SIGNIFICANT LITERATURE

Evaluative judgments are so inherent in all phases of man's functioning, that to review all pertinent studies would be monumental and beyond the scope and intent of this chapter. However, the very nature of values and their all encompassing attributes necessitates the inclusion of certain representative studies to delineate the importance and place they have in the study of vocational choice.

The studies have been organized under three general headings: (1) Value Concepts, (2) The Problem of Values, and (3) The Integration of Values and Vocational Choice.

Value Concepts

<u>Cultural</u> Values

Allport (3) found that most cultures have similar needs and wants which are translated into basic feelings of security, affection, and a comprehending relation to the surrounding environment. These he feels underlie all the systems of values regardless of the culture they are found in.

Beck (15) states that people in all cultures have Values and rational behavior must take evaluation into

account. In the process of valuing, he questions whether it is enough just to have more and ever more facts about conditions about human relations, and how individuals think. How can thinking, valuing people discipline themselves to be rational, objective, and productive? Whatever the process, values have to be arrived at in a natural fashion. Procrustean tricks (he stretched those who did not fit the bed and cut down to size those who were too long), are outlawed because it is unhealthy for a giant to impose his values on others forcibly.

Brameld (26) feels the criterion of intercultural values is the social consensus that can be obtained about them. In its complete application there are at least three steps: (1) maximum presentation of evidence, (2) maximum communication of that evidence, (3) maximum agreement among the widest possible range of people. Upon the basis of this evidence and communication, these are indeed the wants we most deeply seek to satisfy. Values (or want satisfactions) overlay, ramify, and sometimes appear contradictory. Also, they are so multiple that we ask whether they can be synthesized around some great normative generalization or whether, for example, self-realization (regarded in a social as well as individual context) could not be accepted as this kind of inductive outcome and therefore recognized as a meaningful summary of many values.

Harding (69) in his experimental studies of generalizations and problems found that values appear to be acquired

through the processes of biological and social interaction. Value is the qualitative aspect of experience and is a function of such interaction.

Coe (36) in his "Search for What is Worthwhile," feels that there are ultimate values in every culture. They are sufficient in and of themselves to be reasonable motives for conduct.

Herrold (74) feels that valuing and thinking are the same. A quality that distinguishes man from more primitive forms of lifeis his capacity to think. To think is to discriminate. To discriminate is to valuate and the dignity of man rests in his ability to understand and accept values. The best way to become aware of our values is the one which prompts the will to think about values. Techniques for helping people to become aware of their values are important, because values enable people to choose the line of greatest advantage instead of yielding in the direction of least resistance. Character is the sum total effect of operational values and is a dynamic yet relatively permanent value structure. Certain aspects of this value structure are interpersonal in nature and are shared by members of the same culture. Other aspects of the character structure are personal and distinguish members of the same culture from one another. In the culture, Education, Psychology, Psychotherapy, and Group Dynamics help people in becoming aware of their values and value problems. As a plan of action in the problem of values, he describes Watson's

seven patterns: (1) <u>Exhortation</u>, which touches only those who already believe; (2) <u>Education</u>, to help master and disseminate the truth; (3) <u>Participation</u>, to know people and their values it is necessary to mingle with them; (4) <u>Revelation</u>, or disclosing to others what has not been known to them before; (5) <u>Negotiation</u>, or seeking common ground where there is no conflict; (6) <u>Contention</u>, or the militant few who help to achieve social change; and (7) <u>Prevention</u>, which is more valuable than techniques of diagnosis, analysis, and correction in the development of perspective and value-centered living.

He names four cultural techniques which he feels are useful in helping people become aware of their values: (1) non-directive counseling, (2) sociodrama, (3) thematic apperception tests, and (4) democratic and productive group experiences.

Religious Values

Allport (5) defines value as anything that yields a satisfaction or provides a means for such satisfaction. Since religion falls in this category, it, together with our personal life, comprise some of the highest values we know.

Lindeman (96) separates values into two categories, secular and religious. Secular values are more practical than religious values because they deal with the everyday affairs with which people are concerned. However, both are important in the building of character, which involves a man's scheme of values. Men live in a world of facts plus values and orderly lives cannot be lived without both, indicating that facts cannot make their way in a valueless world.

Literature and arts are sources of values and are important in our concept of civilization. If civilization may be taken as the concept which covers man's adaptations to his physical environment and culture is used to designate the ends and qualities of life, then it appears that everything which may be called cultural is associated with values.

Experience according to Lindeman is a major source of value. People tend to believe that their values are derived from those realms of experience which are in some degree institutionalized. Thus values come from churches, laboratories, et cetera. No matter what the source of values, the final test of their validity is not their genesis, but rather their ability to get themselves incorporated into the habits and the culture of people.

To defend the hypothesis that all religions have common bases in their emphasis on human values, Trow (151), out of the myriad of values related to human behavior, has culled six which he feels are common to all religions. The following are the six which have been derived in a modified form from Spranger's "Types of Man": (1) Health, (2) Truth, (3) Status, (4) Work, (5) Beauty, and (6) Helpfulness.

He also feels that if religious education is to be more than a set of inculcated precepts and beliefs with perhaps a little appreciation of the greatness of the sacred literatures, it would seem imperative that those who are concerned with it find a common base in an emphasis on human values and that they strive diligently for their harmonization in the lives of individuals and in the organization of community and intercommunity life.

Educational Values

Although automation has enabled people to enjoy a high standard of living, people are unable to live satisfactorily. Moore (104) feels that this is due to the fact that society has been deficient in inducing in youth the moral, religious, and aesthetic values of our culture. Because the home and church havebeen inadequate in this respect, the school has to take over. This is a giant task for the school. It has to determine what system of values is to be taught and it must devise methods of communicating these values under academic circumstances.

Romine (116) cautions against using the schools as the major influence in the learning of values. He feels that very often the schools blindly accept and adhere to too many values as unchanging "universals." Also the schools are occupied with immediate values which tend to fluctuate frequently. Thus they sometimes lack stability and might possibly contribute to social confusion.

The values of the democratic way of life have to be taught in order for people to inculcate them into their frame of reference. Krug (89) feels that the institution which can do it best is the school. However, to do it properly, people have to be taught that mere intellectual undertanding is not enough, but that democratic principles have to be carried out in actual practice.

Branscomb (27) agrees with the principle that values have to be learned, but not in the same context as educational subject matter. They must be found and learned. They cannot be forced and they do not come by the repetition of platitudes. A concern for values does not call for dogmatism or intolerance. It does require selectivity. Colleges and universities must be regarded not merely as exponents of methods of how to think and work, those are essentially the duties of technological schools, but they must be the bearers, defenders, and critics of the broad range of insights and values which constitute the civilized tradition.

Ashbaugh (10) feels that instead of the schools furnishing society with values, society should furnish the schools with those values which are most important for the future growth of society. These values must be sought, not in children's interests, but in society's needs and not in society's needs determined by the majority, but in the highest ideals and finest aspirations of its most thoughtful members.

Johnson (80) disagrees with Ashbaugh and feels that the schools are best equipped to furnish people with systems of tested values. He defends this premise with the statement that the criteria of values come from the past and the past is best presented by the institution of education.

He also feels that values have importance to a growing person only as they become his values, contributory to what he wants to be. Every value is related to every other. It is not an additive process, but must have meaning in relation to the whole self. As a result, these values are not merely instrumental, but are consurmatory. They are ends in themselves.

Stendler (133) feels there are many influences on the individual in the ontogenesis of his value process. Some are negative and some are positive, depending upon the familial background of the individual. When the home values come in conflict with the teacher's middle class values, the conflicts sometimes become unresolveable and are a deleterious influence in the psychological development of the individual. Rejected by both his family and the teacher, the individual sometimes grows up without a full sense of belongingness.

Philosophical Values

To the philosopher Repley (114), values are verified goods and goods may be recognized as being or having

expression in any interest in any object or any object of any interest that is in the responses of sentient creatures toward and away from things and conditions, external and internal. It will be apparent that these responses are not merely subjective and arbitrary. They are responses to and from actual physical, social, and psychological events whose structure and inter-connections in total situations constitute the objective basis or existence of values. The value itself can be ascertained through verification, i.e. through the performance of operations of inquiry and testing. The responses occur in respect to all values, such as those in science and art, through the organically interdependent processes of social discussion, individual reflective thinking, and interaction in existential events.

Values, like facts, are products of free open expression of interests and of careful inquiry into and the testing of effects. They may be employed in formulating correctly or adequately the salient features of our world and ourselves.

Holtzclaw (76) reminds us that no society has existed without an adequate system of values. The first systematic theory of values among the Greeks was attempted by Plato who identified "good" with unity or integration. Aristotle denied a universal theory of "good" since value differs for each society. The Epicureans agree with Plato and Aristotle that value is that which exists for its own sake. Disagreeing with these concepts are the Stoics and the

Sceptics, who have a divergent opinion of values. Theirs is a vitalistic and purely instrumental theory of value, maintaining that desire determines value rather than value determining desire.

Values, according to Axtelle (11), are dependent upon many influencing factors in our society. Class, institutional, and occupational status, all have some effect on value judgments. There are also many questions concerning the specificities of values such as the following: How does one know whether a given value statement is true? How can one know which values are better? Is there a hierarchy of values? Are there absolute values and if there are, how can we deal with them? Lastly, he feels that values have to be identified which are common to men in all cultures.

Dewey (40) would like to have facts on which to base a sound theory of values, but the views on the subject are much too diversified and conflicting at the present time to formulate an acceptable theory. The views run the gamut from, "Values are but emotional epithets or mere ejaculations" to the belief that "a priori necessary standardized values are the principles upon which art, science, and morals depend for their validity."

Rugg (119) attributes many of society's problems to the lack of a valid philosophy of values. To be more specific, he relates many of the problems concerning youth to an insecure and inconsistent system of values.

Scientific Values

The scientists in the new era of automation can explain and relate scientific phenomena, they can tell us how to attain matter and where we have failed in attaining things, but Scroggs (123) states that they cannot tell what is of most worth to us. This valuing is a matter solely of individual preference or expedience.

Kroeber (87) feels that the study of values as a natural science phenomena is a part of the study of culture and should be more than a tabulation of the behavior of a group. Values determining behavior are studied in their functional context, not re-evaluated by other standards.

Thorndike (145) agrees with Kroeber and justifies even more the amenability of values to science and scientific study. He acknowledges the difficulty of the task, but does not feel the task is insurmountable.

<u>Psyc</u>hological Values

Allport (3) states that the healthy adult develops under the influence of value schemata whose fulfillment he regards as desirable. Values are the guide line of decision making, because each specific issue fits readily into one of a few dominant categories of value. A state of valuelessness or anhedonia, causes extreme problems. Although, even the best of integrated personalities do not consistently act in accordance with their schemata of values. Impulse infantilism ^and violation of conscience are factors to be reckoned with in ^{every} organism.

Self-consistency, according to Lecky (90), is the major principle in personality, if we conceive of personality as an organization of values which are felt to be consistent with one another. Behavior expresses the effort to maintain the integrity and unity of the organization. Thus, all of an individual's values are organized into a single system, the preservation of whose integrity is essential. The nucleus of the system around which the rest of the system revolves is the individual's valuation of himself.

Weiss (156) feels that the laws of learning are important in forming value systems. He does not think that inherent values exist. All value is acquired as a series of habits and activities from the social organization in which the individual develops. The problem of values is introduced primarily by those individuals who assume responsibility for planning the behavior of others to conform with their own plan of life or some hypothetical plan which they believe has universal validity.

Social Values

Thorndike (146) feels that anything that can be thought of is valued. Human societal valuations usually refer to and depend upon satisfactions and annoyances, and desires for and against. Things are good because God wants them, men want them, and certain other sentient beings want them. It is quite obvious that we can justify most of our value judgments by satisfactions or annoyances, if they are justified at all.

Jacob (79) has investigated student's values in colleges, and found that the social effect of life's influences are more important in the inculcation and stability of values then the formal course work or the teachers in the colleges.

Kay (82) states that social values and personal values are interrelated with no real dichotomy between them. The individual builds up special types of enduring attitudes (or social values) which refer to classes of objects rather than to single objects.

It is quite evident that values and value judgments are apparent in all phases of human functioning. It is also gratifying to note that there are similarities among the values in all the areas, which might possibly lead to a generalizable theory of values. This could then apply to values in relation to vocational choice.

The Problem of Values

There are many problems involved in the investigation of values and the following have been selected as being generally representative of the major areas: (1) measurement, (2) origin and development of values, (3) the influence of values on the cognitive life of the individual.

Measurement

Although values have been studied since the first dawn of civilization, little has been recorded of their quantification and qualification in a formal manner. Many have attempted theories and postulates concerning values, but Allport and Vernon (4) appear to be in the forefront of actual measurement.

They borrowed six terms which Spranger used to describe six types of men and incorporated them into a test of values. This test enabled them to scale the relative prominence of the following six values in each individual: (1) Theoretical, (2) Economic, (3) Aesthetic, (4) Social, (5) Political, and (6) Religious.

The traits that were measured, although described as values, closely resembled basic needs, activities, and goals. This test was designed mainly for use with college students as a research tool rather than as a practical aid in counseling.

The 120 alternative items on the test are scored the same as many of the interest inventories. A higher score on the one value makes for a lower score on another value. In standardizing the test, the authors found that all the scales, with the exception of the Social Scale, were fairly reliable and independent. Expected differences were found in most of the curricular groups studied, with occasional deviations that could be explained external to the limitations of the test itself.

Subsequent studies involving the use of the Allport-Vernon Study of Values have indicated that it has sufficient reliability and validity to warrant its continued use in the field of personality research. Expecially important has been its use in studying individual differences.

The many studies involving sex differences have indicated that men score higher than women on the theoretical, economic, and political values, but women score higher on the aesthetic, religious, and social scales. There have been many explanations for this, but the Biological Determinism theory of sex differences has never been applicable in a generalizable fashion.

Religious groups have been differentiated by the test, but the explanations concerning these differences are open to discussion and doubt. In many instances the differences are meaningless because of the misinterpretation of the related material.

In differentiating vocational or academic groups, the test appears to have been quite successful. People aspiring to become businessmen of one sort or another invariably scored above the norm on the economic scale and below the norm on the aesthetic scale. Literature and journalism students were found to be above average on the aesthetic scale and low on the economic scale. Science students usually ranked highest on theoretical and lowest on Political. The student wanting to enter the field of medicine scored high on the theoretical and low on the Political. Engineering students fell much below the norm in responding to the aesthetic scale.

According to the results of the test, the authors felt that Spranger was on the whole justified in regarding these values as constituting generalized motives in men.

They also felt that the test succeeded in determining, with some precision, the prominence of each value in any single individual.

On the basis of these conclusions, the Allport-Vernon Study of Values has become a popular instrument to measure values. Whether this popularity has dampened the ardor of investigators in this area is a moot question, but it is evident that very few researchers in this area have perfected other standardized means for measuring values. There are a few studies which have utilized different instruments for measuring values, but in the main, psychologists have utilized the Allport-Vernon Study of Values as the instrument for value measurement in their research.

The plethora of studies utilizing the Allport-Vernon Study of Values indicates that not all of them can be included in this review. However, the dearth of studies involving the use of instruments other than the Allport-Vernon Study of Values necessitates the inclusion of as many studies as could be found in the literature.

Brogden (29) administered the Allport-Vernon Study of Values to two hundred college students to determine the Possibility of extracting factors other than the six utilized by Allport and Vernon in their study. Using Tetrachoric inter-correlations in his factor analysis, he extracted the following factors: (1) General Aesthetic, (2) Interest in Fine Arts, (2) Belief in Culture, (4) Anti-Religious Attitude

(5) Anti-Agression, (3) Humanitarian Tendency, (7) Interest in Science, (8) Tendency Towards Liberalism, (9)
Theoretic Interest, and (10) Rugged Individualism.

Lurie (98) reported on a test he constructed using Spranger's "Six Types of Man." He divided his test into four basic groups: (1) Interest, (2) Ideals, (3) Preferences, and (4) Belief-Opinions. He also reduces the types into four clusters of items: (1) Social, (2) Philistine, (3) Theoretical, and (4) Religious.

Wickert (160) attempted to develop a test of general desires or "Goal Values." He first collected lists of instincts, wishes, and wants. Then he constructed a test similar in form to the Allport-Vernon Study of Values to measure the relative strength of the nine selected general desires. The item-analysis showed that the "Goal Values," categories set up rationally, revealed a considerable degree of internal consistency. Those set up by chance were not internally consistent. Although the reliability was too low for individual prediction, it was high enough to ascertain something of group relations.

Koch (85) felt that values are factors in all levels of life's experiences, from childhood to adulthood. He studied a group of seven year old children in a parochial ^{school}, questioning their likes and dislikes. He found

that values differ between boys and girls. However, only a small sample was used and the results are not conclusive.

Ehrle (51) investigated an even younger age group, from two to seven years of age, and found that they had specific systems of values. Analyzing the responses of the children to normal daily activities, he found that they could be grouped into four categories: (1) Pleasure, (2) Egoism, (3) Economic, and (4) Social.

Mausner (101), accepted the postulate that perception is a function of values, and tried to prove it in his experiment with stamp collectors. Stamps were shown to these individuals, and they were asked to later identify them via a tachistoscope. The results showed that the most valuable stamps did not show the shortest thresholds of recognition.

McGinnies (103) studying word association, found that individuals respond sooner to words symbolizing their highest values than those which symbolize their lowest values. He thus concluded that value is a determinant in Word association. People have a general set to respond to terms of major values and make associations which are congruent with their value orientation.

White (157) realizing the complexity of measuring values, has attemped a method of describing qualitative data which he calls Value Analysis. He postulates that there is always a tendency for a person to think about what

is related to his own needs or values and to perceive his world in terms of those values. Thus, Value Analysis is a method of describing quantitatively any sort of free verbal expression, from psychoanalysis to public opinion interviews, with the importance of the value related to the frequency of its verbal expression.

The Origin and Development of Values

The ontogenetic development of the individual is parallel with the genesis of his values. Thus it is self evident that values are integrated into and part of personality development. They have their origin in infancy, and terminate only when life itself is terminated. However, the complexity of values and their inability to be handled in a generalizable theory have deterred most investigators from exploring the interiorization of value systems in the young. Consequently, even the interiorization of value systems in adults has not always been clearly understood.

The studies that have been done with children have been subjected to much criticism. The previously reported study of Ehrle (51) in which he states that children are dominated by specific values implies a higher mental growth to children then their age warrants.

Turner (152) found that social values do appear early, but that they are not stable and constantly are subjected to environmental influences.

In trying to relate adult values with children's values, Thorndike (146) quotes the four elementary value

concepts as evolved by Sombart: (1) physical bigness as seen in grown-ups and imagined in giants; (2) quick movement in running or bowling a hoop; (3) novelty of changing toys very quickly; and (4) a sense of power which explains why the child pulls out the legs of a fly, makes the dog stand on its hind legs, and fly a kite very high.

These values are related by Sombart to the values adhered to by adults in modern society: (1) adults attach importance to quantities or mere size, (2) speed is essential to modern man, (3) adults love novelty or sensation, and (4) a sense of power drives many adults in modern society.

Moore (104) found that if the home values come in conflict with teacher's values, then confusion reigns within the child and sometimes detracts from his developing a secure system of values. It also handicaps his developing a sense or feeling of belongingness.

Lewin (95) and others, feel that the intensity of group identification indicates how much the values of the individual are influenced. Conversely, he feels that one identifies with the group because of one's values.

In the Bennington College Study, Newcomb (108) found Similar results. Although, one has to take into consideration that the school was homogeneous as far as social class was concerned and the individuals that attended also were in the natural state of growth insofar as building Value systems were concerned.

Jacob (79) found that the opposite was true. In his study, the students indicated that four years of college do not necessarily influence divergent changes in their value systems. The studies that did show the effects of four years of college were done at a time when there was social distress and widespread economic changes. The values that were specific to Jacob's study were in effect highly influenced by the times and thus differed from Newcomb's findings. There are some changes, but the impetus for change does not come specifically from the educational process per se.

Rosenberg (118) found that family and home have a most important effect on the student's value systems. There was distinct relationship between one's economic background and the place of money in the individual's value system. The father's income was most important in the occupational choice of the student. The student usually selected the occupation which would parallel the father's, both in economic and social advantage.

The self-concept enters into valuation and follows Spranger's (130) six types of men. Lecky (90) elaborated even further and came to the conclusion that the individual's valuation of himself was the organizing factor of all his values.

Values have been discussed from many aspects and on Various levels of development. Many inferences have been Suggested, but not too many specific and generalizable conclusions. With such inconclusive evidence to support the various theories involving values and value systems, it is obvious that there is a great need for more studies which are adequately designed and controlled.

The Influence of Values on the Cognitive Life of the Individual

Attitudes, interests, sets, habits, sentiments, and even value systems have often been used to describe similar actions or responses to certain stimuli. Consequently, even though the following cognitive areas have been categorized into specifically delineated groupings, it has not been the intent of this writer to perpetuate these ideas of classification. The intent has been to relate in a convenient manner, the studies that have been attempted under the following headings:

<u>Attitudes</u>.--Woodruff and DiVesta (163) feel that values and attitudes cannot exist without each other. If concepts of objects change so that their effect on values are altered, attitudes will certainly reflect these conceptual changes. If the nature of values are known, so will they reflect knowledge of attitudes.

Nelson and Nelson (107) found that there is a relationship between attitudes and vocational choices. Students who evidenced conservative leanings chose banking, dentistry, music, and government, while those who had professed to have liberal attitudes chose journalism, social work, and agriculture. Carter (33) finds that vocational attitudes are developed as a result of a complexity of factors that are grouped under growth processes that are both sociological and biological. He also found that those students who did not manifest specific vocational attitudes were more immature in interests, less intelligent, and older than the average student.

Cantril (31) does not make a differentiation between attitudes and values. He states that attitudes or values are built up within which social norms are interpreted. The following are the steps by which they develop: (1) standards of judgment are developed, (2) these become the basis for frames of reference, and (3) these determine specific attitudes toward issues.

Arsenian (9) calls Spranger's six values attitudes and in testing college freshmen found a relationship between these attitudes and vocational interests.

In another study, Arsenian (8) states that attitudes are linked in the individual's life with a system of values determined largely by biologic needs, personal experiences, and social norms. Attitudes furthermore denote specific or general mental-motor dispositions or reaction tendencies which qualify interpretation and give direction to responses to new stimuli. Attitudes generally have an affective component, are dynamic, and more or less persistent.

Woodruff (162) hypothesizes that attitudes and values should be in harmony. Most maladjusted people have attitudes that are unrelated to their value patterns. Attitudes and sentiments are very similar according to Cattell (35). Attitudes are defined by him as neuropsychic dispositions to react with belief, thought, feeling, and overt behavior in a certain way towards a certain object as part of the purposive plan of some larger sentiment or coupled and with full awareness of the object and mode of reacting. Similarly, the definition of sentiments is an acquired and relatively permanent major neuropsychic disposition to react emotionally, cognitively, and conatively toward a certain object or situation in a certain stable fashion with awareness of the object and the manner of reacting.

Allport (6) defines attitudes as a set expectancy, stimulated by suggestion. He also reinforces the idea of early positive attitude development with his comments that natural submissiveness and poverty of ideas in children make them suggestible to adult ideas.

McGinnies and Bowles (102) emphasized the importance of attitudes in perception. In their study of prejudice, the distinctly prejudiced individuals who were tested to determine degrees of recognition among pictures of Negroes, had more scores of failure than the individuals who had less Prejudiced attitudes.

<u>Values and vocational choice</u>.--The act of choosing a vocation is a most trying period in one's life, bringing Out feelings which are similar to those brought out by other

major physiological and psychological changes that one has to go through during one's lifetime. Deeply involved in this process, according to Super (141), is the idea of the self-concept. The individual must find out whether the job permits him to play the kind of role he wants to play, and whether the role the job makes him play is compatible with his self-concept. The nature of vocational adjustment, therefore, is indistinguishable from the nature of personal adjustment. They both involve reality testing, finding out whether the individual can live up to his cherished picture of himself and whether or not his values are in harmony with the values inherent in the vocation selected.

Super (140) again states basic value constructs are most important in vocational guidance and counseling. These basic values involve the need for outlets of special ability and interests, to acquire status, to win approval, to master the environment, and to understand the nature of things. It is then possible, that vocational success can be the result of ability properly directed and satisfaction can be the result of a met need.

In further explorations in the field of vocational choice, Super (143) feels that an adquate theory of vocational choice would explain the process through which interests, capacities, values, and opportunities are compromised. In effect, he states that each occupation requires a characteristic pattern of abilities, interests, and personality traits. Interchangeably, work satisfactions and life

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satisfactions depend upon the extent to which the individual finds adequate outlets for his abilities, interests, personality traits, and values.

Many authorities feel that selecting a college major is tantamount to selecting a vocation or occupation. Sparling (128) disagreed with this and has offered some evidence that there are basic reasons for not accepting it completely. Some college majors do involve decisions that appear to be irreversible and directly related to vocations. However, when it is realized that decision making is related to factors that are not always constant, then it is important to realize that many undergraduate decisions are not necessarily the only major vocational decisions one makes in a lifetime.

Sisson (126) analyzed the occupational aims of college students and found that there are a number of predominant ones. Parental influences are the strongest in helping form basic value systems relevant to vocational choice. Job requirements and opportunities are also important and very often are not only related to environment but also to standards and values inculcated into the students by their parents.

Roe (115) concludes that vocational choice has different meanings to different individuals. With small children, "choice" of an occupation means something quite different from what it means to high school students. It also changes its meaning when one is faced with the necessity of taking a job.

In Ginzberg's (54) attempt to develop a theory of vocational choice, he feels that vocational choice is a process and very often the process is irreversible. No choice is definitively final, but compromise is an essential aspect of every vocational choice. In agreeing with Roe as to the individual meaning of vocational choice, he postulates three levels of choice. Before the age of eleven, the child usually makes unrealistic or fantasy choices. Between the ages of eleven and seventeen, many tentative choices are made. The hard facts of society are usually obvious to the eighteen year old student and here on this age level are made the more realistic selections of vocations.

In Peter's (110) study, many factors were evident which he felt were influential in helping students select future vocations. The students that were tested, responded with two groups of factors. In the first group, they selected parents, friends, a professional acquaintance, and relatives other than their parents. In the second group they selected parents, opportunity for advancement, relatives other than parents, and opportunity for quick employment.

Nelson (106) found that the parents were important factors in influencing the student's selection of vocations. However, this was only evident when the parents were professionally trained. In analyzing the background of the students, it was found that although labor and agriculture supply over

thirty-three per cent of the students, none of the students preferred to select either as a vocation.

Kroger and Louttit (88) came to similar conclusions in relating occupational choice to father's occupation. They found that most boys want to engage in occupations higher than their fathers. Seventy per cent of those interviewed wanted to engage in professions or occupations in which thirty-five per cent of the population are now working. Only one per cent of the group selected laboring or work in which more than thirty per cent of the population is now working.

There are many pitfalls in making a valid vocational choice and Williamson (161) feels that the following are most important: (1) attractiveness of the remote, (2) gratification of the unusual, (3) fallacy of the perfect niche, (4) not achieving up to ability.

Lentz and Nickel (94) do not dichotomize personality factors and vocational preference. They feel that vocational preference is a function of character and therefore should be measured within the same rationale as personality measurement. In their study (93) using three of Thurstone's seven personality factors, Academic, Biological, and Decriptive, they found a high positive correlation between specific vocational preferences grouped according to these three categories and personality characteristics grouped according to these three categories.

Small (127), investigating values and vocational choice in disturbed adolescents also found that vocational choice is a function of one's personality. The vocational choices of the disturbed boys were compared to those of a normal or relatively less disturbed group of boys. Positive realistic choices were related to real positive values and healthy stable egos. The disturbed boys had disturbed egos and were insecure in their value systems. Consequently, they manifested inadequate and unreal vocational choices.

Forer (57) continued in the same vein, but in a more specific fashion. To him, the selection of a vocation is not at all a fortuitous process, and the following psychological factors are the primary bases for choosing a vocation: (1) The choice of a vocation is not primarily logical, it is often blind, impulsive, and automatic. (2) Interests in vocations have unconscious roots. (3) Occupational choice is an expression of basic personality organization and can and should satisfy basic need. (4) The selection of a vocation is a personal process, a culmination of the individual's unique psychological development. (5) The amount of discrepancy between vocational aspirations and vocational aptitudes in either direction is a measure of the degree of personality disorganization. (6) people who can not make a vocational decision or have no preferences are more likely to be emotionally maladjusted.

<u>Values and interests</u>.--Interests and vocational choice are deeply interrelated and one does not function without the

other. However, despite the many studies done in this area, there is still a great need for more reliable tests and theories to clarify its function and position in the schematic of vocational choice.

During the early twenties, Fryer (59) saw the need for investigating interests in relation to vocational choice. He disagreed with Thorndike who felt that verbal expressions of interests are indicative of abilities and only partially disagreed with Kitson's observations that interests are only suggestive of abilities. In testing these hypotheses, he concluded that interests are not significantly valuable as criteria of ability.

Mackaye's (99) study of vocational interests of four hundred children in a California rural district, helped him formulate specific concepts concerning the development of interests. The following are the three periods of interests development in which he felt certain observable facts appear and operate: (1) The period of Abnormal Fixation, during which pupils of average or lower mentality, through reactions to inferior school achievement or shock, will in grades lower than the sixth, fixate an interest in teaching or other occupations with which the student associates himself in fantasy and which leads to maladjustment in later life. (2) The period of normal fixation, occurs at the time of leaving elementary school. At this time the necessity for hew plans results in less permanent fixations of interest governed by pleasurable associations or desires to escape

unpleasant ones. (3) The next period of fixation occurs after the eleventh year of school. Interests unformed up till this time, may because of readjustment of ideas and new economic situations come to a focus, turning to ideas of mastery over people and learning the experiential plane for the first time. He also feels that the highest type of intellect will reach college age without fixed interests.

Bordin (24) advanced the concept that theories of vocational interest have taken one of three directions: (1) The static point of view, where biological traits or vocational interests are fixed after the individual reaches maturity. This also could be construed as similar to biological determinism. (2) the empirical view, in which there are sets of preferences which can be shown to distinguish successful men in various occupations from men in general. (3) The dynamic point of view, in which vocational interests are the products of psychological influence and as such are subject to change in the equilibrium.

Generally, Strong (134) feels that interests are likeddisliked activities. In this frame of reference, it is easy to see how having learned to like an activity, it is quite Possible later on to also learn to dislike it, and vice-Versa. Consequently, he accepts Fryer's observations that interests are expressions of personality rather than ability. Also, he agrees with Menninger, and others, that three-quarters of all the patients who come to psychiatrists are suffering from an incapacitating impairment of their satisfaction in

work or their ability and interest in work. In many of the patients it is their chief complaint.

Super (144) agrees with Strong in his contention that interests have a definitive influence on values and vocational choice. It is obvious that what a person can do is of great importance, but what he wants to do is of equal importance in the final choice.

To provide a framework for the measurement of interest and its subsequent relationship to values, Super (139) offers four classifications of interests: (1) Expressed Interest, which is the individuals statement of liking or disliking something; (2) Manifested Interest, or participation in an occupation; (3) Tested Interests as measured by tests such as the Greene, the O'Rourke, and the Air Force General Information Test; (4) Inventoried Interests, which are assessed by means of activities and occupations which bear a superficial resemblance to Expressed Interests. The difference between them is that the Inventory responses are given weighted scores and then added to form a pattern of interests. Representative Inventories are those developed by Strong, Kuder, Garretson, Symonds, Dunlap, Cleeton, Lee-Thorpe, and others. Super also includes values inventories in this category because of their closely resembling characteristics. If there is a difference, he feels that the difference lies mostly in the relatedness to needs and drives.

Some of the similarities between Interest Inventories and Value Inventories indicate that criticism leveled at one sometimes can be applicable to the other. Certainly the criticism about the content of the Inventories can be applicable to both. Stefflre (132) found that Interest Inventories such as the Strong, Kuder, and others, have a vocabulary level of more than the tenth grade. The same results were found with the Allport-Vernon Study of Values.

Many studies have been completed using Interest Inventories to study relationships between vocational choice and values. Shaffer (124) found that college students had interest patterns which coincided with the interest patterns established by Kuder.

Rose (117) found similar results in his study with teachers and social workers. They made their highest scores on the Kuder Inventory in the teaching and social service scale. Seemingly this would indicate that many people enter occupations according to established interest in that work or similar work.

Ellis (53) levels criticism against Interest Inventories in general and specifically delineates the following ten factors which he feels are questionable: (1) they do not bring out configurational meanings; (2) they are good group indicators, but poor for individual diagnosis; (3) personalities cannot be described in single traits; (4) some measure the same thing under different names; (5) cultural factors interfere with validity; (6) over estimating causes

a halo effect; (7) easily falsified; (8) poor clinical rapport due to group testing; (9) yes and no answersinfluence validity, and (10) lack of internal consistency can invalidate, but the presence of internal consistency does not validate.

Although interest inventories have been the most popular instrument for measuring interests, Gage (60) attempted to study them from a different point of view. He had judges predict interests in vocations from the expressive behavior patterns of subjects during interviews. Comparing the judges' estimates with the actual results of the subjects' responses to the Kuder, he found little significant evidence of agreement between them. He did conclude that expressive behavior elicits a performance that is much too general for specific references.

The ambiguity of interests and values is partially explained by Benne's (18) statement that interests become values only as they are chosen over other interests and for reasons which appear valid to the chooser. A person or a group can be confident of the validity of its reasons for choosing as it does only as a system of criticized and Judged values is developed, used and tested in and through a succession of deliberate choices.

Duffy and Crissy (45) found that there is a positive relationship between values and interests. The Allport-Vernon Study of Values and the Strong Interest Inventory Were administered to entering freshmen at Sarah Lawrence

College. They found that there were many significant relationships between vocational interest and Spranger's six values. Also, the good students had high theoretical and aesthetic scores, and low economic and political scores. Factor analysis elicited three factors which were similar to those elicited by Lurie: (1) philistine, (2) interest in people, and (3) theoretical.

Similar results were found by Arsenian (9) in the study of freshmen at Springfield College. He administered the Allport-Vernon Study of Values and the Cleeton Vocational Interest Inventory to Springfield freshmen. Twenty-four out of the fifty-four correlations between the six evaluative attitudes and the nine occupational categories measured by these scales were significant or at least highly suggestive of the direction of the correspondence of the variables. He also found that high theoretical interest was positively correlated with good emotional adjustment.

Values and intelligence.--In studying the area of vocational choice, Feingold (55) realized that little had been done to investigate the relationship between intelligence, values, and vocational choice. Using Fryer's modified Occupational Intelligence Scale, he found that forty-six Per cent of high school pupils make proper vocational choices, forty-seven per cent of them made choices above their ability, and seven per cent underrated their ability. E ven though there are discrepancies concerning the validity

and reliability of the intelligence quotients used, this study served as an impetus for other researchers in the area of vocational choice.

Schaeffer (121) found significant coefficients of correlation between scores on the Allport-Vernon Study of Values and scores on tha ACE (College Sophomore Test).

Hollingworth's (75) studies indicated that highly intelligent students are more keenly aware of their interests and finding work that they will enjoy than students of average or below average intelligence.

Similarly, Poull (112) found that the wide variations in intelligence in the same profession indicate that interests rather than intelligence are influential in occupational decision making.

Schiller (122) agrees that intelligence has a pronounced effect on the choice of vocations. As intelligence decreased, interest in the professions decreased, indicating that people often choose occupations according to their abilities.

DiMichael (44) differed with Thorndike and concluded that interests are not a reliable method in selecting a vocation.

Super (142) has observed a close relationship between Superior intelligence and interests commensurate with that type of intellectual functioning.

Byrns (30) used the Henmon-Nelson Test of Mental Ability and the Ohio State Psychological Test and the ACE in
testing the relationship between intelligence and vocational choice. Of the 34,000 seniors tested, she found that 23 per cent of the boys chose to enter law, medicine, and engineering, while the actual percentage of professionals in that area was only 2 per cent. Although 50 per cent of the men were engaged in agriculture, construction work, and unskilled labor, only 7 per cent of the boys elected those areas as occupational choices. Sixty per cent of the girls wanted to enter teaching, nursing, and secretarial work, but only 20 per cent of the population are engaged in that type work. Concluding, she found that there is a great discrepancy between occupational choices and occupational distribution, and although there is some relationship between scholastic achievement, intelligence, and vocational choice, it is not as high as one would expect.

Ball (13) investigated the relationship between measured intelligence and occupational level. Five hundred and fifty-nine cases in the Bloomington, Indiana University Clinic were given the Pressey Mental Survey Test, Schedule D, in the period between 1918 and 1923. The current (1938) status of the occupational level was traced through the Bloomington City Directory. Each case was assigned a Barr Scale Value of Occupational Status. On a gross occupational level, he found a high correlation between measured intelli-Sence and occupational level.

In investigating values and intelligence among graduate Students in psychology, Pintner (111) found only a few Positive relationships. He found a correlation of .24 with

the theoretical value, .38 with the social value, and the rest were either negatively correlated or had zero relationship.

Crosby and Winsor (38) evolved a unique design in their investigation of values, interests, and intelligence. Accepting interests as an important factor in value systems, they administered the Kuder Preference Record to students at Cornell University and then asked the students to estimate their specific vocational interests. The correlation between self-estimated interests and scores on the Kuder was only fifteen per cent better than chance. However, a breakdown of the academic records of the students, interestingly enough, indicated that the most accurate self-estimators were among the more intelligent segment of the student population.

Values and sex.--In a study at Temple University, Ford (56) administered the Allport-Vernon as part of an entrance battery of tests to freshmen. The purpose of the study was to determine the value patterns of those entering various and different areas of academic endeavor. The distribution of the scores indicated that the evaluative attitude Played a small part in the students' choice of specialization. He also found that there were no significant sex differences and correlations between intelligence and tests of achievement were very low.

The results of Cantril's and Allport's study (31) differed with Ford's findings. They found significant

differences between male and female groups who took the Allport-Vernon Study of Values. It also successfully differentiated groups of varying occupational interests according to their evaluative attitudes. In passing, it was also observed that the scores on the Allport-Vernon Study of Values do not relate highly to intelligence test scores.

Carter and Strong (34) discovered that not only are there quantitative differences among the sexes, but qualitative differences are also very much in evidence. The girls were less interested in things and more interested in people than the boys.

Administering the men's edition of the Strong Vocational Interest Blank to both men and women, Strong found that the interests of men and women differ significantly. He also found that as people grow older, their interests become more feminine, but there was no indication that the interests of men and women become more or less alike up to forty years of age.

Using the Lehman Vocational Attitude Quiz, Lehman and Witty (92) asked 26,878 boys and girls to check the three most preferred occupations, the occupations most likely to be followed, the three best money-makers, and the three most respected occupations. The differences in sexes were highly significant. The girls chose sedentary work and Occupations involving aesthetic interests or personal Service. They preferred to receive rather than to give

orders. The boys, on the other hand, wanted active work, work which involved travel, movement, physical danger, and opportunity to give commands.

Spoerl (129) found similar results in his study of entering freshmen at American International College. The Allport-Vernon Study of Values significantly differentiated between men and women on all six factors or values. The men had their highest scores on the theoretical, economic, and political, while the women conversely held social, aesthetic, and religious values the highest.

The results of the Further Educational Intentions Blank, administered by Cunningham (39) to high school seniors, differentiated the sexes, not only in the type of vocation selected, but in the number of vocations selected. The boys selected twice as many vocations as the girls, with Engineering the first choice of the boys, and teaching the first choice of the girls. Almost thirty per cent of the boys chose engineering and forty-four per cent of the girls chose teaching. This is extremely unfortunate because Only a small percentage of those will ever be able to secure employment in those areas.

Values and socio-economic status.--Ginsberg (62) feels that values are inherently a product of the process of identification and instinctual drives. Consequently, the Origins of choice in vocational selection spring from the Same source.

Caplow (32) theorizes that vocational values and choice can be understood within two limitations, the occupation of the father can determine the son's occupation, or the occupation can be determined by testing and observing.

Tyler (153) gave the Minnesota Interest Test to high school seniors with resulting significant relationships. She found that the interest scores were not only related to the socio-economic level of the parents, but also to the educational level of the parents.

The selection of vocations of necessity could not always depend on parental identification, especially in circumstances of familial mobility towards the next highest socio-economic level. Thus, Hurlick and Jansing (78) found that seventy-five per cent of the boys in their study did not select vocations similar to those of their parents.

Dyer's investigations (49) showed that vocational choices are made from the earliest years to the end of college. Choices obviously made in relation to family and tradition are not static and subject to change at many points on the continuum of the vocational process.

Unfortunately, high socio-economic status seems to have a great influence in selecting a vocation relating to the father's vocation. Most of the previous studies showed that when the father's vocation was professional or in a high socio-economic level, the identification was very high. When the father's vocation was unskilled, semi-skilled, or very low, few students selected their future vocation in relation to their father's vocation.

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Stability of values and vocational choice.--Although the question of stability of value systems is not one of the specific issues in this particular study, it is important in the general investigation of values. It serves to focus interest on the age-old question of absolute values and whether the individual has an inherent system of values, unchanging and basic to his psychological functioning.

In a long range study, Jacob (79) found that few courses of study have influenced changes in value systems of individuals. Students do change, but the change does not come primarily from the formal educational process. Despite the inability to relate value change with course work, he does feel that values can be both "caught" and "taught."

Kemp (84) tested students before and after graduation from college, and found that the majority had changed some of their values as measured by the Allport-Vernon Study of Values. There were significant changes on the theoretical, aesthetic, and social subscales, while the rest remained relatively unchanged.

Todd (148) administered the Allport-Vernon Study of Values to students in the senior class in high school and administered the test again to them in their sophomore year at college and found specific changes in their values. He postulates that the change is not due specifically to the influence of the college, but rather reflects the cultural norms that are dominant in our contemporary culture.

The results of Whitely's study (158) cause him to suggest the possibility that values do not change. He administered the Allport-Vernon Study of Values to eightyfour students, and found their values fairly stable. Consequently, he feels that college does not necessarily change values.

The Integration of Values and Vocational Choice

From the many points of view that investigators have put forth, it is quite evident that values and vocational choice are integral to the study of human behavior. They are not limited to any specific facet of societal functioning, but are everywhere. This coincides with Thorndike's (146) feelings that anything that can be thought of is valued.

The salient values in each facet of societal functioning appear to be quite similar, leading to a possibility that a generalizable theory of values could be formulated to encompass the existence and function of all values. It also need not be culture bound, as other cultures appear to have values which seem to be common to all.

The existence of value systems among all phases of societal functioning imply that they also exist in all levels of ontogenetic development. Many investigators have found this to be true, and the values they have found have been measured in various ways. Quantifying these values through a statistical medium has helped investigators notice recurring similar value complexes wherever they occur in human experiences.

Attempts at measuring values have been few and far between. Only a handful of investigators have actually tried to quantify values in some fashion. It is often evident that many of the interest, attitude, sentiment, and set instruments of measurement have similar bases, but value tests per se have been formulated in the main by Allport-Vernon, Bills, Lurie, Prince, and Stefflre.

The inclusion of studies other than those of values per se, have indicated the need for a semantical clarification of terms which have been used interchangeably. That these terms such as interest, attitude, sentiment, and set, have a delineated relationship with each other is quite obvious and only by studying in total each with the other, will the study of values elicit fruitful results.

In this study, which is partially based on the theories of vocational choice as expounded by Ginzberg, Super, and Roe, an attempt will be made to relate selected values to vocational choice. It will also investigate the values of students coming from different socio-economic levels, and the possibility of value differences among men and women.

CHAPTER III

METHODOLOGY

Chapters I and II have been concerned with the purposes or the statement of the problem, the background of the study, and the limitations which are inherent in the research design. In the present chapter, the emphasis is upon the methodology and procedures involved in the gathering and analysis of the data upon which this study is based.

This study is generally concerned with the investigation of the values which are related to different vocational and curricular areas. The major instrument involved in the study, The Vocational Values Inventory, is designed to elicit the various stated values that people feel are the basis for their preference or entry into a particular vocational area. Since the test has not been validated on this particular group, its validation through the use of a questionnaire and other related material will also be considered. Specifically, this investigation was designed to attain the following objectives:

 To determine whether students planning to enter different occupations tend to vary in the values measured by the Vocational Values Inventory.

- To determine whether students from different socio-economic levels tend to have different values as measured by the Vocational Values Inventory.
- 3. To determine whether there will be significant differences between male and female students' values on the Vocational Values Inventory.

Among the many problems faced in the completion of the study are the following: (1) the administration and analysis of the instrument used to measure values, (2) the determination of the validity and reliability of the instrument used for measuring values, (3) the construction of a questionnaire as an instrument to elicit information not obtainable elsewhere, (4) the selection of an appropriate sample of the student population, and (5) the formulation and organization of methods of tabulating and analyzing the results of the study.

The Administration and Analysis of the Instrument Used to Measure Values

In light of the fact that there appear to be values that are common to many of the studies discussed in Chapters I and II, selecting those which might be specific to vocational choice has not been an easy task. Too many of the authors of value studies have investigated the same area under different names. Very often this has indicated to the naive researcher that specific values are related to different facets of human behavior, when, in fact, there

are broad areas of valuing and value systems and the same values are similarly motivating in many areas.

The values selected by the authors of the Vocational Values Inventory seem to have the property of values common to many areas of functioning. The authors have reviewed the literature and have selected those values which they feel need investigating for their effect on vocational choice. Despite their different nomenclature, the similarity of these values to values selected and utilized in studies by other researchers seems to justify their selection on an observational basis rather than a statistically processed basis.

The Vocational Values Inventory is still in its exploratory state and much work still needs to be done for further establishment of norms. The norms that are available are for the following groups: thirty-five high school females and fifty-four high school males, forty male graduate students in Education and thirty-five female graduate students in Education, and one hundred and twelve high school seniors composed of sixty-one girls and fifty-one boys.

In the administration of the test, the students were asked to carefully read the Vocational Values Inventory booklet¹ which explained the intent of the test and described the directions in detail. Although there was no specific time limit, they were asked to work as quickly as possible, answering all the questions. For purposes of economy and convenience, answer sheets were passed out and the students

¹Appendix A.

were asked to put their answers on them, rather than the inventory booklet. To facilitate the gathering of data from the Office of Evaluation Services¹, students were asked to put their name and student identification number on the answer sheet. Unfortunately, out of the 526 tested, only 436 put their names and student identification numbers on the test answer sheets. Consequently, the sample was limited to 436.

The test consists of 168 forced choice items and is scored to yield seven measurements of values. (131) The seven scores of the inventory are indicative of the seven postulated basic values used in the study.

- 1. Altruism, the extent to which the student values work in which he helps others and does kind things for them.
- 2. Control, the extent to which he values work where he is the "boss."
- 3. Job Freedom, the extent to which he values work in which he can control his own hours and methods.
- 4. Money, the extent to which he values work with high financial and materialistic rewards.
- 5. Prestige, the extent to which he values work in which people will look up to him, a job which gives him high status.
- 6. Security, the extent to which he values work he is sure of keeping as long as he desires.
- 7. Self-realization, the extent to which he values work which lets him express his ideas, interests and ideals and lets him be creative.

Reliability and Validity of the Vocational Values Inventory

Reliability

The reliability of a test refers to the consistency or stability attained in its measurements. As such, an index of reliability reveals the degree of confidence which may be placed in scores obtained with the test. According

¹ A department in the Basic College which helps develop, coordinate, and administer the program of examination and evaluation.

to English and English (54:456), there is no one measure of reliability. They state:

Reliability is a generic term referring to several types of evidence. When repeated performance of the same act by the same individual is in question, reliability is the opposite of variability and the standard error of measurement is an appropriate index. . . For testing, there are several distinct correlation measures of reliability, all misleadingly given the one name of reliability coefficient. Several different coefficients are computed, each an answer to a distinct question.

There are a number of methods for assessing reliability, each having variations. These are: (1) Equivalent form, (2) Test-retest, (3) Split-half, (4) Kuder-Richardson, and (5) Hoyt's modification of the Kuder-Richardson.

Hoyt's modification of the Kuder-Richardson has been selected for this study because of an obvious process of elimination. The equivalent form could not be used because there is no other form of the Vocational Values Inventory. The test-retest method was not feasible because of the distortion of the results due to the learning influences of the questionnaire and questions asked during and after the administration of the Vocational Values Inventory. The split-half method can only be used in tests where all the items are equally scored and are homogenous. This method might have been applicable to this study if it were possible to obtain a good or equivalent split of the tests. Hoyt's modification of the Kuder-Richardson is acceptable for use in this study because it requires only a single administration of one form of a test. It is not influenced by practice and memory factors, and it can be used with raw data.

Validity

The validity of a test is the degree to which a test measures what it is designed to measure. In most cases, the difficulty lies in finding a suitable criterion of what the test is trying to measure, excluding the test itself, against which the test may be checked by correlation.

It is apparent that certain studies and tests lend themselves to certain kinds of validity determinations. To explain this concept in relation to this study, a few of the more commonly accepted types of validity will be briefly reviewed. These are concurrent, content, and predictive validity. The method involving the determination of Internal Consistency will also be included in this section as its implications for reliability are also relevant in the study of validity.

Content validity is also known as logical or curricular. A test is valid in this respect when it adequately covers . the content and objectives of whatever area it tests.

Predictive validity foretells behavior. For example, if students are given tests to determine admission to college and the scores are correlated with future academic achievement, then it can be assumed the criterion measure, the grade point average, can be predicted within a certain range by the admissions tests.

Concurrent validity is similar to predictive validity except that the criterion measures are collected at the time of the administration of the test. An example of this would

be whether the tests could differentiate vocational or curricular groups.

The inherent features of this study led to the use of the concurrent type of validity. There are few independent measures of the traits in question; it is not possible to predict in such a limited time; an external measure or criterion is not feasible for determining relationships.

To investigate the possibility of differences on the Vocational Values Inventory among the various groups studied, the method of analysis of variance was used. According to Lindquist (97:73) the following assumptions have to be made before its use can be justified. They are:

- 1. All treatment groups were originally drawn at random from the same parent population. After administration of the treatments, each group may then be regarded as a simple random sample from a different (hypothetical) treatment population.
- 2. The variance of the criterion measures is the same for each of these treatment populations.
- 3. The distribution of criterion measures for each treatment population is normal.
- 4. The mean of the criterion measures is the same for each treatment population.

Norton's study as stated in Lindquist (97) indicates certain modifications of these assumptions which enable the analysis of variance to be used in this study. They are:

1. The distribution need not be tested for normality because of the insensitivity of the "F" test to moderate departures from normality. 2. Only extreme departures from normality, those that can be detected by backwatton, will have an appreciable effect on the "F" test.

The "F" test permitted the inference, if there are differences, that these differences are significant differences between the groups, but does not specify which group differs significantly from each of the others. To determine whether any particular mean difference was significant or not, the null hypothesis had to be tested, applied to the mean difference by Duncan's method (48).

The problem of internal consistency which deals with the question of reliability has been included in this section because of its obvious relationship and influence on validity. Odell(109:100) states:

The reliability of a test is an important factor in determining its validity, that is, how well it measures what it purports to measure. No measuring instrument can be more valid that it is reliable: almost all are less.

The determination of internal consistency through the method of item analysis is cumbersome and usually not worth the excessive amount of statistical computations required. However, in this study, its use is justified because it measures the reliability of a test at the time of its administration and the inter-correlations between all the items on the test are needed to determine which of them Should be rejected in the final modification of the test.

The Vocational Values Inventory items are answered on an "either/or" basis. Accepting the first question excludes the second and accepting the second question excludes the first. With this fact indicating a dichotomy in the scores, the Pearson Product Moment Correlation could not be used to measure the relationship between the variables since Pearson's basic assumption involves continuous variables. The variables to be correlated are dichotomous. normally distributed and linearly related. Encompassing these assumptions, the tetrachoric correlation technique can be used to describe the relationship between the two variables. The two variables to be correlated are the individual items or questions on the Vocational Values Inventory which are answered either A or B and the total scores of all the items for a particular value which are arranged serially from high to low and then dichotomized by the median into high and low groups. The percentage of the high 50 per cent group and the percentage of the low 50 per cent group are utilized to compute the tetrachoric correlation coefficient according to the chart described in Adkins (1). In this fashion, insight can be gained into the characteristics of good and poor items and the feasibility of discarding those items which bear little or no relationship to what they are supposed to measure when compared to the total score of the value.

Guilford (67) and Lindquist (97) also recommend that the sample size be approximately 200 for the results to be

reliable. Although the tetrachoric technique can be used with a smaller population, its accuracy will not be the same as with a larger group.

In this sample the number of men, 261, was safely within the limits of this assumption. The number of women was somewhat smaller, 175, but still of a size which can be measured in a meaningful fashion.

The Construction of a Questionnaire to Elicit Information Not Obtainable Elsewhere

The questionnaire, a copy of which is in Appendix B, was designed to obtain information useful in the testing of the various hypotheses stated in Chapter I. This material was not included in the students' records and could only be obtained by directly questioning each of the students through the administration of the questionnaire.

The questionnaire that was used in this study was devised by the writer who employed the following procedures:

a. A Survey and study was made of the various questionnaires used by Rosenberg (118), Jacob (79), Katz-Allport (81), and Allport-Vernon (4), to investigate values which have appeared in various books and journals published in the United States and Great Britain.

b. The questionnaire was then devised, taking into Consideration the various conclusions from previous research Conducted in this area. Questions that were applicable were incorporated into the present questionnaire. They were then revised and refined in light of suggestions offered by Members of the advisory committee of this dissertation.

The information to be elicited concerned the student's socio-economic status, sex, vocational selections, and aspirations and similar material to provide data for the validity study of the Vocational Values Inventory.

c. The reliability and validity of the questionnaire was not tested by statistical procedures, but was accepted on an empirically observable basis. The questions that were used were those that could test the various hypotheses stated in the previous chapters.

The name and student number of the student was asked for in order to discriminate between men and women and to facilitate checking the students' records in the Office of Evaluation Services. Question 3 investigated the students' estimates of their socio-economic status and Questions 4 through 10 were designed to empirically observe factors which might be related to those values studied through the use of the Vocational Values Inventory.

Questions 4 through 10 were processed to determine the possibility of significant differences of the responses of men and women. The responses were treated as though they were scores on a test and they were subjected to a "t" test to determine the differences, if any, at the 5 per cent level of confidence.

Question 11 elicits the vocation the student would like to enter and Question 12 elicits the vocation the student realistically feels he will enter. The vocations students would like to enter and the vocations they feel

they will realistically enter, often proves a serious source of conflict. To fully explore the implications of this conflict is beyond the scope of this study and thus has not been included in the major hypotheses of this study. Question 11 has been included in the questionnaire to help in the investigation of possible congruence or incongruence of reality and fantasy--based occupational selections. Question 12 has been included to facilitate the investigation of values and occupational choice.

Both Question 11 and Question 12 were subjected to an analysis of the variances and where differences were found, Duncan's method was used to determine which of the means were significantly different.

In Question 13 the titles or themes of the various sub-tests of the Vocational Values Inventory were incorporated into the question and the student was asked to place them in the order in which they influenced him in his selection of a realistic vocational goal or academic curricular area. The student's scores on sub-tests of the Vocational Values Inventory were then ranked in a similar fashion by the writer and the two ranks were correlated by the Rank Order Correlation method. The 436 students' Scores were processed in this fashion. Further statistical Procedures could not be attempted until these coefficients We re converted into Z scores which enable different test ^SCores to be compared with each other. Also, converting these coefficients into Z scores enables them to be

meaningfully processed according to the appropriate statistical methods. The formula for this score is included in this study to differentiate it from other standard scores similar in intent and nomenclature. The following is the formula for the Z scores used in this study:

 $Z = \frac{1}{2} \log^{e} \frac{1-r}{1+r}$

The Selection of an Appropriate Sample of the Student Population

The individuals selected for this study were all enrolled in the Basic College of Michigan State University. A breakdown of the participants with respect to sex and designation of vocational or curricular aspiration is given in Table 1.

Some of the vocational areas selected were of a number too small to include for meaningful statistical processing. Consequently, only 230 of the males and 140 of the females were used in the analysis of variance of the subjects' fantasy--based on vocational selections, and 229 males and 144 females were used in the analysis of variance of the subjects' reality--based vocational selections.

The college freshmen group was selected for investigation for many reasons. Although vocational decision making is important to all people, to the college bound youth it is even more so. Much of his professional training is long and expensive and for all practical purposes, irreversible. Thus, a vocational selection must be commensurate

ΤA	BL	E	1

PERCENTAGES OF THE FANTASY AND REALITY-BASED VOCATIONAL OBJECTIVES OF THE SUBJECTS

Occupations	Fantasy Number	Per Cent	Reality Number	Per Cent
MALE				
Entertainment	14	6.1	7	3.06
Teaching	3 2	13.91	41	17.91
Social Welfare	13	5.65	10	4.36
Medical	21	9.13	17	7.42
Business	42	18.26	42	18.34
Engineering	37	16.09	36	15.7 2
Managerial	2 3	10.00	26	11.35
Selling	21	9.14	19	8.30
Forestry	15	6.54	16	7.00
Don't Know	12	5.18	15	6.55
TOTAL	2 30	100.00	229	100.00
FEMALE				
Artistic Work	13	9.29	9	6 .2 5
Journalism	11	7.86	7	4.86
Te a ching	64	45.71	91	63 .2 0
S ocia l Welfare	17	12.14	9	6 .2 5
Nursing	24	17.14	18	12.50
Selling	11	7.86	10	6.94
TOTAL	140	100.00	144	100.00

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with all the motivating factors of each individual, both conscious and unconscious. Vocational selection is not just confined to the individual, but involves the welfare of the nation, as most of the positions of leadership are and will be occupied by college trained personnel.

Not only are the college students an important segment of our population to study, but the period in which they are investigated is of special significance. Especially important is the freshmen year in college, or the period of "crystallization," as stated by Ginzberg (63). The factors which are primary in professional motivation are quite evident during this period. According to Hawkes (73), Gray (66), and Sparling (128), between seventy and eightyfive per cent of the freshmen college group can state specific and supposedly definite vocational aspirations. It is true that these aspirations can be influenced by events later in life, but at the time of college entry, freshmen students have had definite reasons why they Selected definite vocations. It is these reasons which influenced these individuals into entering college which are under investigation in this study.

The sample was selected with the help of Professor Dunham, Professor of Social Science. A true random sampling of the student population of the Basic College would have enabled each student to have had an equal chance of appearing in the study. For many reasons, among those expediency and convenience, this was not attempted. Dr. Dunham contacted

various instructors in the Social Science Department who were teaching Social Science 233 for permission for this examiner to administer the Vocational Values Inventory and the questionnaire to their classes. Eight instructors gave permission for this examiner to administer these tests to sixteen of their classes. With an average population of 33 to each class, 528 students were tested.

Although the students were given repeated directions to put their names and student identification numbers on each of the instruments administered to them, 82 did not follow directions and the sample was decreased to a workable group of 436 students, 261 males and 175 females.

The composition of this group served to eliminate some obvious errors. One source of error is hasty generalization due to the inclusion of all or nearly all age levels in the formulation of conclusions. In analyzing research among individuals in the same age range, the results are often vague and ill-defined. Therefore, to investigate groups Of different age levels would lead to even greater errors of estimation. In some respects this error was decreased by the sample group being in the same age range.

The Formulation and Organization of Methods of Tabulating and Analyzing the Results of the Study

The number of variables in this study necessitated the use of machines for tabulating and scoring the instruments used in this study. The Vocational Values Inventory

was scored by the International Test Scoring Machine, using Machine Key Form A. The two instruments, the Vocational Values Inventory and the specially designed questionnaire, were then coded and this code was punched into International Business Machine (IBM) cards.

Although the majority of the statistical calculations involved in this study were accomplished by manual effort, the use of the IBM cards facilitated the computation of a few measures of relationship. These measures, Pearson's Product Moment Correlation Coefficients, were directly computed by feeding the IBM cards into the input of the high speed computer, the MISTIC. The data utilized in this fashion were the scores on the sub-tests of the Vocational Values Inventory, with the scores of the men, women, and the total, being intercorrelated separately.

The tetrachoric correlation coefficient formula is too cumbersome and lengthy for use in this study. According to Adkins (1), Mosier and McQuitty (105), and Guilford (68), the results computed by the long formula are approximately the same as the results achieved by the use of the short form. Consequently, the short form described in Adkins (1) was used for computing the estimated relationship between each of the items on the Vocational Values Inventory and the total score of each of the sub-tests of the Vocational Values Inventory.

The rationale and description of the method is aptly stated by Mosier and McQuitty (105:57):

It is shown that by making the assumption that the knowledge of the test item and the knowledge of the entire test are both distributed normally, the correlation coefficient between any item and the entire test can be expressed as a function solely of two proportions--the percentage of a high scoring group passing the item and the percentage of a low scoring group passing the item. This function is expressed graphically as a family of curves for each of two conditions -- where the high scoring and low scoring groups are samples of the highest and lowest quarters respectively and where they are samples from the upper lower halves. It is shown moreover, that two and other common measures of item validity, the upperlower difference and the critical ratio of the upperlower difference may be drawn on the same coordinate axis.

Summary

The methodology involved in the procedures and analysis of this study has been discussed in this chapter. The Vocational Values Inventory and the questionnaire have been described. The population was defined as consisting of the students at Michigan State University who were currently enrolled in Social Science 233, part of the prerequisites for admission to the upper school. The sample was not randomized, in that it was arbitrarily selected on the basis of expediency and convenience. However, no apparent biases were present and the sample would seem to represent the population of this level of students at Michigan State University.

The Vocational Values Inventory and questionnaire were administered to the students in groups. The Vocational Values Inventory was scored by the scoring service of the Office of Evaluation Services at Michigan State University.

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The questionnaire was manually scored. The data from both instruments were then punched into IBM cards, enabling the sorting and tabulating to be done by the IBM machines. Some of the data could be processed by the high speed computer, the MISTIC and the rest of the data had to be manually computed.

The means and variances were computed on most of the variables and comparisons were made between the different groups. The significance of the variances were determined by the "F" test and where this indicated possible differences between the means, Duncan's method was utilized to determine just what means were different.

Reliability was studied by means of Hoyt's test and item validity was determined by the method of inter-item analysis using Adkin's (1) adaptation of the short form of the tetrachoric correlation technique.

To determine the possibility of relationships between some of the data on the questionnaire and the scores on the Vocational Values Inventory, various statistical methods were used. Question 3, socio-economic status, was investigated to determine differences by means of the analysis of variance method. Questions 4 through 10 were processed by means of the "t" test to determine significant differences between males and females. The analysis of variance method was used to determine differences in Questions 11 and 12, and Question 13 was processed by means of the method of Rank correlation.

CHAPTER IV

ANALYSIS OF THE DATA

The tenability of various hypotheses concerning the relationship of values and vocational choice was examined in this study. Each of these hypotheses and problems relevant to them were examined with statistical techniques which would provide meaningful treatment of the data.

The following are the hypotheses that were tested and the problems relevant to them:

Hypotheses

- A. There are no significant differences in the mean sub-test scores of the Vocational Values Inventory among students planning to enter different occupations.
- B. There are no significant differences in the mean sub-test scores of the Vocational Values Inventory among students coming from different socio-economic levels.
- C. There are no significant differences in the mean sub-test scores of the Vocational Values Inventory among male and female students.

Relevant Problems

- A. The determination of the reliability of the Vocational Values Inventory.
- B. The determination of the item validity of the Vocational Values Inventory.
- C. The determination of the concurrent validity of the Vocational Values Inventory.
- D. The determination of congruence or incongruence of Question 11 and Question 12, which involve fantasy and reality-based vocational choices.

It is difficult to meaningfully interpret data from a testing instrument without understanding some of its limitations. Consequently, the discussion will begin with the Problems Relevant to the testing of the various hypotheses.

Relevant Problems

Determination of the Reliability of the Vocational Values Inventory

Before determining the reliability of the Vocational Values Inventory, it was investigated for possible homogeneity. The sub-tests were intercorrelated according to men, women, and total group and the means and standard deviations of each of the groups were computed.

Table 2 shows the intercorrelations of the seven subtests of the Vocational Values Inventory for the entire group and Table 3 shows the means and standard deviations of the same group. Using .13 as the minimum correlation

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	Money	Job-Freedom	Security	Self-Realization	Prestige	Control	Altruism
Money	Ч	006	051	382*	.117	041	662*
Job-Freedom		Г	244*	021	111	154*	287*
Security			Г	150*	378*	- 209*	034
Self-Realizat	ion			1	104	256*	.199*
Prestige					1	029	275*
Control						Ч	145*
Altruism							1

n = 436

*Minimum significance at the .01 level of confidence = .13 or higher.

TABLE 2

score significantly greater than zero at the 1 per cent level of confidence, only twelve of the intercorrelations showed some relationship between the sub-tests.

TABLE 3

MEANS AND STANDARD DEVIATIONS OF THE SCORES OF THE TOTAL GROUP ON THE VOCATIONAL VALUES INVENTORY SUB-TESTS

Sub-Tests	Means*	Standard Deviations
Money	9.81	5.77
Job-Freedom	12.21	4.48
Security	9.68	4.89
Self-Realization	19.94	3.29
Prestige	11.18	4.36
Control	9.48	3.98
Altruism	12.58	6.41

*Maximum possible score on each of the sub-tests = 24.

Table 4 indicates the intercorrelations of the subtests of the men, and Table 5 shows the means and standard deviations of the same group. Again using .13 as the minimum correlation score significantly greater then zero at the 1 per cent level of confidence, only eleven of the intercorrelations showed some relationship between the sub-tests. Here again, there are strong evidences that the sub-tests are measuring qualities which are unique to each of them.

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TABLE 4

	Money	Job-Freedom	Security	Self-Realization	Prestige	Control	Altruism
Money	-1	037	105	391*	.048	042	589*
Job-Freedom		Ч	227*	046	138*	212*	252*
Security			Т	063	430*	224*	034
Self-Realizat	tion			Г	10	268*	.149*
Prestige					1	600 -	- 200*
Control						Т	- 004
Altruism							Г

N = 261

*Minimum significance at the .OI level of confidence = .13 or higher.

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Sub-Tests	Means*	Standard Deviations
Altruism	10.45	5.61
Money	11.04	5.54
Job-Freedom	12.67	4.52
Security	9.94	5.22
Self-Realization	18.45	3.55
Prestige	11.33	4.62
Control	10.10	3.98

MEANS AND STANDARD DEVIATIONS OF THE SCORES OF THE MEN ON THE VOCATIONAL VALUES INVENTORY SUB-TESTS

*Maximum possible score on each of the sub-tests = 24.

Table 6 shows the intercorrelations of the sub-tests of the women. Table 7 shows the means and standard deviations of the same group. The utilization of .13 as the correlation score significantly greater then zero shows twelve coefficients that indicate relationships among the sub-tests. The majority of the coefficients are low enough for this examiner to accept the assumption that the seven sub-tests, when administered to the women in this study, measure qualities that are unique to each of the sub-tests.

This evidence of homogeneity of each of the seven sub-tests satisfies the assumptions underlying the use of Hoyt's test of reliability. Table 8 indicates the reliability coefficients that were obtained from Hoyt's technique. The

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TABLE	

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PRODUCT MOMENT INTERCORRELATIONS OF THE SCORES OF THE WOMEN ON THE VOCATIONAL VALUES INVENTORY SUB-TESTS

	Money	Job-Freedom	Security	Self-Realization	Prestige	Control	Altruism
Money	r -1	044	010	288*	.217*	178*	685*
Job-Freedom		Ч	308*	.100	080	135*	281*
Security			Г	326*	280*	233*	.034
Self-Realizat	tion			1	- 060	153*	.129
Prestige					Т	092	332*
Control						Г	051
Altruism							Ч

N = 175

.01 level of confidence = .13 or higher. *Minimum significance at the
TABLE 7

Sub-Tests	Means*	Standard Deviations
Altruism	15.77	6.19
Money	7.96	5.63
Job-Freedom	11.54	4.33
Security	9.29	4.32
Self-Realization	19.67	2.69
Prestige	10.95	3.93
Control	8.56	3.81

MEANS AND STANDARD DEVIATIONS OF THE SCORES OF THE WOMEN ON THE VOCATIONAL VALUES INVENTORY SUB-TESTS

*Maximum possible score on each of the sub-tests = 24.

In analyzing the seven correlation coefficients, many viewpoints have to be considered. Kelley (83) stated that to be meaningful, a reliability coefficient should be at least .94. Hull (77) was more liberal and allowed .90 as a minimum correlation coefficient for meaningful analysis. Guilford (67) feels that the reliabilities are characteristically below. 90 rather than above .90. Below .80 he feels a test is questionable unless it is used in a battery of tests. Then .70 is adequate. The seven sub-tests of the Vocational Values Inventory can be considered a battery of tests and, therefore, the obtained correlation coefficients are all within minimum acceptable reliability ranges.

Vocational Values Inventory Sub-Tests	Reliability Coefficients
Money	.87
Job-Freedom	.83
Security	.85
Self-realization	.69
Prestige	.86
Control	.69
Altruism	.91

THE SUB-TEST RELIABILITY COEFFICIENTS FOR THE VOCATIONAL VALUES INVENTORY USING HOYT'S METHOD

The Determination of the Item Validity of the Vocational Values Inventory

In Table 8 it was seen that as a whole, each of the Sub-tests was reliable. According to Adkins (1), this is imperative for determining item validity. From this information follows the postulate that items that measure what the sub-tests measure correlate highly with the sub-tests. Thus, a reason for eliminating items can be justified. However, the determination of what are the proper levels of correlation, those which will give the best items, is only related to the test and what it measures. Goodenough (65) feels that a value of "r" that reaches the twenty-five per cent level of confidence is sufficient to justify the inclusion of the item. Bean (14) stated that he did not

TABLE 8

know of a well established criterion value for an itemtest correlation below which a question would be considered too poor to be retained. He agreed with Guilford (67) and Goodenough (65) that all minus items should be automatically rejected and felt that low correlations of .10 and .15 are very questionable.

Brigham (19) and Thorndike (147) stated a definite cut-off point in their study which proved workable. They felt that a .40 coefficient of item-test correlation would be the best indicator of how good an item is. A correlation coefficient of .40 is too high as a cut-off point for this study, because it would eliminate items which are fairly good discriminators of the values measured. Thus, to Prevent items which might add to the reliability of the test from being rejected, .18 was designated as a cut-off point, below which items were rejected as not adding to the reliability or purity of the test.

The items which related to sub-scores with coefficients less then .18 were classified as poor discriminators. A coefficient of .18 discriminates at the one per cent level according to Garrett's formula (61:366), and therefore poor discrim inators do not bear a strong relationship to the sub-test scores.

Table 9 indicates those items which do not measure the characteristics for which they were designed. Taking the entire sample, both men and women together, only six items are found which do not measure that which they were designed to

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	P P P P P P P P P P P P P P P P P P P	\mathbf{r} \mathbf{v} \mathbf{v} \mathbf{v} \mathbf{v}	н <i>о</i> и одани и и и и и и и и и и и и и и и и и и	M M-JF M-JF M-SR-JF SR-SR N-SR SR-SR A-SR A-SR A-SR A-SR SR-M SR A-SR SR A-SR SR A-SR SR SR SR SR SR SR SR SR SR SR SR SR S	HERERONNEROROR	758. 78. 78.	P-SR A-SR P-C SR-A A-SR	4 4 K O K K	
ope	rties or Valu A = Altru: M = Money JF = Job F1 C = Contro	Les: Lsm reedom 01	R = Pres R = Self Secu	tige -realizatior rity					1

TABLE 9

measure. When the men and women are statistically processed as one group, called the total group, six items are found which do not measure the property they are supposed to measure. The results indicate that men and women respond differently to the same items. In this breakdown of separate processing for men and women, the women produce fourteen i tems which do not measure that which they were designed to measure, and the men produce six items which do not measure the property which they were designed to measure. A more comprehensive view of all the item-validity correlation coefficients produced by the short form technique of the tetrachoric correlation method can be found in Appendix C.

The Determination of the Concurrent Validity of the Vocational Values Inventory

Reviewed briefly, this method of estimating validity involved the use of the Rank Order method of correlation. In Question 13 of the questionnaire, the titles of the various sub-tests of the Vocational Values Inventory were ranked from one to seven by the subjects in the order of their importance to the subjects in their selection of a vocation. The scores of the same subjects on the Vocational Values Inventory were ranked by the examiner from one to seven and the two measures were then compared by the Rank Order method.

Table 10 shows the distribution of Z scores converted from Rank Order correlation coefficients and Table 11 shows the means, standard deviations and the differences between the mean Z scores of the men and women. The men achieved

TABLE 10

DISTRIBUTION OF Z SCORES CONVERTED FROM RANK ORDER CORRELATION COEFFICIENTS OF VOCATIONAL VALUES INVENTORY SCORES AND ANSWERS TO QUESTION 13 IN THE QUESTIONNAIRE IN RELATION TO TESTED AND STATED VALUES

"Z" Scores	Male	Female	Total
-2.5002.251	1	0	l
-2.2502.001	0	0	0
-2.0001.751	0	0	0
-1.7501.501	0	0	0
-1.5001.251	0	0	0
-1.2501.001	0	0	0
-1.000751	3	2	5
750501	1	2	3
500251	12	7	19
250001	16	7	2 3
0.0249	31	25	56
.250499	51	28	79
.500749	28	22	50
.750999	42	2 6	68
1.000 - 1.249	17	14	31
1.250 - 1.499	14	24	38
1.500 - 1.749	2	3	5
1.750 - 1.999	0	0	0
2.000 - 2.249	1	l	2
2.250 - 2.499	0	0	0
5.000 - 5.249	0	1	1

a mean Z score of .50 and the women achieved a mean Z score of .64. This is equal to an r of .46 and .56, respectively.

TABLE 11

Item	Male	Female	Total
Number of students	2 61	175	436
Mean "r"	.46	.56	.51
Mean Z score	.50	.64	.56
Standard deviations	1.68	2.06	1.87

MEANS AND STANDARD DEVIATIONS OF THE Z SCORES SHOWN IN TABLE 10 AND DIFFERENCES BETWEEN THE MEAN CORRELATIONS

Differences between the means "t" = .76

Not significant at the 1 per cent or the 5 per cent level of confidence.

As shown in Table 11, the "t" score of .76 indicates no significant difference between the mean Z scores of the men and women.

> THE DETERMINATION OF CONGRUENCE OR INCONGRUENCE OF QUESTION 11 AND QUESTION 12 ON THE QUESTIONNAIRE, WHICH INVOLVES FANTASY AND REALITY-BASED VOCATIONAL CHOICES OF MEN AND WOMEN.

Table 1 in Chapter III indicates the percentages of those students selecting vocations based on fantasy, and

those selecting vocations based on reality. Except for Entertainment and Teaching, the vocations selected by the <u>men</u> based on fantasy were very similar to their occupations selected on the basis of reality. Entertainment when selected according to fantasy was 6.1 per cent. When selected according to reality the percentage decreased to 3.06. Teaching when selected according to fantasy was 13.91 per cent, but when selected according to reality the percentage increased to 17.91.

Also shown in Table 1 are the occupations selected by the <u>women</u> in relation to fantasy and reality. Their selections were different from the male selections in the type of vocations selected, the number of vocations selected, and the amount of congruence or incongruence between reality and fantasy-based vocational choices. The only fairly congruent selection was Selling; the rest of the vocational selections were different in number. To put it in other words, many of the women who had selected vocations based on fantasy, did not select the same vocations when asked to do so on a reality basis.

HYPOTHESIS A. THERE ARE NO SIGNIFICANT DIFFERENCES IN THE MEAN SUB-TEST SCORES OF THE VOCATIONAL VALUES INVENTORY AMONG STUDENTS PLANNING TO ENTER DIFFERENT VOCATIONS.

Table 12 shows the means and variances of the scores of the <u>women</u> on the sub-tests of the Vocational Values Inventory in relation to their <u>fantasy-based</u> vocational selections. The "f" scores that have asterisks indicate

VALUES LINU			NOTT WOTT W	4 VIJUI (9. 9.		8 8
Sub-Tests		A	, r	E	MS	N	. v	Ē4
Altruism	E Þ	12.39 26.33	12.64 18.10	16.58 40.83	20.06 17.44	18.74 12.59	13.46 55.90	5.19**
Money	μÞ	8.92 6.92	8.23 20.10	6.69 33.65	5.12 22.63	7.79 19.36	9.73 49.10	1.59
Job-Freedom	εÞ	15.08 9.92	13.82 16.80	11.27 16.11	10.88 16.75	11.78 17.00	10.09 15.50	3.16*
Security	шÞ	7.62 32.00	6.27 14.50	10.27 14.65	9.00 16.75	9.39 16.64	8.09 11.10	2.60*
Self-Realization	u ⊳	22.2 3 2.08	20.64 4.9	19.53 6.19	19.59 6.56	20.61 12.91	18.36 14.10	.78
Prestige	εÞ	11.77 15.75	13.64 30.70	10.36 10.68	11.18 9.94	11.43 5.45	11.27 25.10	1.85
Control	εÞ	6.53 9.58	8.46 31.70	8.61 13.07	7.94 11.69	8.30 10.50	12.82 15.40	3.79**
Legend: A = art; selling: icance is "F" score level of	J = Col s ind ss wi	Journal1s umn 8 1s icated by thout as idence.	sm; T = t the "F" y *; the terisks a	ceaching; obtained 1% level ire not s	SW = S in the of con ignific	ocial wor analysis fidence i ant at ef	k; N = 1 3 of var 1s indica 1ther the	nursing; and S = lance; 5% signif- ated by **. The e 1% or the 5%

TABLE 12

sub-test scores of vocational groups that are significantly different at the 1 per cent and 5 per cent level of confidence. The sub-tests that are different among the selected vocations are:

1. Altruism--Those that select Social Welfare and Nursing have higher Altruism scores at the 1 per cent level of confidence than those that select Selling, Journalism, and Artistic Work.

2. Job-Freedom--Those that select Artistic Work have greater Job-Freedom scores at the 5 per cent level of confidence than those who select Nursing, Teaching, Social Welfare, and Selling. The ones selecting Journalism have greater Job-Freedom scores than those selecting Social Welfare and Selling.

3. Security--The aspiring Teachers and Nurses have greater scores on the Security sub-test at the 5 per cent level of confidence than those selecting Journalism.

4. Control--Students selecting Selling as the prospective vocation have greater scores on the Control sub-test at the 1 per cent level of confidence than all the other selected vocations.

The sub-tests that are not significantly different among the selected vocations are: Money, Self-Realization, and Prestige.

The hypothesis that there are no significant differences in the mean sub-test scores on the Vocational Values Inventory among women planning to enter different vocations on a fantasy level can be rejected at the 1 per cent level of confidence for Altruism and Control, and can be rejected at the 5 per cent level of confidence for Job-Freedom and Security. This hypothesis, that there are no differences among the mean scores of the sub-tests for fantasy selected occupations, can be accepted for the sub-tests of Money, Self-Realization, and Prestige.

Table 13 shows the means and variances of the scores of the <u>men</u> on the sub-tests of the Vocational Values Inventory in relation to their <u>fantasy-based</u> vocational selections. The "f" scores that have asterisks indicate sub-test scores that are significantly different among the selected vocations at the 1 per cent and 5 per cent levels of confidence. There are four sub-tests that have significantly different mean scores among those selecting different vocations. They are:

1. Altruism--The people selecting Social Welfare on the basis of fantasy have greater Altruism scores at the 1 per cent level of confidence than all other selected vocations with the exception of Teachers and Entertainment people. Those selecting Teaching have greater Altruism scores than those selecting all other vocations with the exception of those selecting Entertainment and Selling.?

2. Money--The aspirants for Managerial positions have greater scores on the Money sub-test at the 1 per cent level of confidence than those in Social Welfare and Teaching. Those wishing to go into Medicine have greater Money scores

MEANS	ANT ALUE	VARIF S INVE	NNCES (INTORY	JF THE IN REI	SCORES	TO THE	HE MEN	ON THE VTASY-F	I SUB-1 BASED V	TESTS C	JF THE NAL SE	VOCATIONAL LECTIONS
		2	m	t	ſ	9	2	ω	6	10	11	12
sub-Tests		ы	E4	MS	Ш	щ	ENG	Ψ	S	Ľ.	DK	
Altruism	εÞ	11.79 42.34	14.56 18.37	15.31 42.40	9.81 26.56	9.24 20.28	8.35 22.40	8.35 22.60	10.86 42.33	9.07 26.64	8.83 29.61	5.30**
Money	۳Þ	10.27 43.14	6.91 24.22	8.62 20.33	12.81 22.65	12.02 28.27	11.19 34.28	13.48 25.73	11.10 45.10	12.00 24.14	11.50 21.55	3.38**
Job- Freedom	εÞ	13.07 12.38	10.96 19.00	13.85 21.67	13.67 17.15	12.31 22.61	12.78 29.61	10.83 13.55	12.43 21.70	15.47 9.14	12.08 9.00	1.90
Security	۳Þ	7 .2 9 18.85	15.93 23.29	9.54 14.00	10.10 36.40	10.71 32.02	9.51 14.67	8.26 38.59	9.67 34.75	9.53 24.14	10.50 54.64	1.16
Self-Real- ization	۳Þ	19.00 10.77	18.06 13.36	18.39 7.33	17.57 9.80	17.57 9.54	20.19 11.22	17.08 20.45	16.76 11.50	18.67 16.71	19.58 4.82	2. 63 * *
Prestige	E >	15.00 20.15	10.75 16.19	9.92 21.42	11.57 28.90	11.33 13.85	11.73 22.67	12.43 26.82	11.57 26.80	9.27 10.50	12. 75 20.64	1.85
Control	шÞ	8.93 14.3 8	11.09 9.77	8.23 25.58	9.29 9.65	10.52 14.07	10.16 17.67	12.91 17.45	11.62 17.45	9.60 19.57	8.42 11.36	2.70**
Legend: E Er ar f1	= er JG = l col lalys denc	itertal engine umn or is of e is i nt at	lnment sering le m = variar ndicat	T = T M = n mean z mean z fed by	teachtr manager and V = signi **. T t% or t	ig; SW ial; SW = varis ficanc The "F' the 5%	= soc 3 = soc ance. (score level	lal wor lling; Column indicat ss with of cor	$F_{F} = f_{C}$ 12 1s sed by fout as	= med1 brestry "F" of *; the terisk	/; DK = /; DK = otained : 1% le : are	<pre>B = business; don't know. in the vel of con- not sig-</pre>

TABLE 13

than Teachers. Those selecting Business have greater Money scores than Teachers and those selecting Forestry have greater scores on the Money sub-test than Teachers.

3. Self-Realization--The <u>men</u> who want to enter the Engineering profession score higher on the Self-Realization sub-test at the 1 per cent level of confidence than those wishing to enter the fields of Managerial work and Selling.

4. Control--The <u>men</u> wishing to enter the Managerial area score higher on Control at the 1 per cent level of confidence than those selecting Medicine, Entertainment, Don't Know, and Social Work.

The null hypothesis in relation to Altruism, Money, Self-Realization, and Control can be rejected because of their significant differences in the sub-test scores of those selecting certain vocations. The null hypothesis can be accepted in the case of Job-Freedom, Security, and Prestige, since these sub-test scores among the various vocations are not significantly different.

Table 14 shows the means and variances of the scores of the <u>women</u> on the sub-tests of the Vocational Values Inventory in relation to their <u>reality-based</u> vocational selections. The "f" scores that have asterisks indicate sub-test mean scores that are significantly different among the selected vocations at the 1 per cent and 5 per cent levels of confidence. There are three sub-tests that have significantly different mean scores among those selecting different vocations. They are:

		2	m	. 7	ц Г	9	2	8
Sub-Tests		A	٦ 1	H	MS	Z	S	Ľ4
Altruism	٤>	12.78 42.70	12.57 18.29	17.09 30.40	18.45 29.52	18.78 26.30	14.50 25.83	2.86*
Money	εÞ	8.56 5.03	8.43 26.62	6.66 24.47	7 .22 36 .1 9	6.78 19 .2 4	7.80 14.17	. 48
Job-Freedom	₽≻	14.00 17.00	14.43 21.28	11.42 17.36	11.22 20.20	10.95 19.24	12.00 26.00	1.30
Security	μŅ	8.78 26.69	5.86 9.48	9.8 2 19.66	8.67 24.75	9.39 14.02	7.90 11.88	1.42
Self-Realization	۳Þ	21.67 4.25	20.29 5.24	19.59 5.84	19.44 5.53	20.00 2.82	20.50 4.55	1.65
Prestige	₽≻	11.89 21.36	15.57 24.29	10.66 9.69	11.22 8.95	10.33 8.11	10.20 18.62	3.11*
Control	εÞ	6.77 10.95	7.00 23.67	8.62 14.77	7.33 12.00	7.67 11.29	11.90 26.10	2. 43*
Legend: A = art; selling. ficance The "F" the 5% le	J = Col is in score	journal1 umn 8 1s dicated 1 s withou of confic	sm; T = the "F" by *; the t aster1: dence.	teaching obtained a 1% leve sks are r	SW = so I in the Pl of cor	octal wor analysts ifidence ificant a	rk; N = n s of vari is indic t either	ursing; and S = ance; 5% signi- ated by **. the 1% or

TABLE 14

.

1. <u>Altruism</u>--The <u>women</u> students who selected Nursing, Social Welfare, and Teaching vocations based on reality, had greater Altruism scores at the 5 per cent level of confidence than those selecting Selling, Journalism, and Artistic work.

2. Prestige -- The women selecting Journalism on the basis of reality, had greater Prestige scores at the 5 per cent level of confidence than those selecting Artistic work, Social Welfare, Teaching, Nursing, and Selling.

3. Control--The <u>women</u> selecting Selling as their reality-based vocation scored higher on the Control sub-test at the 5 per cent level of confidence than all the other selected vocations.

There were no significant differences in the sub-test scores of Money, Job-Freedom, Security, and Self-Realization among the various selected vocations.

The null hypothesis in relation to the scores of the <u>women</u> selecting vocations based on reality, can be rejected because significant differences were found in the sub-test scores of Altruism, Prestige, and Control.

The null hypothesis can be accepted in the case of Money, Job-Freedom, Security, and Prestige, as there apparently were no significant differences in the scores of these sub-tests in relation to the selected vocations.

Table 15 shows the means and variances of the scores of the <u>men</u> on the sub-tests of the Vocational Values Inventory in relation to their reality-based vocational selections.

MEANS VAI	AND	VARIA INVEN	NCES OI TORY II	F THE S N RELAS	SCORES FION TC	OF THE) THEIF	REALI	N THE TY-BAS	SUB-TE	STS OF ATIONA	THE V L SELE	DCATIONAL CTIONS
		5	3	4	л Г	9	7	8	6	10	11	12
Sub-Tests		ы	H	SW	МD	щ	ENG	Ψ	S	۴ų	DK	ſĿı
Altruism	£ >	11.43 56.33	13.71 23.23	13.60 52.55	10.59 14.44	9.07 27.73	8.39 26.89	9.85 24.96	11.68 34.50	9.19 25.53	7.87 27.14	3.77**
Money	μŅ	9.86 59.50	7.61 23.65	9.60 30.44	12.29 16.50	12.43 29.44	12.53 30.77	11.39 33.72	10.95 37.50	11.56 20.27	12.13 19.71	2.84 * *
Job- Freedom	₽≻	11.14 10.17	12.07 20.13	13.50 19.78	13.41 14.56	13.33 2 7.07	12.64 17.57	15.38 11.88	12.47 28.05	14.75 11.40	12.73 23.93	0.95
Security	u >	8.00 18.67	11.17 25.60	7.30 9.11	9.18 32.69	10.55 29.93	9.17 18.49	8.08 41.36	9.05 23.50	10.88 20.53	9.80 39.79	1.27
Self-Real· ization	۲ ۲	19.29 4.67	18.34 14.80	19.20 6.44	18.12 9.13	17.43 13.68	19 .22 15 . 11	18.08 17.68	16.84 9.39	19.31 9.33	19. 40 6.86	1.36
Prestige	۳Þ	14.14 30.50	11.00 18.35	11.60 34.11	12.47 30.31	11.29 15.49	12.42 23.06	12.31 25.36	10.37 22.83	8.88 9.33	12.00 16.29	1.41
Control	εÞ	9.71 5.67	9.61 12.80	9.30 18.11	8.47 5.69	10.31 19.15	10.08 20.94	12.38 18.12	12.89 16.00	9.2 5 13.80	9.60 8.43	2.57**
Legend: E Er Er f	$ \begin{array}{c} = \\ \text{VG} = \\ 1 \\ \text{CO.} \\ 1 \\ 1 \\ \text{CO.} \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ $	nterta: engine lumn or sis of se is j ther th	<pre>inment eering ne m = variat indicat</pre>	T = 1 M = n mean 2 nce; 59 ted by red by	teachir nanager and V = signi **. 7 5% lev	lg, SW rial; S - varia - varia fhe "F" vel of	= soci = sel nce. C scores confid	al wor ling; column ndicat withc	k; MD F = fc 12 1s ied by ut ast	= medi restry "F" ob *; the erisks	cine, $DK = 1$ tained tained are not	<pre>B = business; don't know. in the vel of con- ot significant</pre>

TABLE 15

The "f" scores that have asterisks indicate sub-test scores that are significantly different among the selected vocations at the 1 and 5 per cent levels of confidence. There are three sub-tests that have significantly different mean scores among those selecting different vocations. They are:

1. Altruism--The <u>men</u> selecting Teaching and Social Welfare have greater scores on the Altruism sub-tests at the 1 per cent level of confidence than those selecting Engineering and the Don't Know category.

2. Money--The <u>men</u> selecting Engineering and Business have greater scores on the Money sub-test at the 1 per cent level of confidence than those selecting Teaching.

3. Control--Those <u>men</u> selecting Selling have greater Control sub-test scores at the 1 per cent level of confidence than those selecting Social Welfare, Forestry, and Medicine. Those selecting Managerial work have greater Control sub-test scores than those selecting Medicine.

There are no significant differences among the subtest scores of Job-Freedom, Security, Self-Realization, and Prestige. Consequently, the null hypothesis can be accepted in this case. However, Altruism, Money, and Control are significantly different among some of the vocations, so that the null hypothesis in this case can be rejected.

HYPOTHESIS B. THERE ARE NO SIGNIFICANT DIFFERENCES IN THE MEAN SUB-TEST SCORES OF THE VOCATIONAL VALUES INVENTORY AMONG STUDENTS COMING FROM DIFFERENT SOCIO-ECONOMIC LEVELS.

Question 3 of the Questionnaire was used to help test this hypothesis. The students were asked to state whether their family was in the upper class, middle class, working class, or lower class. In analyzing the data it was found that the lower class could not be included in the results because only two of the men selected lower class as their socio-economic level and none of the women selected lower class as their socio-economic level.

Table 16 shows the means and variances of the <u>men</u> on the sub-tests of the Vocational Values Inventory in relation to their socio-economic status. Among the <u>men</u>, only one subtest significantly differentiated those who selected the upper, middle, and working class. At the 1 per cent level of confidence the <u>men</u> who selected the upper class as their Socio-economic level had higher mean scores on the Money Sub-test than the middle or working class.

The remaining six sub-test scores of the <u>men</u> did not significantly differentiate those who selected the upper, middle, and working classes, either at the 1 or the 5 per cent level of confidence.

Table 17 shows the means and variances of the <u>women</u> On the sub-tests of the Vocational Values Inventory in relation to their socio-economic status. On the 1 per cent level of confidence the <u>women</u> selecting the upper class as their socio-economic level had higher scores on the Prestige Sub-test than those selecting the middle and working class.

The remaining six sub-test scores of the <u>women</u> did not Significantly differentiate those who selected the upper, **mid**dle, and working classes, either at the 1 or the 5 per Cent level of confidence.

TABLE 16

MEANS AND VARIANCES OF THE SCORES OF THE MEN ON THE SUB-TESTS OF THE VOCATIONAL VALUES INVENTORY IN RELATION TO THEIR SOCIO-ECONOMIC STATUS (THEIR ANSWERS TO QUESTION 3 ON THE QUESTIONNAIRE)

	1	2	3	4	5
Sub-Tests		Upper	Middle	Working	F
Altruism	m V	8.08 31.25	10.39 30.62	10.95 35.47	1.45
Money	m V	14 .2 3 18 .2 5	9.01 34 .2 5	10.26 31.49	5.67**
Job-Freedom	m V,	11.00 15.00	12.73 20.19	1 2.9 6 22.34	1.04
Security	m V	8.77 43 .5 8	9.77 25.69	10.34 29.26	.62
Self-Realization	m V	17.31 11.75	18.42 12.96	18.61 12.33	•74
Prestige	m V	13.15 22.83	11.52 23.49	10.73 16.05	1.81
Control	m V	11.46 18.67	10.57 17.02	9.51 14.38	2.41

Legend: Upper is the highest designated socio-economic class, Middle is the next highest socio-economic class, and Working is the lowest of the three socioeconomic classes. In Column 1 are the means and variances of the sub-tests. Column 5 is the "F" obtained in the analysis of variance. 5% significance is indicated by *; and 1% significance is indicated by **. The "F" scores without asterisks are not significant at either the 1% or 5% level of confidence.

TABLE 17

MEANS AND VAR	RIANCES OF	THE SCORES	OF THE WO	OMEN ON THE
SUB-TESTS	OF THE VO	CATIONAL VA	LUES INVE	NTORY IN
RELATION	TO THEIR	SOCIO-ECONO	MIC STATUS	S (THEIR
ANSWERS	S TO QUESI	TION 3 ON THE	E QUESTIO	NNÁIRE)

	1	2	3	4	5
Sub-Tests —		Upper	Middle	Working	F
Altruism	m V	13.00 47.60	15.88 40.77	16.36 23.50	1.22
Money	m V	7.64 23.10	8.19 32.50	7.20 32.46	• 35
Job-Freedom	m V	12.64 14.90	11.18 18.11	1 2. 68 22.25	1.70
Security	m V	7.64 15.10	9.43 18.04	9.2 0 23.67	.88
Self-Realization	m V	20.55 5.50	19.72 7.57	19.40 4.50	.72
Prestige	m V	14.45 19.90	10.85 14.47	9.92 15.17	5.48**
Control	m V	8.00 9.80	8.75 14.67	7.48 14 .2 9	1.29

Legend: Upper is the highest designated socio-economic class, Middle is the next highest socio-economic class, and working is the lowest of the three socioeconomic classes. In Column 1 are the means and variances of the sub-tests. Column 5 is the "F" obtained in the analysis of variance. 5% significance is indicated by %; and the 1% significance is indicated by **. The "F" scores without asterisks are not significant at either the 1% or 5% level of confidence. HYPOTHESIS C. THERE ARE NO SIGNIFICANT DIFFERENCES IN THE MEAN SUB-TEST SCORES OF THE VOCATIONAL VALUES INVENTORY AMONG MALE AND FEMALE STUDENTS.

Table 5 and Table 7, previously mentioned in this chapter, show the means and standard deviations of the men and women. The data collected in these tables were then processed by means of the "t" test to determine whether there are significant differences in the sub-test scores of the men and women in this study.

Table 18 shows the results of the "t" test mentioned in the preceding paragraph. With the exception of the sub-tests of Security and Prestige, all the remaining five sub-tests are significantly different at the 1 per cent level of confidence.

The following are the directions these differences take:

- 1. Altruism--higher for women.
- 2. Money--higher for men.
- 3. Job-Freedom--higher for men.
- 4. Self-Realization--higher for women.
- 5. Control--higher for men.

Questions 4 through 10 were included in the questionnaire to aid in the investigation of the possibility of differences in the sub-test responses of the men and women. Since this is an exploratory study, the questions were accepted on the basis of face validity and the results will be generally speculative.

|--|

A COMPARISON OF THE MEANS OF THE SCORES OF THE MEN AND WOMEN ON THE SUB-TESTS OF THE VOCATIONAL VALUES INVENTORY

Sub-Tests	t Scores
Altruism	9.16* W
Money	5.63* M
Job-Freedom	2.62* M
Security	.41**
Self-Realization	5.08* W
Prestige	.92**
Control	4.06* M

* Significant at the .01 level of confidence.

W= The mean scores are higher for women.

Table 19 indicates the comparison of male and female responses to Questions 4 through 10 on the questionnaire Which can be seen in Appendix B. The purpose of Questions 4 through 10 was to complement Hypothesis B, the testing of differences between sexes. Consequently, the questions Will not be analyzed in detail; only the similarities and differences and the direction of these differences will be reported.

The responses to Questions 4, 9, and 10 were not significantly different for men and women. They both felt the

TABLE	E 19

Question t Scores 4 .927*** 5 2.71* 2.38** 6 7 3.56× 8 3.33* 9 .00*** 1.73*** 10

COMPARISON OF MALE AND FEMALE RESPONSES TO QUESTIONS 4 THROUGH 10 OF THE QUESTIONNAIRE

* Significant at the 1 per cent level of confidence. ** Significant at the 5 per cent level of confidence. *** Not significant.

Same concerning taking leadership in a group, accepting leadership more often than rejecting it. Men and women equally agreed that more people are more inclined to help themselves than help others and they also were similar in their feeling that they would more often prefer to make decisions for themselves than have others make it for them.

The differences that were evident were in Questions 5, 6, 7, and 8. On Question 5, at the 1 per cent level, women found it more important to be well liked than men. On Question 6, at the 5 per cent level, more men found it easier to make friends than women. On Question 7, at the 1 per cent level, it bothered women more then men to give orders to other people. On Question 8, on thelper cent level, it appears that women are more bothered with taking orders than men.

Summary

The analysis of the <u>Problems Relevant</u> to this study and the analysis of the data relevant to the investigation of the <u>Null Hypotheses</u> of this study have been presented in this chapter.

In analyzing the items according to men, women, and total, it was found that women did not respond to the sub-test items in the same manner as the men and the total group. Six items were found for the total group which did not measure the properties which they were designed to measure. For the women, fourteen items were found which did not measure the property they were supposed to measure, and in a similar fashion, six were found for the men.

Reliability of the instrument, the Vocational Values Inventory, was tested by Hoyt's technique and found to be acceptable for meaningful analysis.

Concurrent validity was tested by means of Question 13 On the questionnaire and found to be reasonably adequate. Validity was also incorporated into the testing of the three hypotheses and was found to be reasonably adequate; the test did differentiate various vocational groups according to their mean scores on the sub-tests. The null hypothesis that there were no significant differences in the mean sub-test scores of the Vocational Values Inventory among students selecting <u>fantasy-based</u> occupations may be rejected for <u>women</u> at the 1 per cent level of significance for the sub-tests of Altruism and Control. At the 5 per cent level it may be rejected for the sub-tests of Job-Freedom and Security. The same null hypothesis can be accepted for the sub-test scores of Money, Self-Realization, and Prestige, since they are not significantly different among the selected occupations.

The null hypothesis that there were no significant differences in the mean sub-test scores of the Vocational Values Inventory among students selecting <u>reality-based</u> Occupations may be rejected for <u>women</u> at the 5 per cent level of significance for the sub-tests of Altruism, Prestige, and Control. The same null hypothesis can be accepted for the sub-test scores of Money, Job-Freedom, Security, and Self-Realization, since they are not significantly different **among** the selected occupations.

The null hypothesis that there were no significant differences in the mean sub-test scores of the Vocational Values Inventory among students selecting <u>fantasy-based</u> occupations may be rejected for <u>men</u> on the sub-tests of Altruism, Money, Self-Realization, and Control. The same null hypothesis can be accepted in the case of Job-Freedom, Security, and Prestige, since these sub-test scores among the various occupations are not significantly different.

The null hypothesis that there were no significant differences in the mean sub-test scores of the Vocational Values Inventory among students selecting <u>reality-based</u> occupations can be rejected for <u>men</u> on the sub-tests of Altruism, Money, and Control. The same null hypothesis can be accepted for the sub-tests of Job-Freedom, Security, Self-Realization, and Prestige.

The null hypothesis that there were no significant differences in the mean sub-test scores of the Vocational Values Inventory among students coming from different <u>socio-economic</u> levels can be accepted for the <u>women</u> on all the sub-tests with the exception of the sub-test of Prestige. At the 1 per cent level the same null hypothesis can be rejected for Prestige.

The null hypothesis that there were no significant differences in the mean sub-test scores of the Vocational Values Inventory among students coming from different <u>socio-</u> <u>economic</u> levels can be accepted for the <u>men</u> on all the subtests with the exception of the sub-test of Money. At the 1 per cent level the same null hypothesis can be rejected for Money.

The null hypothesis that there were no significant differences in the mean sub-test scores of the Vocational Values Inventory among male and female students can be rejected for all the sub-tests with the exception of Security and Prestige. At the 1 per cent level of confidence Altruism is significantly higher for women than men, Money is higher for men than women, Job-Freedom is higher for men than women, Self-Realization is higher for women than men, and Control is higher for men than women.

A further reinforcement of the concept that men and women differ in certain values was suggested by the results of the "t" test between item 4 through 10 of the questionnaire. Significant differences were found in four of the seven items. These seven items which are generally related to the concepts measured by the Vocational Values Inventory are as follows: (1) the frequency of accepting leadership in a group, (2) the importance of being well liked by different kinds of people, (3) the ability to make friends, (4) the effect of giving orders to others on the individual, (5) the effect of accepting orders from others on the individual, (6) the opinions one has concerning helping himself or helping others, (7) the preference one has of making decisions for himself, or having others make these decisions for him.

The concept of congruence in relation to Ginzberg's theory of "Crystallization" was explored. The findings were similar to Ginzberg's only in the case of the men. The majority of the women did not exhibit congruence in their fantasy and reality selections of vocations.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS FOR FURTHER RESEARCH

There were five aspects of the problem of Values and Vocational Choice under investigation in this study: (1) Is the Inventory used in this study to measure values reliable and valid? (2) Are fantasy and reality-based vocational objectives of students congruent? (3) Will students planning to enter different occupations vary in values as measured by the Vocational Values Inventory? (4) Do male and female students have different values as measured by the Vocational Values Inventory? (5) Will students from different socio-economic levels express different values as measured by the Vocational Values Inventory?

Four hundred and thirty-six students, 261 males and 175 females, enrolled in the Basic College of Michigan State University participated in this study. They were administered the Vocational Values Inventory and a specially designed questionnaire in the spring quarter of 1959.

Summary

The Reliability and Validity of the Vocational Values Inventory

Reliability .-- The reliability of the Vocational Values

Inventory was estimated in various ways, each of which reinforced the viewpoint that the test is reliable.

Hoyt's test, which produces a self-correlation coefficient, indicated that the average coefficient of reliability of the sub-tests of the Vocational Values Inventory was.82. The seven correlation coefficients derived from Hoyt's formula ranged from .69 to .91. These are within the limits of good estimates of test reliability, with implications that retesting would yield similar results.

The responses to the items by the men yielded only six that were not related to the total score. Thus, for the men, the item-validity was good. For the total score it was similarly good. However, for the women, fourteen items were found to be uncorrelated with the total score. This indicates the possibility that women do not respond in the same way as men to the same values or questions on the Vocational Values Inventory. The possibility exists here that a different test should be constructed for women.

<u>Validity</u>.--Exclusive of item-validity, the Vocational Values Inventory was validated by the method of estimating the differentiating power of the test, and correlating the Vocational Values Inventory against an external criterion of similar content matter.

Are Fantasy and Reality-Based Vocational Selections of Students Congruent

The investigation of Ginzberg's (63) theory of "Crystallization," was facilitated by means of item 11 and item 12 of the specially designed questionnaire,¹ which are respectively fantasy and reality-based vocational selections. Empirically comparing men and women, it was found that the fantasy and reality-based vocational selections of the men were generally congruent. The women's selections based on reality, were not the same as their selections based on fantasy.

The implications related to these findings are many. The men had a more realistic or practical concept of what their future vocation was to be because of the role they are taught to play from childhood to adulthood. The male in our society takes on many roles before he reaches adulthood. The direction these roles take depend on many factors, but they usually culminate in the man taking on the role of breadwinner. This role, being the head of a family, limits the fantasy of men to vocations where they can make a living. Consequently, the men that do go to college, usually go for more materialistic reasons than the women. The women, despite their emancipation, are taught that their roles are ancillary to men. Thus, the

¹See Appendix B.

idea of being the sole wage earner is secondary to their role as a mother and a housewife. Not bound by earning a living, the women can fantasize in an unlimited fashion. However, since these women are intelligent and aware of reality, they know that there are certain vocations which they can function in without difficulty and in which competition is at a minimum. Thus, although they can fantasize entering different vocations, they also know where they can function adequately and realistically.

Will Students Planning to Enter Different Vocations Vary in Values as Measured by the Vocational Values Inventory

This hypothesis was tested through the statistical processing of item 12 on the questionnaire, which asks the reality-based vocational selections of the men and wo men.

Among the women, those who selected the vocations of Nursing, Social Welfare, and Teaching had higher Altruism scores than those selecting Selling, Journalism, and Artistic work. The women selecting Journalism had higher Prestige scores than those selecting Artistic work, Social Welfare, Teaching, Nursing, and Selling. Those women selecting Selling scored higher on the Control sub-test than those selecting all the other vocations. Money, Job-Freedom, Security, and Self-Realization sub-test scores were not significantly different among all the selected vocations.

Among the men, Altruism, Money, and Control were the sub-test scores that were significantly different for the

various vocational areas. The men selecting Teaching and Social Welfare had higher scores on the Altruism sub-test than those selecting Engineering and the Don't Know category. The men selecting Engineering and Business had higher scores on the Money sub-test than those selecting Teaching. Those men selecting Selling had greater Control sub-test scores than those selecting Social Welfare, Forestry, and Medicine. Those selecting Managerial work had greater sub-test scores of Control than those selecting Medicine.

The following are the conclusions that can be derived from the above:

a. Among the men, only three sub-tests significantly differentiate vocations, that of Altruism, Money, and Control. The others, Job-Freedom, Security, Self-Realization, and Prestige are not significantly different for all the selected vocations.

b. Among the women, Altruism, Prestige, and Control differentiate certain vocations. Money, Job-Freedom, Security, and Self-Realization are not significantly different for all the selected vocations.

c. The sub-test scores of Altruism and Control, significantly differentiate the same vocations for men and women.

d. Certain sub-test scores differentiate certain vocations, while others do not.

Do Male and Female Students Have Different Values as Measured by the Vocational Values Inventory

The mean scores and results of the method of itemanalysis indicate that men and women score differently on the Vocational Values Inventory.

Fourteen items were found for the women which do not measure the values the item was supposed to measure. For the men, only six such items were found. Thus it was apparent that women interpret the same items differently than men.

The mean scores on the Vocational Values Inventory were higher for women on Altruism than they were for men. The men had higher mean scores on the Money sub-test than the women. Job-Freedom scores were higher for men than for the women. Self-Realization scores were higher for women than for men. The men scored higher on Control than did the women.

Thus, it can be seen that men and women have significantly different scores on five of the sub-tests of the Vocational Values Inventory, but do not differ in their valuation of Security and Prestige.

Will Students from Different Socio-Economic Levels Express Different Values as Measured by the Vocational Values Inventory

Only two sub-test scores are different among the different socio-economic levels, Money differentiated the upper class for the men, and Prestige differentiated the upper class for the women. No other sub-test scores were significantly different for any of the other socio-economic values. It may be concluded from the above, that values or sub-test scores are the same for all socio-economic levels, except for the upper class. Except for Prestige for the women, and Money for the men, this class also does not have significantly different scores among the sub-tests of the Vocational Values Inventory. This would tend to indicate that people going to college, despite their different economic backgrounds, have similar values.

Conclusions

The conclusions of this study suggest the following:

 The Vocational Values Inventory is reliable insofar as the limitations of this study is concerned.
 Similar results should be obtained in a retest of the same population.

2. The majority of the 84 items of the Vocational Values Inventory are valid in that they correlate well with the criterion of the total score of each of the subtests. Six items can be rejected for the men as being poor, and fourteen items can be rejected for the women as being poor. The difference between the number of such items found for men and women would seem to indicate that separate tests should be designed for men and women.

3. The results of a concurrent validation study showed that among women, Job-Freedom, Money, Security, and Self-Realization were not good differentiators of occupations selected. Only Altruism, Prestige, and Control significantly differentiated the various occupations selected by women. A possible reason for the former might be that these values are integral to the value system of most women in relation to their occupational selections.

4. Among men, Prestige, Job-Freedom, Security, and Self-Realization did not differentiate any of the selected occupations. Altruism, Money, and Control significantly differentiated some of the vocations. A possible reason for the former might be that these again could be the core values which men hold for all selected occupations. The implications of these findings are similar to the findings of Jacob (79) and Rosenberg (118), who also felt that there is a strong core of values that are relatively similar to all men in their selection of their future occupations.

5. Male and female students, within the limits of the occupational areas selected, appear to have similar values for the same occupational choice. This suggests that certain occupations, without regard to sex, require those entering them to have specific values for optimal functioning in that occupation.

6. Ginzberg's (63) theory of "Crystallization" appears to hold for the men, but not for the women. The reality and fantasy-based occupational selections of the men are fairly congruent, but for the women they are not. This might reflect the different roles that men and women are taught to accept in society. Men are taught to be wage

earners and heads of families, while women are taught to be mothers and housewives. Thus, while men have to be practical and realistic in selecting a vocation, women can fantasize about vocations that need not be financially remunerative.

7. Students from different socio-economic levels tend to achieve similar scores on the Vocational Values Inventory whether they are from the working, middle, or upper class. Only Money for the men and Prestige for the women help to differentiate the three socio-economic groups. The sample of each of the socio-economic groups indicates quite a disparity in size; the upper averaging 5 per cent, the middle averaging 70 per cent, and the working averaging almost 20 per cent of the total group. Thus, these findings of differences among the upper class group are open to question.

Implications for Further Research

The questions or items on the Vocational Values Inventory that were questionable, should be investigated in a more thorough manner. The six items that added very little to the total test reliability, should be discarded and others should be substituted if the authors wish to keep the number of items the same length as before.

Among the twenty items listed as poor, only the lowest correlated ones need be modified. After modifying and changing items to fit each of the values they are supposed
to measure, Hoyt's test should be run until there appears to be little improvement in reliability. The present reliability is adequate enough to require only a few test runs.

The inadequacy of the sample size of the socioeconomic group indicates a need for further study with the test on a stratified group; that is, equal samples of each of the socio-economic levels should be tested to insure more meaningful results.

The indication of similar values despite different socio-economic backgrounds among the students in this study point out that more research is needed in this area. Are there values which are similar to all levels of society, or do people who aspire to entering college specifically acquire these values? If they acquire these values as a result of association with other college students, then these values may be superficially integrated into their personality functioning and they can just as easily be relinquished in favor of other values.

The possibility of these students changing values, due to the influence of four years of college, would be clarified with a retest of these students upon graduation. This retesting, together with a replication of the entire study would give some indication of how stable these values are and which values are more deeply integrated into the students' personality structures. The problem of value differences among the sexes is extremely important. Do women manifest different values because of basic differences in personality due to physiological differences, or are societal mores and folkways the primary stimulus for their origin? If the societal influences are predominant, then value changes among the sexes which conform to specific changes in the contemporary mores and folkways of society would be expected. If the physiological influence is stronger than the societal influence, then it is possible to assume the values of men and women will remain in the same comparative state. This information would involve a longrange program, but would be worth the effort. Long-range vocational prediction would be possible, enabling educational institutions to plan ahead.

The possibility that certain vocations satisfy values which are related to that vocation should be explored by investigating the values of successful people in that vocation. Comparing these values with the values of students wanting to enter that particular vocation would enable the counselor to make fairly good predictions concerning vocational adjustment.

Since it is difficult to compartmentalize personality characteristics, it is obvious that values, which are personality characteristics also, cannot be viewed out of context. Thus, in observing that individuals have

values and vocational aspirations, we can also see that the same individuals manifest similar patterns of behavior in their over-all personality functioning. In effect, since values and vocational aspirations are integral personality characteristics, the mental and emotional homeostasis of the individual can also be studied through the evolution of these values and the concurrence of these values with the value satisfactions inherent in the vocation itself. These values are then a projection of one's personality characteristics, and the values can be utilized in the same way as the projective tests such as the Rorschach and Thematic Apperception Test.

It seems apparent that vocational choice is not just a chance occurrence, but dependent upon many factors and influences, among which are values. The recognition of the importance of values accompanied by insights into their origin, should facilitate the process of vocational choice and enable the counselor to function more adequately. The counselor then can help adults toward a greater degree of adjustment through a recognition of the forces affecting vocational choice. Not only must vocational choice and its influencing values be viewed as important elements to be met by the individual in his life's adjustment, but his natural capabilities should be utilized accordingly. The individual who can then adjust

his values to his vocational choice will then not only be a consciously whole person, but a valuable and productive member of society.

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APPENDIX A

VOCATIONAL VALUES INVENTORY

VOCATION VALUES INVENTORY

Developed by Leland Johnson, Stanley Singer, Valley Psychological Consultants, Sherman Oaks, California, and Buford Stefflre. Michigan State University, E. Lansing, Mich.

This inventory is given to help you answer the question, "What Do I Really Want From a Job?" Remember, different people will have different answers to this question. There are no right answers and no wrong answers, and therefore your score will be neither good nor bad, neither high nor low. However, your score, if you follow the directions properly, should help you understand yourself better and understand the meaning that work has for you. This may help you to select an occupation which will satisfy you. In this inventory you must make a choice between each pair of items. In some cases it will be hard to make a choice between the items because you will want to choose both items or neither. But, remember, you must make a choice. Work as rapidly as you can, and do not consider any one item too long.

DO NOT MARK THIS BOOKLET



I-You are planning your career and must make a decision about the kind of occupation for which you will train. The occupations you are considering are the same in every respect except as noted below. In each case indicate the occupation you would choose by marking A or B on the answer sheet.

1-JF-P	An occupation where you are free to decide how you should do your job.	A
	An occupation where you will be looked up to because of your work.	B
2-CP	An occupation where you will be a leader.	A
	An occupation where you will be famous.	B
3-CS	An occupation where you will make the final decision on impor- tant job matters.	A
	An occupation where you are assured of a regular income.	В
4-JF-A	An occupation where you can work more or less on your own.	A
	An occupation which helps others.	B
5-AM	An occupation that helps people get along well with each other.	A
	An occupation where you select a job mainly on the basis of in- come.	B
6-PM	An occupation where you will receive recognition because of your work.	A
	An occupation that is highly paid.	B
7-M-JF	An occupation where you may obtain many material possessions.	A
	An occupation where you do not have to work under supervision.	В

8-AP	An occupation which contributes to the public welfare.	A
	An occupation which will allow you to become a well-known person.	в
9-SR-C	An occupation which makes use of your talents.	A
	An occupation where you supervise others.	в
10-P-SR	An occupation where you will be given publicity in newspapers and magazines.	A
	An occupation which will absorb your interests.	В
11-SR-A	An occupation which you find very interesting.	A
	An occupation where you make sacrifices in the interests of others.	в
12-SC	An occupation that provides steady employment.	A
	An accupation where you are responsible for seeing that others do their work.	в
13-SR-M	An occupation where you can make use of your special talents.	A
	An occupation where there is a chance of becoming rich.	В
14-S-JF	An occupation where regular employment is guaranteed.	A
	An occupation where you can control your own working conditions.	в
15-A-JF	An occupation that benefits other people.	A
	An occupation where you set your own work standards.	В
16-MA	An occupation where you can become wealthy.	A
	An occupation where you can help people with their problems.	В
17-JF-C	An occupation where you can decide for yourself what kind of activities you will perform.	A
	An occupation where others will follow your example.	в

18-MC An occupation that has good financial rewards. Δ An occupation where you give direction to other people. R 19-C-SR An occupation where you take the lead in solving job problems. Α An occupation which allows you to use your best abilities. B 20-P-JF An occupation where you do things for which you will be admired. A An occupation where you can come and go as you please. B 21-CA An occupation where you can direct others in their work. A An occupation that serves humanity. B 22-SA An occupation where your job is secure. Δ An occupation where you contribute to the good of the community. B 23-PS An occupation that gives you prestige. A An occupation that insures year-round employment. В 24-SR-JF An occupation which holds your attention. A An occupation where you can determine your own method of working. В An occuption where you are in charge of the work to be done. 25-CS Α An occupation that provides a moderate but steady income. В An occupation that pays a lot of money. A 26-M-SR An occupation which gives you opportunities for self-expression. В An occupation where you can be your own boss. 27-JF-A Α An occupation that requires devotion to the welfare of others. В An occupation where you tell others what to do. Α 28-C-JF An occupation that does not require the help of others. В

29-SR-S	An occupation where you can do creative work.	A
	An occupation where people do not lose their jobs even during depressions.	в
30-MP	An occupation where you can become wealthy.	A
	An occupation which may give you high honors.	В
31-M-JF	An occupation where you are highly paid.	A
	An occupation where you decide when and where you will do your work.	в

II-You must make a choice between two jobs which have been affered you. They are the same in every respect except as noted below. In each case indicate the job you would choose by marking A or B on the answer sheet.

32-CM	A job where you persuade other workers to do things in a certain way.	A
	A job where you can achieve financial independence.	в
33-A-SR	A job that contributes to the welfare of people.	A
	A job where you perform activities for which you have a spe- cial preference.	в
34-AC	A job where the work is socially useful.	A
	A job where you can make decisions on how the work is to be done.	в
35-PC	A job where you will be recognized for your accomplishments.	A
	A job where you can reward others for doing their work well.	В
36-AS	A job whe re you help others.	A
	A job that has a good pension plan.	B

3 7-SP	A job which you are sure of keeping.	A
	A job where you are given awards in recognition of your work.	В
38-JF-SR	A job where you can control how hard you work.	
	A job in which the activities are especially satisfying.	B
39 -SM	A job where permanent employment is guaranteed.	A
	A job where you may acquire considerable personal wealth.	B
40-JF-S	A job where you decide for yourself what you do each day.	A
	A job where there will be no "lay offs."	B
4 1-AM	A job that provides needed services to the people of the com- munity.	A
	A job that is highly profitable.	В
42-S-SR	A job which provides continuous employment.	A
	A job where you can be enthusiastic about what you are doing.	В
4 3-PM	A job where you are known for outstanding accomplishments in your field of work.	A
	A job that is very well paid.	B
44- PA	A job where others are favorably impressed by the work you are doing.	A
	A job where you can help people who are less fortunate than yourself.	B
45-MC	A job where you can accumulate property as a result of your high earnings.	A
	A job where you decide who is going to be promoted.	B
46-JF-P	A job where people seldom tell you what to do.	A
	A job where you can make a name for yourself.	B

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47-SA	A job which you can keep until retirement.	A
	A job where you can "do good" for others.	B
48-PS	A job where you will be admired because of the work you do.	A
	A job with good retirement provisions.	B
49-SC	A job where you cannot be discharged.	A
	A job where you supervise others.	B
50-MS	A job where you can make large profits.	A
	A job where the nature of the work is clear for years ahead.	B
51-SR-M	A job which requires your creative thinking.	A
	A job where you have a big share in company earnings.	B
52-S-JF	A job where you work for a regular salary.	A
	A job where you are free to alter your work routine.	B
53-M-A	A job that offers a maximum financial return.	A
	A job that contributes to civic betterment.	B
54-SR-S	A job where you can do things for which you have a special liking.	A
	A job where you never have to worry about being fired.	B
55-JF-M	A job where you can decide when you will start and when you will quit work.	
	A job that may pay big cash bonuses.	B

III—You are working on a job where you have been given a chance to select which of two activities you will do. These two activities are exactly the same in every way except for the differences noted below. In each case, indicate which activity you would choose by marking A or B on the answer sheet.



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56-SR-C	An activity permitting you to express your feelings.	A
	An activity concerned with organizing and assigning the jobs to be done.	B
57-SR-P	An activity using your special knowledge and skill.	A
	An activity which will make you highly respected.	B
58-SR-A	An activity which carries out your own ideas.	A
	An activity that helps your fellow man.	B
59-P-JF	An activity which will make your opinion sought and valued.	
	An activity which allows you to control your working hours.	. A
60-CA	An activity involving planning work for others to do.	A
	An activity which helps other people.	B
61-CP	An activity by which you influence the way people do their work.	A
	An activity which will make you well-known.	B
62-AS	An activity which can assist those less fortunate than you.	A
	An activity which makes your job secure.	B
63-SP	An activity which assures you of working all year round.	A
	An activity which will make you associated with someone who is famous in your own line of work.	B
64-SR-JF	An activity which gives you opportunity for self-expression.	A
	An activity which you perform independently.	B
65-SM	An activity which has an outlook for continued steady em- ployment.	A
	An activity which will pay you good money.	В

66-JF-S	An activity which permits you to take days off whenever you wish.	A
	An activity which protects you from lay-offs.	B
67-A-JF	An activity which helps others solve their problems.	A
	An activity in which there are few controls over what you do.	B
68-M-JF	An activity that offers good financial rewards.	A
	An activity that is noted for the independent nature of the work.	B
69-AP	An activity which promotes the general welfare of society.	A
	An activity which will make your name well-known.	B
70-C-SR	An activity where you can manage the affairs of an organi- zation.	A
	An activity which uses your highly specialized talents.	B
71-P-SR	An activity which will make you famous.	A
	An activity at which you are expert.	B
72-A-SR	An activity that assists charitable causes.	A
	An activity where your own personal tastes are valued.	B
73-JF-C	An activity where you are the sole judge of your work.	A
	An activity where you are in control of a group of workers.	B
74-S-SR	An activity where the work is stable from year to year.	A
	An activity which lets you express your opinions and ideas.	B
75-MP	An activity which will make you rich.	A
	An activity which will give you a national reputation.	B
76-PA	An activity which may give you high honors.	A
	An activity where you can dedicate your life to helping others.	B

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I would rather be: (Mark column A if your answer is yes; Mark column B if your answer is no.)

77-CM	The boss than the one who makes the most money.	yes	no
78-SR-P	Talented than famous.	yes	no
79-AC	Of service to others than be the boss.	yes	no
80-PC	Well-known than be the boss.	yes	no
81-JF-SR	Free from supervision than skillful.	yes	no
82-MS	Well-to-do than be sure of keeping my job.	yes	no
83-M-SR	The one who makes the most money than the one who does his work best.	yes	no
84-C-JF	Be the leader than be independent.	yes	по

A B | A B | A B

APPENDIX B

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QUESTIONNAIRE

1.	Name
2.	Student Number
3.	In which of the four groups do you consider your family to be? Check one of the following: Upper Class Middle Class Working Class Lower Class
4.	How often do you find yourself taking a position of leadership in a group you are with? Check one of the following: Often Sometimes Occasionally Rarely Never
5.	How important is it to you for you to be well liked by different kinds of people? Check one of the following: Very important Fairly Important Fairly Unimportant Very Unimportant
6.	Would you say that you are the sort of person who finds it easier or harder to make friends than most people? Check one of the following: Easier About the Same Harder
7.	How much does it bother you to have to give orders to other people? Check one of the following: It bothers me very much It bothers me a little It doesn't bother me at all
8.	How much does it bother you to be given orders by someone else? Check one of the following: It bothers me very much It bothers me a little It doesn't bother me at all
9.	Would you say that most people are more inclined to help others, or more inclined to look out for themselves? Check one of the follow- ing: To help others To look out for themselves
10.	When you are in a group do you prefer to make the decisions yourself, or do you prefer to have others make the decisions? Check one of the following: Usually prefer to make decisions myself

Usually prefer to have others make decisions Not sure which I prefer

- 11. What business or profession (work or occupation) would you most like to go into?
- 12. What business or profession (work or occupation) do you realistically think you are most apt to go into?
- 13. With regard to your enswer to humber 12, to what extent do you feel that the following values would be satisfied by that occupation? Number them in the order of how you feel they relate to the occupation you choose, using 1 to indicate the value which would be most satisfiedbly this occupation, 2 to indicate the value which would be next most satisfied etc., using 7 to indicate the value least satisfied.
 - Altruism Money Job Freedom Security Self-Realization or creativeness in work Prestige Control over others
- 14. If your answer to number 11 is different than 12, then to what extent do you feel that the following values would be satisfied by that occupation? Number them in the order of how you feel they relate to the occupation you chose, using 1 to indicate the value which would be most satisfied by this occupation, 2 to indicate the value which would be next most satisfied etc., using 7 to indicate the value least satisfied.

Altruism Noney Job Freedom Security Self-Realization or creativeness in work Prestige Control over others

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APPENDIX C

LIST OF THE COEFFICIENTS

A list of the coefficients of men, women, and total group derived at through the short-form of the Tetrachoric Correlation method. The coefficients which have the asterisk are those which do not measure the characteristic the item is supposed to measure. They are not significantly different from zero at the 1 per cent level of confidence. COEFFICIENTS OF ITEM ANALYSIS FOR MEN

i tems				Values			
	Money	Job-Freedom	Security	Self-Realization	Prestige	Control	Altruism
1 JF-P	.06	46	09	11	•55	.16	- 08
2 C-P	.46	.37	.04	04	64.	53	21
ა - ა ო	60.	- .33	.63	.28	26	- .33	.14
4 JF-A	32	- 54	• • 1 4	.19	- 1 4	• 30	.84
л А – М	64.	.18	14 	•	0.0	02	71
6 P-M	•74	00.	•07	32	34	10	32
7 M-JF	- 29	.49	- <u>1</u> 3	10	00° •	- .18	.03
8 A-P	. 42	.18	- 35	39	. 50	•13	62
9 SR-C	- 08	24	.02	70	34	.20	.02
10 P-SR	17	• 13	.02	.60	*00.	21	10
11 SR-A	- 09	53	00.	37	00.	.20	
12 S -C	19	.17	56	28	.32	.50	18
13 SR-M	6 9.	.10	13	- 65	60.	.15	40
14 S-JF	0.00	•76	54	23	.23	31	14
15 A-JF	.26	. 62	06	. .33	.23	.05	76
16 M-A	72	36	.22	.39	00.	14	. 69
17 JF-C	17	59	32	03	.21	.42	.22
18 M-C	76	.02	- 30	06	.11	30	.22
19 C-SR	05 2	- 08	.10	.10*	07	52	.08
20 P-JF	.06	• 64	.06	19	22	- 09	- .36
21 C-A	0 0	00.	.05	.24	•13	50	.37
22 S-A	40	8.	- - -	.16	.40	.22	.37
23 P-S	40	19	• 48	.30	73	10	.16
24 SR-JF	20	.40	06	34	05	. 45	18
25 C-S	15	20	.75	.24	45	57	.23
26 M-SR	70	.10	.27	.60	.10	13	.02
27 JF-A	30	40	.15	0	08	07	.72
28 C-JF		D.	57	- 08	0-	76	-03 -
29 SR-S	J.O.•	29	10.	55	.40	09	03

COEFFICIENTS OF ITEM ANALYSIS FOR MEN--Continued

				Values			
Items	Money	Job-Freedom	Security	Self-Realization	Prestige	Control	Altruism
30 M-P	64	00.	22	.04	.53	10	.20
31 M-JF	51	•46	09	.15	08	09	10
32 C-M	. 65	02	- 02	.12	00.	57	47
33 A-SR	.10	.02	00.	.25	.02	02	62
34 A-C	.17	.03	02	00.	08	.37	45
35 P-C	- 32	- .06	.13	.15	41	*00.	• 41
36 A-S	.11	17	.46	16	14	.05	60
37 S-P	.11	.16	66	28	.57	00	18
38 JF-SF	۲ <mark>-</mark> .08	37	.05	.50	05	16	.16
39 S-M	. 61	• 33	76	54	47	.35	32
40 JF-S	.08	73	.70	.12	13	.17	.20
41 A-M	.77	.28	17	33	.02	02	67
42 S-SR	- 30	.15	30	.50	.10	26	00.
43 P - M	• 65	10	.28	33	49	21	03
44 P-A	34	60.	.14	.21	57	21	-75
45 M-C	- - 53	06	.02	• 14	.05	.39	.32
46 JF-P	.17	41	10	00.	.53	.14	05
47 S-A	34	.14	64	00.	.19	.19	.58
48 P-A	.06	21	.67	10	64	.20	*00.
49 S-C		.17	70	11	.10	.41	03
50 M-S	48	19	. 48	67.	00.	09	.11
5.1 SR-M	. 62	.20	.11	64	00.	00.	30
52 S-JF	.07	.42	50	.07	.20	.10	.19
53 M-A	 81	.05	04	.36	• 07	.06	.70
54 SR-S	.20	10	.53	- .33	10	38	02
55 JF-M	.58	57	15	27	10	.07	12
56 SR-C	21	14	05	- • 49	.18	.56	16
57 SR-P	.38	.11	02	73	.31	00.	14
58 SR-A	44	14	.14	20	19	00.	•74
59 P-JF	.16	.30	.42	04	61	38	10

Continued	
MEN	
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ОF	
COEFFICIENTS	

Items		Tok Hunordow	Convert 411	Values	Ducation		2
	Money	JOD-F'reedom	Security	Sell-Reallzation	rresulge	CONTROL	WSINJIH
60 C-A	26	10	•03	.32	14	40	.77
61 C-P	67.	.18	32	28	- 47	31	- .38
62 A-S	.20	26	.57	.03	12	06	.51
63 S - P	.12	.22	78	08	.35	.15	06
64 SR-JF	.24	.48	26	47	15	21	32
65 S-M	.50	.16	- .83	• 58	.23	.27	28
66 JF-S	- 30	53	 58	30	14	.06	.24
67 A-JF	.36	.58	60 	17	.05	07	60
68 M-JF	46	.48	04	- 26	00.	20	70.
69 A-P	. 60	.08	22	26	. 48	.06	72
70 C-SR	11	- 08	.42	.59	08	58	.08
71 P-SR	- .38	21	.21	. 61	50	.10	.10
72 A-SR	.20	.02	.18	.10*	.28	.07	.77
73 JF-C	11	44	17	- 06	07	. 47	.22
74 S-SR	12	.21	- .58	• 46	-07	.05	.02
75 M - P	49	.13	17	.10	.54	- 1.0	.14
76 P-A	40	14	.07	.19	56	26	.73
77 C-M	.38	02	.24	14	- 13	72	- 03
78 SR-P		.34	46	70	. 31	. 21	1/
79 A-C	.49	.23	09	48	.13	67.	<i>61</i>
80 P-C	.13	13	.12	19	72	•08*	.05
81 JF-SF	- .30	47	.21	. 67	.08	09	.18
82 M-S	72	- .33	. 67	.34	. .38	09	.23
83 M-SR	- 69	- 02	-22	. 63	- - 1]	ст <u>-</u>	.07
84 C-JF	02	.46	.05	23	18	40	20

COEFFICIENTS OF ITEM ANALYSIS FOR WOMEN

	Altruism	00.	47	04	.80	79	34	.50	. 83	00.	. 60	.50	04	90	07	94	.86	10	•53	00.	47	.77	.66	00.	10	.16	00.	.87	- C.C.	
	Control	60.	52	21	.05	31	00.		00.	.60	00.	. 32	.53	28	07	39	.23	.38	.67	44	32	70	.24	28	00.	37	.32	0 0 1 0		- 40
	Prestige	.43	.55	- .08	00.	- 16	34		. 45	- 20	40	10	22	20	0.0	26	.30	04	17	.10	36	.10	00.	55 55	20	- 22	08	0. 1	• • •	 04
Values	Self-Realization	20	- ,13	00.	00.	51	04	07	14	50.3	സ്. •	40	10	90	07	16	.50	04	• 34	. 47	00.	.28	.28	05	*00.	.07	.80	<u>م</u> د.) H H	
	Security	.27	23	.80	.39	.10	60.	.08	• - -	.28	.22	.70	- 45	.16	י 5 ני	16	17	04	·07	10	12	. 25	31	.57	24	.50	10	0 0		0.
	Job-Freedom	46	.43	- .38	60	.30	60.	.10*	.10	 28	.18	30	00.	07	.59	.35	19	- 46	17		.82	.02	22	00.	.38	24	.30	0 0 1		• + + +
	Money	.20	.40	28	- 30	. 60	• <u>7</u> 3	- 85 - 85	.48	• • •	45	57	. 2 3	58	00.	.76	*70.	04	.000	.40	. 26	40	35	00.	00.	00.	*00.			31
Items		1 JF-P	2 C-P	С-S С	4 JF-A	5 A-M	6 P-M	₹N-JF	8 A-P	9 SR-C	10 P-SR	11 SR-A	12 S-C	J 3 SR-M	14 S-JF	15 A-JF	16 M-A	17 JF-C	18 M-C	1.9 C-SR	20 P-JF	21 C-A	22 S-A	23 P-S	24 SR-JF	25 C-S	26 M-SR	27 JF-A		0-40 A2

COEFFICIENTS OF ITEM ANALYSIS FOR WOMEN--Continued

			Λ	alues			
רפשמ ד	Money	Job-Freedom	Security	Self-Realization	Prestige	Control	Altruism
30 M-P	75	00.	-04	.15	-24	.23	۲. ۲.
31 M-JF	•	67.	- 20	10	0.0	.100	100
32 C-M	.81	- .18	.14	03	04	77	23
33 A-SR	.71	.06	40	*00.	.23	- 20	- 90
34 A-C	.53	.16	09	.15	.03	*60.	- .68
35 P-C	.100	00.	.35	.05	. 		.47
36 A-S	. 40	11	.06.	 34	.18	22	90
37 S-P	09	.22	88	50 10	.52	.29	07
38 JF-SF	120	45	00.	.40	.50	.24	.15
39 S-M	. 64	.07	51	12	.19	19	58
740 JF-S	.10	- .55	.63	14	.19	00.	- 0.7
M-A 11	. 48	.07	.20	24	.04	- 35	98
112 S-SR	40	21	*00.	. 60	.20	- 20	.40
43 P-M	.34	09	• 0 ₇ 1	30	- 33	03	 46
44 P-A	70	- .36	.30	e. W	40		.91
45 M-C	. 83	.30	.03	00.	- .09	. 68	.24
46 JF-P	04	- .38	13	.10	.64	.10	05
47 S - A	40	.20	24	.26	03	.04	.80
48 P - A	.30	28	.20	00.	20	40	- .30
49 S-C	00.	08	37	08	.03	.64	.29
50 M-S	71	.14	.36	.30	29	18	.49
51 SR-M	.10*	06	.40	'/1	10	48	62
52 S-JF	32	. 66	56	.20	23	.08	50
53 M-A	73	16	00.	.26	- ,11	.32	.82
54 SR-S	.10	10	.40	- 65	.10	08	00.
55 JF-M	.50	63	.19	20	09	.19	30
56 SR-C	00.	23	.34	. 500	14	.18	50
57 SR-P	- 09	• 07	.25	67	.48	45	44
58 SR-A	46	- 30	. 50	11*	03	. 0 3	.64
59 P-JF	.37	.40	16	05	35	.05	29

COEFFICIENTS OF ITEM ANALYSIS FOR WOMEN--Continued

	Altruism	80800-4054000000000000000000000000000000
	Control	80000000000000000000000000000000000000
	Prestige	40000400400400400000000000000000000000
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	Security	55855000000000000000000000000000000000
	Job-Freedom	
	Money	00000000000000000000000000000000000000
	L tems	60 C-A 61 C-A 62 A-S 65 S-P 65 S-P 66 JF-S 66 JF-S 66 JF-S 77 P-SR 77 P-SR 77 S-JF 77 S-JF 77 S-JF 77 S-SR 77 S-SR 75

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	salization Prestigs Control Altruism	25	.02 .406014	.162030 .18	.2612 .07 .76	.47 .04 .06 -79	3029 .0753	.1804 .04	35 .54 .1170	5810 .5010	.5810*10 .36	3408 .08 .10* 1	•.18 •.17 •.36 •.36 •	73 .02 .0953	11 .001719	33 .04 .0072	.44 .1013 .83	.03 .03 . ⁴⁷ .17	.3107 .47 .46	.450857 .16	•.1 ⁴ 91026	.34 .0847 .62	.35 .15 .06 .62	.156822 .08	40 .02 .3404	. 23 - .33 - .5 ⁴ . 29	.72 .0020 .40	.45 -04 -08 .6-	
	ation Prestiga Con			- 20	- 12	, 04	29	- • 0 <u>4</u>	-574	10	10 * -	08	.17	.02	. 00.	.04	. 10	.03	-•07	08		.08	.15	68	.02	۔ .33	. 00.		• +T.• •
Values	ity Self-Realiz	4	- 05 05	.16	6. 26	 47	30	7.18	- · 35	- .58	0.58	- .34	18	73	11	. .33	5 .44	0.	.31	2.45	314	5.34	. 35	4 .15	040	0.23	5	0 . 40	
	b-Freedom Secur	- 54		31	- 47	.170	 04 .0	.33	.104	22	.21 .1	18 .3	.135	.00.	.706	.43	14 .0	572	.021	.02	.670	.02	.023	12 .5	.472	28	.20 .1	ر. ۲. ۳.	
	Money Jol	. 08		000	. 28	.56	.90	- 53	.52	37	.25	48	26	.35	.16	.47	79	- 02	84	.00	.14	15	47	25	- 00 -	14	50	۰ ا ا	()- V •
	I tems	TH-P	2 C-P	0 - 0 0 - 0 0 - 0	4 JF-A	5 A-M	6 P-M	7 M-JF	3 A-P	9 SR-C	10 P-SR	11 SR-A	1.2 S-C	13 SR-M	14 S-JF	15 A-JF	16 M-A	17 JF-C	18 M-C	1.9 C-SR	20 P-JF	21 C-V	22 S-A	23 P-S	24 SR-JI	25 C-S	26 M-SR	27 JF-A	

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	Altruism	54.	.19	31	 65	54	42	66	24	.22	52	- 02	. .83	. 21	- 09	.80	.10	02	.64	04	.06		41	00.	.72	21	21	17	27	. 73	.03
	Control	05	09	- 0 0 0	10	20	* to	.20	.03	14	.21	.10	.02	36	03	04	.43	.20	00.	.07	.57	16	07	06	02	20	.12	.39	17	10	21
	Prestige	.41	.07	.06	.13	05	55	- 04	.52	• . 03	.31	21	.06	.08	39	54	03	.50	.18	51	.02	06	00.	00.	08	10	08	00.	Ϋ́Υ.	- 08	49
Values	Self-Realization	.24	.19	. 08	*20.	14	.24	32	- .05		39	.06	- 43	.50	1.32	• <u>3</u> 4	.03	02	. 29	20	12	.37	70	.06	• 4 4	37	28	- 63	76	*:00.	07
	Security	04	16	.06	22	15	.28	.28	79	60.	- 69	.53	02	20	.27	.23	.03	16	46	.52	53	.43	.23	52	02	.50	08	·07	• 13	.24	.13
	Job-Freedom	.05	.51	 13	.05	.02	.05	27	.19	•.31	.20	- 67	.11	.10	07	00.	.13	41	.17	31	.06	03	04	. 60	04	20	62	. .19	.08	• -	.38
	Money	79	54	.72	.53	08.	46	.39	00.	16	. 63	.17	77.	- 40	.53	1.52	69	.17	53	.20	11	- . 66	.70	08	85	.36	. 65	03	05 	46	. 22
	T Lems	30 M-P	31 M-JF	32 C-M	33 A-SR	34 A-C	35 P-C	36 A-S	37 S-P	38 JF-SR	39 S-M	40 JF-S	M-A I	42 S-SR	43 P-M	44 P-A	45 M-C	46 JF-P	47 S-A	48 P-S	40 S-C	50 M-S	51 SR-M	52 S-JF	53 M-A	54 SR-S	55 JF-M	56 SR-C	57 SR-P	58 SR-A	59 P-JF

CONCLUDED GROUP TOTAL ITEM ANALYSIS FOR THE COEFFICIENTS OF

Altruicm Õ Control Prestige Self-Realization Values Security Job-Freedom Money новологи соловинально соловинально соловинально соловинально соловинально соловинально соловинально соловина поволовить соловинально соловинально соловить со соловить со соловить соловить соловить соловить соловить солови поволовить соловить с JF-SR M-S M-SR SR-JF S-M A-JF M-JF A-P C-SR P-SR A-SR JF-C S-SR M-P SR-P JF-S C-JF Р-А С-М P-C A-C I tems 00

BIBLIOGRAPHY

BIBLIOGRAPHY

- 1. Adkins, Dorothy C. <u>Construction and Analysis of Achieve-</u> <u>ment Tests</u>. Washington, D. C.: U. S. Government <u>Printing Office</u>, 1947, pp. 180-184.
- 2. Allport, Floyd H. <u>Social Psychology</u>. Cambridge: Houghton Mifflin Co., 1924, p. 242.
- 3. Allport, Gordon W. <u>Becoming</u>. New Haven: Yale University Press, 1955, p. 93.
- 4. Allport, Gordon W., and Vernon, Philip E. "Study of Values," Journal of Abnormal and Social Psychology, 1931, p. 26.
- 5. Allport, Gordon W. <u>The Individual and His Religion</u>. New York: Macmillan Company, 1950.
- 6. "The Nature of Personality," <u>Psychological</u> Review, Vol. 54, No. 4 (1947), pp. 182-192.
- 7. _____. The Nature of Prejudice. Cambridge: Addison-Wesley Publishing Co., Inc., 1954, pp. 24-27.
- 8. Arsenian, Seth. "Changes in Evaluative Attitudes During Four Years of College," Journal of Applied Psychology, Vol. 27 (1943), pp. 338-349.
- 9. "The Relation of Evaluative Attitudes to Vocational Interests and Social Adjustment," Journal of Social Psychology, Vol. 22 (1943), pp. 17-24.
- 10. Ashbaugh, E. J. "Values in Education and Values in Life," <u>Ohio Schools</u>, Vol. 27 (1949), pp. 108-109.
- 11. Axtelle, George E. "How Do We Know What Values Are Best?," Progressive Education, Vol. 27 (1950), pp. 191-195.
- 12. Baker, H. V. "Spiritual Values Give Life Its Highest Meaning," <u>National Education Association Journal</u>, Vol. 36 (1947), 628-629.
- 13. Ball, Richard S. "The Predictability of Occupational Level from Intelligence," Journal of Consulting Psychology, Vol. 2 (1938), pp. 184-186.

- 14. Bean, K. L. <u>Construction of Educational and Personnel</u> <u>Tests</u>. <u>New York</u>: <u>McGraw-Hill Book Company</u>, <u>1953</u>, p. 158.
- 15. Beck, Robert. "The Methodology of Decision and Policy Making," <u>Progressive Education</u>, Vol. 27 (October-1949--May, 1950), pp. 172-176.
- 16. Becker, H. <u>Through Values to Social Interpretation</u>. Durham, North Carolina: Duke University Press, 1950.
- 17. Bedell, Ralph C. "Relationship Between Self Estimate and Measured Vocational Interests," Journal of Applied Psychology, XXV (1941), pp. 59-66.
- 18. Benne, K. D. "Educating for Wisdom in Value," <u>Progressive Education</u>, Vol. 27 (1950), pp. 181-184.
- 19. Berdie, Ralph. "Factors Related to Vocational Interests," Psychological Bulletin, March, 1944, p. 137.
- 20. Bills. R. E. "About People and Teaching" <u>Bulletin of</u> <u>the Bureau of School Service</u>, College of Education, University of Kentucky, XXVIII (December, 1955).
- 21. "A Comparison of Scores on the Index of Adjustment and Values with Behavior in Level of Aspiration Tasks," Journal of Consulting Psychology, Vol. 17 (1953), pp. 206-212.
- 22. Bills, R. F., Vance E. I., and McClean, O. S. "An Index of Adjustment and Values," <u>Journal of Con-</u> <u>sulting Psychology</u>, Vol. 15 (1951), pp. 257-261.
- 23. Bills, R. E. "The Effect of Value on Learning," Journal of Consulting Psychology, Vol. 21 (1952), pp. 217-222.
- 24. Bordin, E. S. "A Theory of Vocational Interests as Dynamic Phenomena," <u>Educational and Psychological</u> Measurements, Vol. <u>3</u> (1943), pp. 49-66.
- 25. Bradley, W. A. "Correlates of Vocational Preference," <u>Genetic Psychological Monographs</u>, 28 (1943), pp. 99-169.
- 26. Brameld, Theodore. "Inductive Approach to Intercultural Values," <u>Journal of Educational Sociology</u>, (September, 1947), pp. 4-11.
- 27. Branscomb, Harvie. "Values in the University," Phi Delta Kappan, Vol. 29 (November, 1947), p. 162.

- 28. Brigham, C. C. <u>A Study of Error</u>. New York: College Entrance Examination Board, 1932, p. 359.
- 29. Brogden, H. E. "The Primary Personal Values Measured by the Allport-Vernon Test; A Study of Values," <u>Psychological Menographs</u>, Vol. 66, No. 16 (1952), p. 348.
- 30. Byrns, Ruth. "Relationship of Vocational Choice to Mental Ability and Occupational Opportunity," School Review, XLVII (February, 1939), pp.101-109.
- 31. Cantril, E. and Allport, G. W. "Recent Applications of the Study of Values," Journal of Abnormal and Social Psychology, Vol. 28 (April, 1933), pp. 259-273.
- 32. Caplow, Theodore. <u>Sociology of Work</u>. Minneapolis: University of Minnesota Press, 1954.
- 33. Carter, H. D. "The Development of Vocational Attitudes," Journal of Consulting Psychology, IV (1940), pp. 185-191.
- 34. Carter, H. D., and Strong, E. K. "Sex Differences in Occupational Interests of High School Students," <u>Personnel Journal</u>, Vol. 12 (October, 1933), pp. 166-175.
- 35. Cattell, R. B. "Sentiment or Attitude," Character and Personality, Vol. 9 (1940), pp. 6-17.
- 36. Coe, G. A. "MY Search for What Is Most Worthwhile," <u>Religious Education</u>, Vol. 46 (March, 1951), pp. 67-73.
- 37. Crawford, A. B. and Clement, S. H. "The Choice of an Occupation," Department of Personnel Study, Yale University, 1932.
- 38. Crosby, R. C. and Winsor, A. L. "The Validity of Student Estimates of Their Interests," Journal of Applied Psychology, XXV (1941), pp. 408-414.
- 39. Cunningham, S. D. "Vocational Plans of a Select Group of High School Seniors," <u>The School Review</u>, XLIII (April, 1938), pp. 281-286.
- 40. Dewey, John. <u>Theory of Valuation</u>. Reprint of 67 pp. from <u>International Encyclopedia of UnifiedScience</u>, Vol. II, No. 4. Chicago: University of Chicago Press, 1939.

- 41. Division of Occupational Analysis, War Manpower Division. <u>Dictionary of Occupational Titles</u>, Part IV, Professional Section. Washington, D. C.: U. S. Government Printing Office, 1944.
- 42. DiMichael, Salvatore G. "Interest Inventory Results During the Counseling Interview," Occupations, Vol. 30 (November, 1951), pp. 93-97.
- 43. "The Professed and Measured Interests of Vocational Counselors," Educational and Psychological Measurements, IX (1949), pp. 59-72.
- 44. "Using Interests as the Basis of Vocational Choice," <u>Occupations</u>, XX (January, 1942), pp. 270-275.
- 45. Duffy, Elizabeth and Crissy, W. J. E. "Evaluative Attitudes as Related to Vocational Interests and Academic Achievement," Journal of Abnormal and Social Psychology, Vol. 35 (1940), pp. 226-245.
- 46. Duffy, Elizabeth. "A Critical Review of Investigations Employing the Allport-Vernon Study of Values and Other Tests of Evaluative Attitudes," <u>Psychological</u> <u>Bulletin</u>, No. 37 (1940), pp. 597-612.
- 47. Dukes, W. F. "Psychological Study of Values," <u>Psychological Bulletin</u>, Vol. 52 (1955).
- 48. Duncan, D. B. "Multiple Range and Multiple F Tests," Biometrics, Vol. 11 (1955), p.1-41.
- 49. Dyer, J. R. "Sources and Permanence of Vocational Interests of College Men," Journal of Applied Psychology, Vol. 15 (1932), pp. 233-240.
- 50. "The Relation Between Vocational Interests of Men in College and Their Subsequent Occupational Histories for Ten Years," Journal of Applied Psychology, Vol. 23 (1939), pp. 280-288.
- 51. Ehrle, G. Systems of Values in Small Children. Munster: Regensbergsche Buchhandl, 1930.
- 52. Ellis, Albert. "Personality Questionnaires," <u>Review of</u> <u>Educational Research</u>, XVII, No. 1 (Feb. 1947),pp.53-63.
- 53. "The Validity of Personality Questionnaires," <u>Psychological Bulletin</u>, XLIII, No. 5 (September, 1946), pp. 385-440.

- 54. English, H. B. and English, A. C. <u>A Comprehensive</u> Dictionary of Psychological and Psychoanalytical Terms. New York: Longmans, Green, and Company, 1958.
- 55. Feingold, G. A. "Relationship Between Intelligence and Vocational Choice of High School Pupils," Journal of Applied Psychology, VII (June, 1923), pp. 143-153.
- 56. Ford, C. A. "The Allport-Vernon Study of Values Test Applied to Entering Freshmen," <u>Psychological Bulletin</u>, Vol. 30 (1933), p. 557.
- 57. Forer, B. R. "Personality Factors in Occupational Choice," <u>Educational and Psychological Measurements</u>, Vol. 13 (1953), pp. 361-366.
- 58. Friedman, Bertha B. Foundations of the Measurement of Values. Contributions to Education No. 914. New York: Bureau of Publications, Teachers College, Columbia University, 1946.
- 59. Fryer, Douglas. "Predicting Abilities from Interests," Journal of Applied Psychology, XI (June, 1927), pp. 212-225.
- 60. Gage, N. L. "Judging Interests from Expressive Behavior," Psychological Monographs, LXVI, No. 18 (1952).
- 61. Garrett, H. E. <u>Statistics in Psychology and Education</u>. New York: Longmans, Green, and Co., 1953, p. 366.
- 62. Ginsburg, S. W. "Values and the Psychiatrist," American Journal of Orthopsychiatry, XX, No. 3 (July, 1950), pp. 466-478.
- 63. Ginzberg, E. <u>Occupational Choice</u>. New York: Columbia University Press, 1951.
- 64. _____ Towards a Theory of Occupational Choice," Occupations, XXX, No. 30 (April, 1952), pp. 491-494.
- 65. Goodenough, F. L. <u>Mental Testing</u>. New York: Rinehart and Company, 1951, p. 123.
- 66. Gray, W. S. (ed.). "Provision for the Individual," in <u>College Education Prodeedings of the Institute</u> <u>for Administrative Officers of High Institutions</u>, <u>IV. Chicago: University of Chicago Press</u>, 1932.
- 67. Guilford, J. P. <u>Fundamental Statistics in Psychology</u> and Education. New York: McGraw-Hill Book Co., 1956.
- 68. Guilford, J. P. "New Standards for Test Evaluation," Educational and Psychological Measurement, Vol. 6 (1946), pp. 427-438.
- 69. Harding, Lowry W. "Experimental Comparisons Between Generalizations and Problems as Indices of Values," Journal of General Psychology, Vol. 38 (June, 1948), pp. 31-50.
- 70. "A Value Type Generalizations Test," Journal of Social Psychology, Vol. 19 (1944), pp. 53-79.
- 71. Harris, D. "Group Differences in Values Within a University," <u>Psychological Bulletin</u>, Vol. 30 (1933), pp. 555-556.
- 72. Hartman, G. W. "Indirect Measurement of Teachers Values," <u>Research on the Foundations of American</u> Education, 1939, pp. 95-97.
- 73. Hawkes, H. E. College, What's the Use. New York: Doubleday Page and Company, 1927.
- 74. Herrold, Kenneth F. "Techniques for Sensitizing Individuals to Their Values," <u>Progressive Education</u>, Vol. 27 (April, 1950), p. 177.
- 75. Hollingworth, H. L. <u>Psychology and Ethics</u>. New York: Ronald Press Company, 1949.
- 76. Holtzclaw, B. C. "Ideas of Value in Ancient Philosophy," Psychological Bulletin, Vol. 30 (1933), p. 619.
- 77. Hull, C. L. Aptitude Testing. Yonkers, New York: World, 1928, Chapter 8.
- 78. Hurlock, E. B. and Jansing, C. "The Vocational Attitudes of Boys and Girls of High School Age," <u>Journal of</u> Genetic Psychology, Vol. 44 (1934), pp. 175-191.
- 79. Jacob, Phillip E. <u>Changing Values in College</u>. New Haven, Connecticut: Edward W. Hazen Foundation,1956.
- 80. Johnson, E. Ernest. "Education and Spiritual Values," <u>Teachers College Record</u>, Vol. 48 (March, 1947), pp. 374-383.
- 81. Katz, D., Allport, F. H., and Jenness, M. B. <u>Students</u> Attitudes. Syracuse: Craftsman Press, 1931.
- 82. Kay, Lillian Wald. "The Relation of Personal Frames of Reference to Social Judgments," <u>Archives of</u> <u>Psychology</u>, No. 283 (1943), p. 40.

- 83. Kelley, T. L. Interpretation of Educational Measurements. Yonkers, New York: World, 1927., p. 210.
- 84. Kemp, Clarence Gratton. "Changes in Patterns of Personal Values in Relation to Open Closed Belief Systems." Unpublished dissertation, Michigan State University, 1957.
- 85. Koch, M. "Experience of Values in Seven Year Olds," Zeitschrift fur Angewandte Psychologie, Vol. 35 (1930),pp. 76-138.
- 86. Kohler, Wolfgang. The Place of Value in a World of Facts. New York: Liveright Company, 1938.
- 87. Kroeber, Al. "Values as a Subject of Natural Science Inquiry," <u>Proceedings of National Academy of</u> <u>Science</u>. Washington, D. C.: National Academy of Science, 1956.
- 88. Kroger R. and Louttit, C. M. "Influence of Fathers Occupations on the Vocational Choices of High School Boys," Journal of Applied Psychology, XIX (April, 1935), pp. 203-212.
- 89. Krug, Edward A. "Our Values, Our Decisions, and Our Action," <u>Educational Leadership</u>, Vol. 6 (November, 1948), pp. 73-77.
- 90. Lecky, P. <u>Self Consistency</u>. New York: Island Press, 1945.
- 91. Lehman, Harvey G. and Witty, Paul A. "Sex Differences: Some Sources of Confusion and Error," <u>American</u> Journal of Psychology, Vol. 42 (January, 1930), pp. 140-147.
- 92. _____. "Sex Differences in Vocational Attitudes," Journal of Applied Psychology, Vol. 39 (1936), pp. 576-585.
- 93. Lentz, T. F. and Nickel, E. T. "Opinionaire Correlates of Specific Vocational Preferences II," <u>Journal</u> of Applied Psychology, XXV (1941), pp. 514-523.
- 94. "Opinionaire Correlates of Specific Vocational Preference Factors," Journal of Applied Psychology, XXV (1941), pp. 391-400.
- 95. Lewin, K. The Conceptual Representation and the Measurement of Psychological Forces. Durham, N. C.: Duke University Press, 1938.

- 95. Lindeman. Eduard C. "Sources of Value for Modern Man," <u>Religious Education</u>, Vol. 42 (September, 1947), pp. 284-290.
- 97. Lindquist, E. F. <u>Design and Analysis of Experiments in</u> <u>Psychology and Education</u>. Boston: Houghton <u>Mifflin Company</u>, 1956.
- 98. Lurie, W. A. "A Study of Spranger's Value-Types by the Method of Factor Analysis," Journal of Social Psychology, Vol. 8 (1937), pp. 17-37.
- 99. Mackaye, D. L. "The Fixation of Vocational Interest," <u>American Journal of Sociology</u>, XXXIII (1927), pp. 353-370.
- 100. Maller, J. B. and Glaser, E. M. <u>Interest Values</u> <u>Inventory</u>. New York: Bureau of Publications, Teachers College, Columbia University, 1939.
- 101. Mausner, B. and Siegel, A. "The Effect of Variation in Value on Perceptive Thresholds," <u>Journal of Ab-</u> <u>normalandSocial Psychology</u>, Vol. 45 (1950), pp. 760-763.
- 102. McGinnies, Elliott and Bowles, Warren. "Personal Values as Determinants of Perceptual Fixation," Journal of Personality, Vol. 18 (September 1949), pp. 224-235.
- 103. McGinnies, E. "Personal Values as Determinants of Word Association," Journal of Abnormal and Social Psychology, Vol. 45 (1950), pp. 28-36.
- 104. Moore, Willis. "The Teaching of Values," <u>Educational</u> Record, Vol. 28 (October, 1949), pp. 412-419.
- 105. Mosier, Charles I. and McQuitty, John V. <u>Psychometrika</u>. Vol. 5, No. 1 (March, 1940), pp. 57-65.
- 105. Nelson, E. "Father's Occupations and Student's Vocational Choices," <u>School and Society</u>, V (October 28, 1939), pp. 572-576.
- 107. Nelson, E. and Nelson H. "Student Attitudes and Vocational Choice," <u>Journal of Abnormal and Social</u> <u>Psychology</u>, Vol. 35 (1940), pp. 279-282.
- 108. Newcomb, T. M. <u>Personality and Social Change</u>. New York: Dryden Press, 1943.
- 109. Odell, C. W. <u>A First Course in Statistics</u>. Dubuque, Iowa: Wm. C. Brown, Co., 1957.

- 110. Peters, E. F. "Factors Which Contribute to Youth's Vocational Choice," Journal of Applied Psychology, Vol. 25 (1941), pp. 428-430.
- 111. Pintner, R. "Comparison of Interests, Abilities, and Attitudes," Journal of Abonormal and Social Psychology, Vol. 27 (1933), pp.351-357.
- 112. Poull, L. "Interests in Relation to Intelligence," Ungraded, VII (1922), pp. 145-222.
- 113. Prince, Richard. "A Study of the Difference Between Individual Values and Administrative Values in The School Situation." Unpublished Ph.D. dissertation, University of Chicago, 1957.
- 114. Repley, Ray. "The Dawn of Value Theory," Journal of Philosophy, Vol. 34 (July 8, 1937), pp. 365-373.
- 115. Roe, Anne. <u>Psychology of Occupations</u>. New York: John Wiley and Sons, Inc., 1956.
- 116. Romine, S. "Education Is a Value Process," Phi Delta Kappan, Vol. 31 (November, 1949), pp. 153-154.
- 117. Rose, W. A. "A Comparison of Relative Interest in Occupational Groupings and Activity Interests as Measured by the Kuder Preference Record," Occupations, XXVI (February, 1948), pp. 302-307.
- 118. Rosenberg, M. Occupations and Values. Glencoe, Illinois: The Free Press, 1956.
- 119. Rugg, Harold. Foundations for American Education. Yonkers on Hudson, New York: World Book Company, 1946.
- 120. Samler, J. "Basic Approaches to Mental Health," The Personnel and Guidance Journal, XXXVII, pp. 638-643.
- 121. Schaeffer, B. R. "The Validity and Utility of the Allport-Vernon Study of Values Test," Journal of Abnormal and SocialPsychology, XXX (1936), pp. 419-422.
- 122. Schiller, B. "An Analysis of the Vocational Preference of 2026 New York City Elementary School Children." Unpublished Masters thesis, Columbia University, 1929.
- 123. Scroggs, Schiller. "Problem of Value in the Age of Science," Association of American Colleges Bulletin, Vol. 35 (December, 1949),pp. 519-527.

- 124. Shaffer, F. H. "The Measured Interests of Business School Seniors," <u>Occupations</u>, XXVII (Arpil, 1949), pp. 462-465.
- 125. Singer, S. and Stefflre, B. "The Relationship of Job Values and Desires to Vocational Aspirations of Adolescents," Journal of Applied Psychology, Vol. 38 (1954), p. 6.
- 126. Sisson, E. D. "An Analysis of the Occupational Aims of College Students," <u>Occupations</u>, XVII (December, 1938), pp. 211-215.
- 127. Small, L. "Personality Determinants of Vocational Choice," <u>Psychological Monographs</u>, Vol. 67 (1953), pp. 1-21.
- 128. Sparling, E. J. "Do College Students Choose Vocations Wisely?," <u>Teachers College Contributions to Education</u>, No. 561. Columbia University Press, 1933.
- 129. Spoerl, D. T. "The Values of the Post-War College Student," Journal of Social Psychology, Vol. 35 (1952), pp. 217-225.
- 130. Spranger, E. <u>Types of Men</u>. Niemeyer Verlag, Halle, 1928.
- 131. Stefflre, B. "Concurrent Validity of the Vocational Values Inventory," Journal of Educational Research, Vol. 52, No. 9 (May, 1959), pp. 339-341.
- 132. "The Reading Difficulty of Interest Inventories," <u>Occupations</u>, XXVI, No. 2 (November, 1947), pp. 95-96.
- 133. Stendler, C. B. "Class Biases in the Teaching of Values," <u>Progressive Education</u>, Vol. 27 (January, 1950), pp. 123-126.
- 134. Strong, E. K. "Role of Interests in Guidance," Occupations, XXVII (May, 1949), pp. 517-522.
- 135. <u>Change of Interests With Age</u>. Stanford: Stanford University Press, 1931.
- 136. "The Use of Vocational Interest Scales in Planning a Medical Career," <u>Psychological Monographs</u>, Vol. 66 (1952), p. 341.
- 137. <u>Vocational Interests of Men and Women</u>. Stanford: Stanford University Press, 1943.

- 138. Stuart, H. W. "Valuation as a Logical Process in Studies in Logical Theory," <u>The Dicennial Publication of the</u> <u>Univ. of Chicago</u>. Ed., John Dewey. XI, 1903.
- 139. Super, D. E. Appraising Vocational Fitness. New York: Harper and Brothers, 1949.
- 140. "A Theory of Vocational Development," American Psychologist, Vol. 8 (1953), pp. 185-190.
- 141. _____. "Vocational Adjustment Implementing a Self-Concept," <u>Occupations</u>, November, 1951, pp. 88-92.
- 142. "Experience, Emotion, and Vocational Choice," Occupations, Vol. 27 (October, 1948), pp. 23-28.
- 143. <u>The Psychology of Careers</u>. New York: Harper and Brothers, 1957.
- 144. "Vocational Interests and Vocational Choice Present Knowledge and Future Research in Their
 144. Relationships," Educational and Psychological Measurements, Vol. 7 (1947), pp. 375-383.
- 145. Thorndike, R. L. "Science and Values," <u>Science</u>, Vol. 83 (1936), pp. 1-81.
- 146. <u>Human Nature and the Social Order.</u> New York: <u>Macmillan Company, 1940.</u>
- 147. <u>Personnel Selection</u>. New York: John Wiley and Sons, 1949, p. 70.
- 148. Todd, J. E. <u>Social Norms and the Behavior of College</u> <u>Students. New York: Teachers College, Bureau of</u> <u>Publications, Columbia University, 1941.</u>
- 149. Townsend, J. C. <u>Interpretation of the Experimental</u> <u>Method</u>. New York: McGraw-Hill Book Co., 1953, p. 150.
- 150. Trow, W. C. "Fantasy and Vocational Choice," <u>Occupations</u>, XX (November, 1941), pp. 89-93.
- 151. <u>"A Valuatic Approach to Religious Education,"</u> Religious Education, May-June, 1948, pp. 169-174.
- 152. Turner, W. D. "Altruism and Its Measurement in Children," Journal of Abnormal and Social Psychology, Vol. 43 (1948), pp. 502-516.
- 153. Tyler, L. E. "The Measured Interests of Adolescent Girls," Journal of Educational Psychology, Vol. 32 (November, 1944), pp. 561-572.

- 154. VanDusen, A. D. "Standardization of a Values Inventory," Journal of Educational Psychology, Vol. 30 (1939), p. 53.
- 155. Vernon, Phillip. <u>The Structure of Human Abilities</u>. New York: John Wiley and Sons, 1950.
- 156. Weiss, A. P. "Value as an Objective Problem for Psychology," Journal of Abnormal and Social Psychology, Vol. 27 (1932), pp. 111-127.
- 157. White, R. K. "Value Analysis: A Quantitative Method for Describing Qualitative Data," Journal of Social Psychology, Vol. 19 (May, 1944), pp. 351-358.
- 158. Whitely, P. L. "A Study of the Allport-Vernon Test for Personal Values," Journal of Abnormal and Social Psychology, Vol. 28 (April-March, 1934), pp. 33-34.
- 159. "The Constancy of Personal Values," Journal of Abnormal and Social Psychology, Vol. 33 (1938), pp. 405-408.
- 160. Wickert, F. "A Test for Personal Goal Values," Journal of Social Psychology, Vol. 11 (1940), pp.259-274.
- 161 Williamson, E.G. "On Choosing a Vocation," Occupations, XIV (April, 1936), pp. 636-646.
- 162. Woodruff, Asahel D. "Personal Values and the Direction of Behavior," <u>School Review</u>, Vol. 50 (January, 1942), pp. 32-43.
- 163. Woodruff, Asahel D. and DiVesta, Francis J. "The Relationship Between Values, Concepts, and Attitudes," Educational and Psychological Measurement, Vol. 8 (Winter, 1948), pp. 645-659.
- 164. Wright, M. A. "How Our School Helps Youth With Value Problems," <u>Progressive Education</u>, Vol. 27, (April, 1950), pp. 185-189.