A STUDY OF THE STABILITY OF VOCATIONAL VALUES AS MEASURED BY THE VOCATIONAL VALUES INVENTORY

> Thesis for the Degree of Ph. D. MICHIGAN STATE UNIVERSITY Ray Richard Searle 1962

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### This is to certify that the

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A STUDY OF THE STABILITY OF VOCATIONAL VALUES AS

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presented by

Ray Richard Searle

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John E. Cordan Major professor

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#### ABSTRACT

# A STUDY OF THE STABILITY OF VOCATIONAL VALUES AS MEASURED BY THE VOCATIONAL VALUES

INVENTORY

by Ray Richard Searle

### The Problem

The general problem of this study is to determine the stability of vocational values in relation to the stability of vocational choice. The purpose in view is to assess the stability of vocational values as a potential criterion for the event of vocational choice crystallization. The assessment is made in a longitudinal study of the values and choices made by a selected population of drop-outs, graduates, and students associated with Michigan State University.

Two basic assumptions underlie this study: 1) That entering the world of work constitutes a reality shock which may have its repercussions on a value system, and 2) That entering the world of work as an academic drop-out would sustain a shock different from entering it as a successful graduate. Students of the population have not sustained such a reality shock and therefore ostensibly serve as a control group.

Three major null hypotheses and two derivative sub-hypotheses were tested.

Major null hypothesis 1: There is no difference between

the mean deviations of each of the seven values held by dropouts, graduates, and students.

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Major null hypothesis 2: There is no difference in the number of changes in vocational choice held by drop-outs, graduates and students.

Major null hypothesis 3: There is no difference between the mean deviations of each of the seven values held by dropouts, graduates, and students who make no change in vocational choice, and there is no difference between the mean deviations of each of the seven values held by drop-outs, graduates, and students who make a change in vocational choice.

Sub null hypothesis a: There is no difference between the mean 1961 scores of each of the seven values as held by new entries to a vocation and that vocation's 1961 occupational value image, or between that vocation's occupational image of 1961 and that of 1959.

Sub null hypothesis b: There is no difference between the mean deviations of each of the seven values as held by males and females among drop-outs, graduates, and students.

### Methods and Procedures

The hypotheses were tested on a sample of 422 subjects who previously participated in a concurrent validity study of the Vocational Values Inventory. Two years later, when this study was conducted in the academic fall quarter of 1961 the sample consisted of 118 drop-outs, 140 graduates, and 164 students. A total of 317, or 75% of the total

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population, filed returns by mail. Six were incomplete in some vital detail. Therefore the workable sample numbered 311, 173 males and 138 females.

The Vocational Values Inventory was the instrument used to measure vocational values. Considered as a battery of tests the reliability for the seven values ranges from .69 to .91. The concurrent validity study established that there was no significant difference between the tested and the stated appraisal of vocational values for the sample used in this study. A questionnaire was used to ascertain the status and nature of vocational choice.

Lacking sample and instrumental independence, the results were subjected to the "t" test and chi square test.

### Results and Conclusions

With one exception no value significantly differentiated between drop-outs, graduates, and students. In nine instances four of the seven values made distinctions within the three classifications. Only female and total drop-outs changed or sustained their vocational choice with significant frequency. With one exception values held by changers or by non-changers of vocational choice did not differentiate between drop-outs, graduates, and students, nor did stability of values make such differentiation.

In every instance new entries to five of the vocations had some significant difference from 1959 to 1961 for some value in their profile. Teaching, business, and managerial

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vocations tended to be unstable in their occupational value image. Teachers and Salesmen tended to change less from their new vocational choice value image than that image changed from 1959 to 1961. Business careerists seemed to make changes dictated by the times and therefore supported the theory obversely. Medicine appeared to reflect anticipatory socialization of values. Managers tended to disprove the theory.

Males and females tended to co-vary over time and therefore values failed to make a significant difference between them.

Control was found to be the most dynamic value throughout the testing of the various hypotheses. Altruism and Money failed to register any significant differences. It seems that the results on the whole tend to reflect either idealized responses, or the fact that values are more stable than perceived.

# A STUDY OF THE STABILITY OF VOCATIONAL VALUES AS MEASURED BY THE VOCATIONAL VALUES INVENTORY

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, Ray Richard Searle

A THESIS

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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## PREFACE

Froduce! Were it the veriest infinitesimal fragment of a product, produce it in God's name.--Carlyle.

From whence cometh my help? My help cometh from the Lord, who made heaven and earth.--Psalm 121:1-2.

### Ray Richard Searle

Candidate for the degree of

Doctor of Philosophy

Date of Examination: May 14th, 1962, 10:00 A.M. Room 212, College of Education

Dissertation: A Study of the Stability of Vocational Values as Measured by the Vocational Values Inventory

Outline of Studies:

Major area--Administrative and Educational Services (Pastoral Counseling) Minor area--General Education, Psychology

Biographical Items:

Birthdate--December 28th, 1916, Homewood. Illinois Undergraduate study--Moody Bible Institute, Chicago, Illinois, 1934-1936. Diploma. Thornton Township Junior College, Harvey, Illinois, 1936-1938. Diploma. Wheaton College, Wheaton, Illinois, 1938-1940. Bachelor of Arts. Graduate Study--Eastern Baptist Seminary, Philadelphia, Pennsylvania, 1940-41. Princeton Theological Seminary, Princeton, New Jersey, 1942-1944. Bachelor of Divinity. Northern Baptist Seminary, Chicago, Illinois, 1957-1959. Master of Theology. Michigan State University, East Lansing, Michigan, 1960-1962.

Experience:

Student Fastor--2nd Amwell Presbyterian Church of Mt. Airy, New Jersey, 1942-1944.
Pastor--1st Fresbyterian Church of Brainerd, Minnesota, 1944-1948.
Pastor--Calvary Fresbyterian Church of Wichita, Kansas, 1949-1953.
Fastor--Immanuel Presbyterian Church of Evansville, Indiana, 1954-1956.
Assistant Pastor--1st Presbyterian Church of River Forest, Illinois, 1956-1959.

# CHAPTER I

THE PROBLEM: ITS NATURE AND IMPORTANCE

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# CHAPTER I

# THE PROBLEM: ITS NATURE AND IMPORTANCE

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#### CHAPTER I

### THE PROBLEM: ITS NATURE AND IMPORTANCE

Axiology is the study of the theory of values. The general theory of values has its formal origin in the debate between Alexius Meinong and Christian von Ehrenfels during the 1890's concerning the source of value. Meinong emphasized the subjective source. Values emanate from an anticipated affect or feeling of expected pleasure. Ehrenfels saw value as residing in the object. Worthy exponents have continued to expound the respective merits of each viewpoint.

Two other theoretical positions vie for contemporary consideration. Axiological relationism propounded by Dewey holds that values are the relation of things as means to the ends or consequences actually reached. Variables in interaction have instrumental value. Whereas this theory holds values to be verifiable, axiological nominalism denies that they are factual. That values describe neither a state of the subject, the object, or a relation, is also called emotivism. Values serve an expressive function and are therefore factually meaningless.

Distinct from the consideration of value sources, though somewhat contingent upon them, are the philosophical systems into which values are integrated. Lowe (34) outlines the foremost frames of reference for a theory of values:

1. Naturalism. Logical positivism is the primary contender in this area. Reality is limited to what can be de-

fined operationally. Hence, there is no hierarchy of values transcending the purely physical. For psychology it implies a behavioristic hedonism which reduces the life of mind to the needs of the body. The criterion of the good is its survival value. If that leads to mental slavery, as in Skinner's <u>Malden Two</u>, it is also a freedom from the tyranny of choice.

2. Culturalism. Man's social nature is the criterion of the good. Neo-Freudians view wholeness as the optimum relating of the individual to others. Adjustment is the ability to adapt to the group. Values tend to evaporate in a moral abdication of responsibility in favor of the group. But who is the group? Wrenn (74:327) saw this when he said, "The counselor can never be really loyal to society until he is loyal to something more than society."

3. Humanism. Man's moral obligation is to realize himself as the ultimate value. This value is oriented in the belief that man is self-sufficient and able to control his own destiny. Fromm (8:26) contends: "The whole life of the individual is nothing but the process of giving birth to himself." Curran (10:19) states "A reasonable pursuit of one's own excellence" is a core therapeutic concept and a basic value scheme. But according to Lowe (34) Reinhold Niebuhr holds that it is the man who thinks that he is most like God who is the most completely depraved. And Lowe (34:691) flatly declares, "Self-actualization does not seem to be enough," as a cornerstone of a meaningful value system.

4. Existentialism. Reality cannot be grasped by reason.

The good is realized only in the decisions made by passionate inwardness or <u>existenz</u>. Whereas in logical positivism man makes his moral values by emotionally embracing some rationally delineated portion thereof, existentialism holds that decision itself makes the man in whom values are forever locked in subjective relativity. The will to meaning is that which imparts value to life itself. But the circularity of faith in faith may lead to ultimate nihilism.

5. Theism. Man's loyalty is to God. Man is totally dependent on God. As Lowe (34:691) puts it, "The theist, however, differs from all who believe in the self-sufficiency of man by his belief in a personal God before whom he stands in need of redemption." One value is central for the theist: "Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy strength, and with all thy mind." Allport (2:80) says, "Love is incomparably the greatest therapeutic agent." Whereas humanism holds that man gains his life by holding it close and developing it, theism declares that one saves his life by "losing" it. This involves everyone in striving to do the will of God in every area of life.

For the purposes of this dissertation it shall be basically assumed that values have their source in the objective, factual environment. They are measurable. They are also in dynamic interaction with the subjective capacity to perceive and categorize them. The process via which objective values are subjectively perceived and introjected is accom-

plished by what Allport (2) calls a collective of measurable functions. For this purpose the continually becoming "self" has certain inborn dispositions: 1) The reflexes, drives and homeostatic functions requisite to survival, 2) The inheritance of genelike traits, 3) The capacity to learn according to structured categories.

It is with these dispositions that man seeks to overcome his estrangement from his environment (and his Maker). Insofar as choice is exercised between cognatively perceived objective values, the "self" is actualized. When positive or negative affect is aroused by these values, the "self" is motivated to action. Thus Allport (2:16) cites Goldstein, Angyal, Cantril, Lecky, Revers, Sinnott and others "who in common postulate one basic motive in life--the maintaining, actualizing and enhancing of the capacities of the experiencing organism." In knowing good and evil as objectively determined by God, man "becomes" "as god". Awareness dawns. Self-awareness in relation to the environment is promoted. Experiences which promote such self-awareness are introjected as part of the hierarchy of an integrated value system.

At first the organism's value system is the product of a course of life guided in part by random events, and in part by automatic opportunistic responses of various habit subsystems. Choices made even under these circumstances contribute to the organism's self-actualization. However, when reality forces the consideration of a multitude of contingencies in making a choice, the need for his emerging reference

context or value system becomes acute. Like a space capsule in the course of trajectory, there is a reversal of attitude. Random and opportunistic choices which had built up a system of values for the organism's self-actualization now give way to choices made by that maturing, self-actualizing organism on the basis of that value system. Allport (2) calls this the oriented or "propriate" striving of the emerging "self" or proprium. He characterizes this shift as one in which conscience moves from introjected to self-referred value judgments, from a "must" motivation to an "ought" motivation, from a negative fear of consequences to a positive self-consistency. Moreover, the central characteristic of propriate striving is that its goals are, strictly speaking, unattainable. Such striving confers unity upon the personality. Yet there is no unity of fulfillment. The striving of the proprium in the arena of life maintains peace or unity within the personality. The value system of the organism constitutes the "rules" of the game.

Since man will spend most of his waking hours in some vocation, the choosing of that vocation assumes paramount importance. It will be the arena best suited to the rules of the game as adopted by the organism. The individual addresses work for his own continuing self-realization. Super (63:196) himself supplies: "In choosing an occupation one is, in effect, choosing a means of implementing a self-concept." Work offers that environment wherein a procession of choices ministers to that "becoming" "as god". It will be that endeavor in which

tensions are released enough to give satisfaction, but also that enterprize which leaves the person dissatisfied enough to pursue unattainable goals. He will get up the next morning and go back to work again.

Suiting the arena to the rules of the game as held by a given individual is prerequisite to his winning the game of life. If, for example, one holds to the rules of football while attempting to play (make choices in self-actualization) on a baseball diamond, a third "down" may be a "third" out. The player or side could then be "retired", but prematurely according to his frame of reference.

In the process of interaction between vocational choice and those values which assume an association therewith, it is possible that randomness or opportunism prevails. Circumstantial choice even of a vocation would then be contributing to the value system. Under these conditions the value system would tend more to be modified by the reality choice as made. Vocational choice would be less likely to be modified by a value system. The individual has not paused to give it much consideration. Thus, vocational choice would tend to be more stable than a system of vocational values because that very choice would be contributing to the modification of one's value system.

If, however, external sanction gives way to internal preference, and if force-of-habit gives way to generic selfguidance, then vocational choice may be said to be made by the proprium. Individuality is asserted in relating that

choice to the self-image and value system developed within the organism. Where this occurs the value system tends to remain stable, even though a variety of choices may be considered. Commitment to an integrated system of values tends to maintain the individual's stability because the continuity of identity of the self-image is inseparably bound with those values.

The point of concern and inquiry is the reversal of "attitude". Ginzberg (23) identifies it as the "moment" of crystallization. He states that the young adult is much more aware than the adolescent of the need to consider carefully the demands of the reality situation. True crystallization cannot occur until a clarification of values has been made.

In his doctoral thesis Stein (60) found that crystallization was more apparent in college male students than college female students. His conclusion was based on the degree of congruency between fantasy and expectational choice rather than on the relation of reality choice to vocational values.

Rosenberg (47) alludes to the "voluntary" selection of an occupation for certain sociological reasons. Values commensurate with the image of this future occupation are then introjected in a process cited as Kerton's "anticipatory socialization". According to this view a kind of pseudocrystallization occurs to which anticipated values associated with realization of that choice continue to make a contribution. By putting the word "voluntary" in quotes Rosenberg

virtually acknowledges that the selection is opportunistic. A truly oriented choice is not likely to be made by a proprium to which reality factors are yet significantly contributory. However, he avows that both values and choices tend to determine one another. In his earlier work (47:22) he states: "This study would suggest that values have a greater effect on change of occupational choice than the other way around (sic)." In a later work edited jointly with Lazarsfeld (33) he concludes from the same data that the interaction is mutual.

On the other hand Dyer (16) found that vocational choices of college graduates made early in life have the greatest holding power. Without knowing the concurrent values held it is impossible to assess whether this represents an excessive rigidity of choice or an unusually early maturing of the proprium. If the former is true, the values would tend to fluctuate in order to accommodate the choice. In the latter instance the radix character of the personality would be supported by a well integrated and highly stable value system.

The problem of this study develops out of the theory that vocational values will tend to be more stable than vocational choices if the point of crystallization has been reached. Then and thereafter the value system of the organism functions as the frame of reference for propriate, oriented striving.

### Statement of the Problem

The general problem of this study is to determine the area of crystallization of vocational choice by assessing

the stability of vocational values in relation to the stability of vocational choice. The assessment will be made in a longitudinal study of the values and choices made by a selected population of graduates, students, and drop-outs associated with Eichigan State University.

Ginzberg (24:189) notes that "since actual work experience is the final test, it would be desirable for future investigators to explore its impact on the definitive vocational decisions of the individual." It will be the purpose of this study to make such exploration. The impact will be measured in terms of the stability of a value system over a two-year interval, 1959-1961. The instrument will be the Vocational Values Inventory (APPENDIX A).

The choice of an actual work experience will be investigated from three different frames of reference:

1) The college drop-out is assumed to have become engaged in an actual work experience as a matter of circumstantial choice. If a vocational choice involving completion of an academic degree was made by the proprium, and if that degree was not obtained, it is more likely that circumstances dictated the type of occupation available. <u>Ipso facto</u> the original choice was not made by the proprium in the true sense. Jacob (28) avers that value systems will not stand up when undercut by forced choices between alternatives which involve conflicting values. The reality shock of academic failure is identified as one source of vocational value modification. The impact of finding actual work experience commensurate with the

preparation is identified as a second source of vocational value modification. Vocational choice is itself contributing to the value system of the self-actualizing organism.

2) The college graduate is assumed to have made adequate preparation for engaging in the world of work. Nevertheless, the "final test" is the work experience: entry, itself. Super (③) believes that there is a synthesis between the value system and reality. Rosenberg (47) holds that values become distorted by engaging in the actual field of labor. While most likely sustaining accedenic success and vocational reality in quick succession, his vocational choice will tend to be made in the light of his value system as a matter of prior commitment. The proprium may be said to have functioned in making an oriented decision. The value system of the graduate, though modifiable, is less likely to change than that of the drop-out because of the time and mone, invested in pursuing an integrated value goal.

3) The student will be assumed to be unemployed on a career basis. This in no way deprecates the exploratory value of hobbies or part-time employment. Rather it acknowledges the temporary and contributory nature of random or opportunistic so-called "odd jobs". A majority of the student's waking hours are spent in the classroom or in study. Jacob (28) observes that the values of students are more likely to be socialized than liberalized by their college experience. The world of work has not yet presented its full reality shock to the evaluating organism. Kerton's "anticipatory sociali-

zation" must be considered as a factor, however.

A change in vocational choice will be accepted as such when perceived by the subject and noted on his questionnaire.

Having determined whether one or more of the areas of reality shock are significantly differentiated by a change in the vocational value system, the areas most significant of change in vocational choice will be ascertained. Whether changes (or sustainings) of choices reflect a striving of the proprium, a true crystallization, or not, will depend on their assessment in relation to the stability of their respective vocational value systems.

Following Ginzberg (24) in avowing that a crystallized occupational choice can only follow a clarification of goals and values, and reflecting Allport (2) in assuming an oriented choice to be the act of propriate striving in view of a stable value system, it is propounded that sustained choices supported by no significant change in values indicates propriate choices. Sustained choices in the light of fluctuating values reveal circumstantial choices. A shift of choice sustained by stable values may well be made as a matter of propriate striving. Unstable values held in conjunction with unstable choices would tend to indicate that the event of crystallization was not yet a matter of experience.

Rosenberg (47) found that values tend to be more stable as they reflect the value norms of a given occupational area of choice. Let it be assumed that the index for the several values for a given area of occupational choice be obtained

from those indices held by persons indicating that area of choice at a given time of inventory. Then if values tend to have a greater effect on vocational choice than vice versa, the values for those who have made changes in vocational choice will tend to be less different from the values characteristic of that new area of choice than the latter itself has changed in the same period of time. In other words, propriate striving in oriented self-awareness will reveal, by change in vocational choice, an increased job awareness.

Stein (60) found that the men tended to be more realistically oriented than women. Where feasible, therefore, a comparison between the sexes will be conducted.

Broadly stated, the basic hypotheses of this study are as follows:

- Drop-outs, graduates and students will hold vocational value systems at differing levels of stability.
- Drop-outs, graduates and students will make vocational choices at differing levels of stability.
- 3. Drop-outs, graduates and students will reflect propriate striving or true crystallization by differing in levels of stability of vocational values in relation to changes in vocational choice.

Sub-hypotheses developed from the foregoing research are:

- a. Those choosing a new vocation will reflect these 1961 occupational value images more consistently than these occupational value images themselves remain consistent from 1959 to 1961.
- b. Men, more than women, will tend to be realistically oriented in relating vocational choice to vocational values.

## Importance of the Study

Samler (48) notes that we are confronted with a vacuum in values. It has been the practice of some counselors to avoid the area of values because of the desire to remain objective. But Williamson (73) affirms that while values may not be made explicit, the counselor's reactions, emphasis, objectives and methods betray his system of values. If there is a need for values to be considered, and if there is something intrinsically irrepressible about them, an attempt to understand values and value functions is in order.

Furthermore, Norrell and Grater (39) have found that making a vocational choice is in reality an expression of the individual self-concept. If the self-concept is distorted

by lack of self-awareness, the vocational choice will tend to be inappropriate. Insofar as one's value system is likewise coincident with one's self-awareness, a delineation thereof and the understanding of its functions are properly in the province of counseling. If the vocational choice can be identified as one made by the proprium out of an integrated system of values, academic counseling will have a valid basis. If there is fluctuation or indecision in making a vocational choice, the implications for counseling will vary in the light of whether such instability of choice is supported by a stable or unstable system of values.

This study is undertaken in order to provide a better understanding of the stability of vocational values and vocational choices. In the process of noting the impact of reality factors on values and choices, that area may be identified in which crystallization occurs as a pivotal event in the process of vocational choice.

### Definition of Terms

:

<u>Value</u>: Although value is variously interpreted according to its ideological context, for the purpose of this study it shall be defined thus:

"A value is a conception of the desirable" (47:6).

As a conception it is in a cognitive frame of reference. As something desirable it lies in the objective purview. As capable of arousing the emotions it either attracts or repels according to the generalized concept of the good. The con-

cept tends to stabilize into a standard to which or from which conformity is either right or wrong. The affect remains subject to the phenomenological approach to reality and therefore may be represented on a continuum of what is the good.

A value is therefore to be distinguished from attitude, interest, need or satisfaction.

A vocational value is a concept of the desirable in the area of occupations.

<u>Choice</u>: In speaking of vocational choice Super ((3:184) states: "Choice is, in fact, a process rather than an event." It shall be so understood in this dissertation. However, a preference statement of vocational expectation made in 1959 and a record of occupational entry as of 1961 shall be regarded as existential events within that process. In the case of students an additional preference statement of expectation rather than a record of vocational entry will be used.

<u>Crystallization:</u> According to Ginzberg (24) crystallization is the cumulative impact of a series of decisions on the ability to make an occupational preference statement. With regard to the function of crystallization Ginzberg distinguishes two types: work-oriented and pleasure-oriented. The former is active in making a preference statement, the latter is passive. One is actively viewing work as a means of self-realization. The other is passively responding to external pressures. This distinction corresponds to that of Allport who characterizes the active personality as propriately

striving. If vocational choice is an act of propriate striving, that work will be chosen which best tends to implement the self-concept. If crystallization is not yet achieved, vocational choice will not be supported by a stable value system. The choice itself will thus in some measure be contributing to a possible future crystallization. Keanwhile it is more likely to be the result of random or opportunistic options.

<u>Drop-out</u>: One who was once enrolled at Lichigan State University and who is not now enrolled there or at any other institution of higher learning on a full-time basis as of fall term, 1961, without having graduated.

<u>Graduate</u>: One who was enrolled at Michigan State University and is now graduated from it or any other accredited institution of higher learning as of fall term, 1961. Those who are enrolled as graduate students and indicate no major role as employed shall be classified as a student for purposes of this study.

<u>Student</u>: One who was once enrolled at Michigan State University and is now enrolled there or at any other institution of higher learning as of fall term, 1961.

## Outline of the Study

Chapter II is devoted to a review of the literature. Attention is given to the research in the areas of vocational values and vocational choice.

In the third chapter the methodology and procedures

used in conducting the study are presented. The statistical design and its basic assumptions are outlined. It also includes a description of the instruments used in securing the data for this study.

Chapter IV contains the analysis of the data.

The conclusion, observations and suggestions for additional research are presented in chapter five.

### CHAPTER II

### REVIEW OF RELATED RESEARCH

The purpose of Chapter II is to review selected research pertaining to vocational values, vocational choice, and their interrelationship. Particular note will be taken of those results or inferences bearing upon choice crystallization. A review of all research conducted by using the Vocational Values Inventory will conclude the chapter.

The focus of this review will be directly on the vocational aspects of value and choice. In thus narrowing the scope a broader treatment can be given to the sizeable amount of research literature accruing to these specialized topics. No attempt will be made to present a review of the literature placing these topics in historical or developmental perspective. This has been adequately done by Super (c4) and by Stein (60) in his Ph.D. dissertation.

### Vocational Values and Vocational Choice

Rosenberg (47) and associates conducted the Cornell studies in 1950 and 1952 under a grant from the Carnegie Corporation of New York. A declared major objective in these studies was the investigation of the problem of occupational choices and occupational values. The first study involved a representative sample of 2,758 students in college. The second study was conducted among 4,585 students representative of

eleven universities throughout the United States. A total of 944 Cornellians were re-interviewed in the second study, making possible an examination of trends and changes.

The process of occupational choice among college students is viewed as a series of progressive delimitations of alternatives: 1) The values, orientations and life-styles of middle and upper class families, 2) Sex, race, religion and nationality, 3) Occupational awareness, 4) Reality factors associated with natural physical and mental endowments, 5) Personality needs, 6) Attitudes, 7) Values.

Data were received via specially constructed questionnaires. From a ranking of ten requirements for an ideal job or career six vocational values were grouped by constellations of two through a computed coefficient of correlation. A continuum of psychological distance extends from self-expression values (permits me to be creative and original, to use my special abilities and aptitudes) through people-oriented values (permits me to be helpful to others, to work with people rather than things) to extrinsic reward values (gives me status and prestige, a good deal of money, a stable and secure future). The security value was arbitrarily added as logically falling into the last category.

Ey means of weighted averages occupations were ranked according to the emphases accorded them by the people planning to enter each of them. A hierarchy of occupations was established for each of the value constellations. Ey an analysis of values and choices made in 1950 and again in 1952 two

basic trends were noted: 1) The tendency toward psychological consistency, 2) The suggested tendency that values have a greater effect on change of occupational choice than vice versa. The over-all conclusion was that:

Values are not only determinants of action, but are themselves determined by actions...both values and choices tend to determine one another, and both tend to change in the direction of greater mutual consistency, thereby leading to reduction of conflict (47:24).

Other findings are: that those with a high faith in people stress interpersonal occupational values, whereas those with low faith in people tend to choose impersonal values; that the detached personality tends to prefer creative or self-expressive values, the compliant type tends to move toward people for their own sakes, and the aggressive personality comes to be more nearly identified with extrinsic reward values; that, relatively speaking, women are peopleoriented, men are extrinsic reward-oriented.

Rosenberg (47) also found that vocational values are less likely to change if: 1) Values held are similar to the norms of the given occupational choice, 2) One shares a conservative socio-economic ideology, 3) There is a high career satisfaction, 4) One is a long-range planner, 5) A high degree of proficiency is obtained, 6) The occupational choice is commensurate with the social progress of one's most consistent environment. However, "given a cultural value which is faced by an inexorable economic reality, the individual moves toward the conclusion that the value is not really

important (47:123)." The basic tendency is toward the reduction of psychological tension.

The problem in Rosenberg's study was defined in broad terms as an investigation of the process of occupational choice among college students. The study was primarily descriptive. No attempt to test a theory was made. The instrument used was included in the appendix of the book, with modifications indicated when appropriate to the times and places given. The population was declared to be representative without description or delineation of a basis for the statement.

Roeber (46) declares that the study's rationale would depend on the extent to which it is possible to differentiate vocational values. No source was given for the original list of ten values given a rating. Roeber further insists it is impossible to judge the adequacy of the sample and that it was a dangerous assumption not to differentiate between male and female reactions to the questionnaire when interpreting the results. A wealth of testable hypotheses was generated by the study, however.

A major limitation of the study would seem to inhere in the inconsistency of conclusions derived therefrom. In the original monograph (46:22) it states: "This would suggest that values have a greater effect on change of occupational choice than the other way around (sic)." In a later work (33:259) this statement appears: "Both choices and values appear to exercise approximately equal influence in bringing about the
increase in consistency." In this light Rosenberg (47:81) admits:

One of the most perplexing problems in the study of the occupational choice process is that of figuring out when a decision is actually a final decision. When has an ultimate crystallization taken place? If we are to improve our ability to predict whether or not a student making a certain choice will stick to it, we will have to give very careful consideration to the degree to which his values and his choices are in harmony or conflict.

In postscript, it is further noted that Rosenberg holds technical and/or professional specialization to be an important factor of occupational choice crystallization. Psychological involvement and economic investment augur for a greater stability in both values and choices to accompany the more specialized vocations.

Ginzberg (24) and associates used a modification of the genetic method to trace the different stages through which an individual passes in the process of making an occupational choice. The population sample was limited to white males, Protestant or Catholic, of Anglo-Saxon background, coming from families of \$10,000 to \$12,000 average annual income where both parents were alive and living together. The boys were to be free from overt physical, emotional or intellectual handicap, and have a measured intelligence quotient of 120 or above. The ages ranged from 11 through 24 with selections made at two year intervals from among students at Horace Mann-Lincoln School and Columbia University. In addition 17 boys from a deprived economic background and 10 girls from Barnard

College were used in certain aspects of the study.

The interviewing technique was used eight times at each of the eight stages in the educational process, for a total of 64 in the main group. It was an exploratory study of the patterns of occupational decision-making. Based as it was on relatively few cases, it yielded only tentative conclusions.

The process of making an occupational choice is divided by Ginzberg into three distinct periods: 1) Fantasy period. ages 6 through 11, 2) Tentative period, early and late adolescence. 3) Realistic period, early adulthood. The basic elements in a general theory of occupational choice are that it is a process, largely irreversible, and subject to inevitable compromise between the individual and his environment. Specific reference to the role of goals and values in regard to occupational choice is identified with the verbalizations of fifteen and sixteen year-olds. Their attention focuses on the returns from work, the values inherent in work. and at this particular stage, on the time perspective required for an adequate preparation for work. Later there is regard for the concomitants of work in terms of people, i.e., as associates or supervisors.

Enotional factors having a direct bearing on the process of occupational choice are declared by Ginzberg to be: 1) Reality testing, 2) Development of a time perspective, 3) Postponement of gratification, 4) Compromise. Dominant values distinguish the work-oriented type of personality from the pleasure-oriented type. The former is usually active in

resolving the problem of occupational choice. The latter is usually passive, letting outside forces propel one into a choice.

This study attempts to develop a general theory of occupational choice. Tiedeman (66) in his critical review of this study suggests that despite stated cautiousness, the authors are more confident about the age ranges than their data warrants. He notes that it is a definitely privileged population sample. He believes that the defining of deviation in terms of the theory presented is a bit premature when the basic data is on only 64 selective individuals. That compromise is inevitable is a truism. It can be said that the genetic method was used only by virtue of retrospection. It is Tiedeman's considered judgment that it is only because the theory squares so well with experience and general psychological knowledge that any credulity is to be accorded it.

The study does provide a valuable theoretical framework for the conservation of human resources.

Most important for the present study is the definition given to the concept of choice crystallization. "Crystallization is the process whereby the individual is finally able to synthesize the many forces, internal and external, that have relevance for his decision (24:107)." The first step in this pivotal concept seems to be an awareness of personal propensities and the recognition of the kind of work one wishes to avoid. The second step is a translation of this propensity into an actual choice. It is a commitment. It is character-

ized by a quality of acceptance which contrasts with the confused hyperactivity of the exploratory phase immediately preceding. Whereas other earlier phases of the process of occupational choice would be correlated chronologically, crystallization varies with age according to the idiosyncrasies of the individual personality and the concomitants of external reality factors. The actual process of choice crystallization is best observed in retrospect. It is held to be the culmination of the entire choice process and its most important ingredient.

It should be noted that pseudo-crystallization is a recognized phenomenon. Such choices are supported by key personalities in the individual's immediate environment, by strong role expectations and other external pressures, or by basic emotional difficulties in which there is inadequate self-awareness. In Allport's (2) terms, the proprium is not the functioning factor in choices of this kind. A stable value system is unlikely to be found in support of such choices. A value system incongruent with that of the occupational image is a tentative predication of pseudo-crystallization.

Super (64:65) and associates projected a Career Fattern Study beginning in 1951-52. Continuing for about a 20 year period, it is the aim of the study to observe the vocational behavior of a group from relatively early in the choice-making process, i.e., before any attempts are made to translate the self-concept into vocational terms. It was further decided

to limit the study to boys because they tend to have a clearer occupational role and to assume more occupational continuity than girls.

The sample therefore consists of 138 eighth grade boys and 142 ninth grade boys from the public schools of Middletown, New York. The latter serves as the core group or main source of data while the former is used for special purposes within the project. A very thorough analysis of Middletown itself was made. A series of 26 tests, questionnaires and ratings were administered. Some of these, including the work Values Inventory were especially constructed for this study. Interviews of the boys and of the parents were fully recorded on tape. The material presented (65) is based on data from 105 boys in the ninth grade because inadequate information was gleaned from the other 37.

The Work Values Inventory used in this study is a test about "attitudes" toward work. It is a paired comparison inventory designed to measure the relative strength of fifteen presumed values: creative, aesthetic, planning, theoretical, variety, independence, supervision, work conditions, associations, way of life, social welfare, security, material, prestige and mastery. It was constructed by Donald E. Super, assisted by Davis, Warnath and Hana. The test-retest reliability on 25 boys in the eighth grade was ascertained through a rank-order correlation to be .81. The number of scores above or below chance levels for each boy were summed to yield an index in this area of testing.

For ninth grade boys this index did not correlate significantly with any aspect of dimensions 1 (Orientation to Choice), 3 (Consistency of Vocational Preferences), and 6 (Wisdom of Preferences). In dimension 2 (Information and Planning) there was a correlation significant at the .01 level with "extent of planning activity". In dimension 4 (Crystallization of Traits) there was a correlation at the .01 level with "rewards of work". In dimension 5 (Vocational Independnece) there was a correlation with "auspices of work" at the .05 level of significance. It is concluded that dimension 4 (Crystallization of Traits) which includes the work Values Inventory is apparently inadequate as an index of vocational maturity in ninth grade boys.

The process of vocational development is seen as an ongoing and generally irreversible. It is an orderly, patterned process which lends itself to predictability. It is a dynamic process which incorporates the past into the present in the light of the future. Integrative vocational adjustment produces long-range satisfactions for the self as a socialized individual. There is acknowledgement of an interaction reminiscent of Rosenberg's value-choice dilemma:

The degree of vocational maturity attained by an individual was viewed as determined in part by his vocational adjustment, for adjustment requires a behavioral repertoire which is a function of development. At the same time, the nature or quality of an individual's vocational adjustment was seen as a determinant of his vocational maturity, for adjustments made facilitate or impede the development of new modes of the individual's behavior appropriate to his new life stages (65:71).

The study is a descriptive exploration of the basis for

a theory of vocational development. It is comprehensive in scope and genetically projected. The instruments are well defined although not fully reproduced, especially in the cases where they were constructed for this study. The sample and its environment are clearly delineated, although somewhat arbitraril, chosen for the convenience of the researchers. The techniques used are described in full. Samples of the structured interviews are given in the appendices. Many suggestions for further research are amply pointed out by the authors.

The major limitation of the study is that it is as yet a hypothetical construct. In fact, it will not even be completed for about another 10 years. However, its longitudinal aspect should prove a major contribution to the understanding of the process of vocational development.

Choice crystallization per se is deferred in favor of identifying stable or unstable career patterns. A career pattern is the sequence of occupations held by an individual or group throughout the working life span. These patterns may be characterized as stable (early achievement of stability), conventional (series of trial jobs followed by a stable job), unstable (trial jobs, temporary stability, and then more trial jobs), and multiple trial (unbroken series of trial jobs). Whereas Ginzberg views implementation of a vocational choice as a consummate compromise, Super would prefer to use the word "synthesis". This word is applied to the more or less continuous aspect of what Super holds to be

essentiall, a learning process. Vocational entry is seen in this light to be merely one more step in playing a role via which there is a developmental implementation of the selfconcept.

O'Conner and Kinnane (41) conducted a study in which they factor analyzed work values for the purpose of identifying their parameters. They used a modified version of Super's Work Values Inventory, recasting it into a four-point rating scale. The values were described as important aspects of deciding about a job. A total of 191 undergraduate men at Catholic University constituted the sample. The results were factor analyzed by the complete centroid method until six factors were extracted. These are: Factor A (Security, Economic, Material), Factor B (Social, Artistic), Factor C (Work Conditions, Associates), Factor D (Heuristic, Creative), Factor E (Achievement, Prestige), and Factor F (Independence, Variety).

It was concluded that Ginzberg's three-way classification was too broad and contains work values relatively independent of each other. On the other hand, Super's 15 categories of work values are too discrete. It is suggested that a more homogeneous grouping of items in the Work Values Inventory could be ordered on the basis of this study.

It is by no means a random sampling on which this study was made. Generalizations in almost any plane would need to be recognized as extremely tenuously based. There is an added weakness in the assumption of parity of definition of values between Ginzberg, Super and the authors. There may be further

reason for discrepancies of interpretation of this analysis due to the variant ages of the respective samples. The authors seem to be unaware of the Cornell study in which only seven values are grouped in constellations similar to Ginzberg's. The recommendations of the study are not necessary in the light of the fact that they have already been achieved in Rosenberg's work and in the Vocational Values Inventory, not as modifications of Super's categories, but in their own right.

warren (70) found that changes in college major were not likely to occur when a discrepancy existed between the selfconcept and the expected occupational role. Using a sample of 525 male National Merit Scholarship winners who entered over 200 different colleges as freshmen in 1956, the frequency of occurence of agreements between the self-concept and occupational role was taken as the norm. The self-concept was obtained by means of the Omnibus Personality Inventory. The occupational role was reflected in the rating of 13 sources of job satisfaction. No statistical significance differentiated the self-concept from occupational role among those making no change in major, a minor change, or even a major change. However, further scrutiny of the data revealed that differences significant at the .05 level were to be found between single major changes in college major, a major and minor change, or a double major change. It was found that a low grade point average tended to differentiate those making changes. Most significant for this dissertation is the additional observation that high scores on the Thinking Intro-

# TABLE 2:1

# RELATIONSHIP OF WORK VALUE GROUPINGS\*

Super's Groupings	Ginzberg's Groupings Work Itself Outcomes Concomitants
Theory	D
Mastery	BE
Creativity	D
Planning, Supervision	B
Variety	F
Social	B
Artistic	D
Economic, Katerial	A
Security	A
Prestige	E
Independence	C E F
Conditions of Work	C
Associates	C
Boss	A
Way of Life	E F

\* From O'Connor and Kinnane (41)

version Scale also tended to differentiate the subjects. Those having high scores reflected more independence in making a change. Low scorers tended to be influenced by external, objective conditions. It could be concluded that scoring high on the Thinking Introversion Scale was tantamount to an indication of propriate striving.

This study tends to make a worthy contribution to the research in this area. While the major hypothesis was not substantiated with this particular population, valuable alternative observations were made. Strong and Feder's (61:170) statement in their critique of the literature regarding the measuring of the self-concept is appropriate:

Every evaluative statement that a person makes concerning himself can be considered a sample of his self-concept, from which inferences can be made about the various properties of that self-concept.

Stephenson (59) investigated whether the concept of crystallization of occupational choice should be associated with the ability to make a preference statement (Ginzberg) or with the entry into a reality-tested situation (Super), whether it be professional school attendance or in a remunerative position. He theorized that an independent criterion of crystallized occupational choice was needed other than the expressed preference statement. Super's dictum of the implementation of a self-concept via occupational choice was chosen as the criterion under investigation.

Medicine is the most rigidly prescribed pre-professional training area. Has the self-concept of the pre-medical stu-

dent crystallized before application to a school of medicine? This was the problem presented for research.

The sample was taken from among bona fide applicants to the University of Einnesota School of Medicine out of the College of Liberal Arts during the fall quarters of 1947-51. Of 770 applicants, 363 were not admitted at this school at the time of readiness. These non-admitted individuals were the sample used.

From a return post-card questionnaire it was found that 78 now held the E.D., 30 held the D.D.S., and 121 more held medically related degrees. This remarkable consistency among those originally refused admittance to the medical school of their choice was taken as evidence of the persistence of the implementation of a self-concept. Such evidence, it is averred, argues for the crystallization of occupational choice prior to making application to medical school. It would tend to support Ginzberg's thesis rather than Super's.

The point of this study seems well taken. Another criterion of crystallization is needed. The study is deficient in that probability models were not used. How many of these subjects would have evidenced the implementation of a particular self-concept by chance alone? The sample is well-defined and could be considered suitable to the problem. Generalizations to other populations and to other less rigorous areas of occupational choice should be restricted.

Small (57) propounds the theory that the determination of a vocational choice must take into account the ego strength of the individual. His major assumption is that all people

tend to seek satisfaction of their basic needs in every major aspect of life, including the choice of a vocation. Is this action dominated by fantasy or tempered by it? Small hypothesizes that individuals with different ego strengths will show differences in the use they make of reality and wishful thinking in making a vocational choice.

A sample of ten "adjusted" and ten "maladjusted" boys was selected at each of five age levels 15-19. To assess the reality content of each vocational choice, each subject was rated on a four point (0-3) scale. This scale was assigned to the personal characteristics important to the several job classifications found in Part IV of the Dictionary of Occupational Titles. A rating was given each boy for his first and second choice. Among the better adjusted, the second choice tended to be less realistic than the first choice. Among the more maladjusted, the opposite tended to be true. Fantasy dominates the first choice of the maladjusted. Contrary to Ginzberg, Small found no linear relationship between age and reality. To make the same or similar vocational choice is held to be an ego function. It suggests an economy of self-perception in which the limit's of one's potential success are in awareness.

To assess the fantasy content of each vocational choice a job-awareness or job-concept interview was conducted to ascertain the fantasies about occupations. To check against the interview content, 15 TAT cards were used and the responses scored on the same scale as the interview content. It was

found that the comparison group sought out ego-involvement with the environment and used skills, talents and intelligence to do so. The disturbed group tended to turn away from the environment and to restrict ego expression.

The more disturbed showed significant agreement between needs expressed in their job-concepts of first and second choices. This might be expected where these two choices were similar. But the disturbed made fewer similar choices and more often sought similar need satisfactions from dissimilar situations.

The implications are that fantasy and reality factors operate simultaneously at all ages in the selection of a vocational choice. To effect a compromise the reality perceptions of the individual are needed to curb, integrate or redirect the impulses generated by fantasy. This is an ego function.

This study is important for its emphasis on the function of ego strength in the process of vocational choice. A better description of the basis on which the sample was chosen could have been given. The hypothesis is adequately stated in the light of the theory held. The methodology was clearly described, but the results were not tested against chance. This study is worthy of further investigation.

Research with the Vocational Values Inventory

The Vocational Values Inventory was developed as an instrument of measurement by Buford Stefflre of Michigan State

University, and Leland Johnson and Stanley Singer, psychological consultants of Sherman Oaks, California. In its current form as printed in 1958 it consists of 168 forced choice items and is scored to yield seven measurements of values.

The seven scores of the inventory are indicative of the seven postulated basic values which are:

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

Stefflre (53) reports on the concurrent validity of the Vocational Values Inventory when used with the Mooney Froblem Checklist and personal history information obtained from a group of 112 high school seniors. Since not all personal history information was obtained from every student, the usable number of students varied in the several correlations.

It was found that a biserial correlation for self-reali-

zation existed for a boy aspiring to a wnite collar position rather than for a boy whose objective was blue collar work. A student whose father is a white collar worker places more importance upon altruism and control than does the child of a blue collar worker. Students planning to go to college had positive correlations in the value placed on self-realization and altruism and negative correlations in the value placed on money as compared to the emphasis on values placed by students not planning to go to college. Students making "A" and "B" marks placed a higher value upon altruism and significantly lesser value on control and money than do "C" and "D" students. Girls who do not plan on immediate marriage after high school graduation are less concerned with security and more concerned with prestige than are girls who plan to be married soon after graduation.

he significant relationships were found among either boys or girls when an analysis was made by rank order correlation of the number of problems checked on the Mooney Problem Check List as it related to Vocational Value Inventory scores.

It was concluded that job freedom may not be a definable or important value since it did not significantly relate to any of the members of the groups in the areas of attempted validation. Problems and values could well be considered as two independent dimensions of the high school personality. In confirmation of earlier research it was further concluded that for those of middle class background, plan or achievement is associated with concern for altruism and self-realization.

For those of lower class background, plan or achievement is associated with security and money.

Euch work in replication and use with a variety of populations is acknowledged as necessary to the acceptance of the Vocational Values Inventory as a useful instrument. It does possess the quality of introducing students to certain fundamental considerations of the meaning which work has for them. The instrument does mediate between the broad dimensions of Ginzberg's analysis and the discrete dimensions of Super's. While a review of the literature is the acknowledged source of the postulated values, no basis was suggested, statistical or otherwise, for the selection of these particular dimensions.

Stein (6C) conducted a concurrent validity study using the Vocational Values Inventory as the instrument for his doctoral dissertation research. He sought to determine specifically whether students planning to enter different occupations tended to vary in their values. He also was concerned with whether students from different socio-economic levels tended to vary in their values. Possible differences between men and women's system of values as measured by this particular instrument were a final object of inquiry.

The sample used was drawn from social science classes of the basic college at Michigan State University. It consisted of 261 males and 175 females for a total of 436. All were approximately the same age. The sample was selected "on the basis of expediency and convenience."

Reliability coefficients ranged from .69 to .91 on the several value indices using Hoyt's method, a modification of

the Kuder-Richardson formula. When considered as a battery of tests these scores were accepted as meaningful for analysis.

Of the 16S items fourteen for women and six for men were found which did not measure the property which they were supposed to measure.

It was found that among men only altruism, money and control significantly differentiated vocations. Altruism was a distinguishing value between men selecting teaching and social welfare from those selecting engineering and the "don't know" category. Money as a value was useful in differentiating between engineers and business men on the one hand and teachers on the other. Those men selecting selling as a vocation had greater control test scores than those selecting social welfare, forestry or medicine. Likewise those choosing managerial work have greater control sub-test scores than those selecting medicine. All these were significant at the .01 level.

Among women altruism, prestige and control significantly differentiated among the vocations chosen. women selecting nursing, social welfare and teaching had greater altruism scores than those selecting selling, journalism and artistic work. Frestige differentiated women choosing journalism from those electing artistic work, social welfare, teaching, nursing and selling. Women who were interested in a career in sales had a higher control sub-test score than all other selected vocations. All these were significant at the .05

level.

Money differentiated the upper class for men and prestige, the upper class for women, from among the various socio-economic levels. No other sub-test scores were significantly different for any other socio-economic level.

It was apparent that men scored significantly in a different manner than the women on the Vocational Values Inventory. Validity was not registered for the men on six items, for the women on fourteen items. In addition men scored higher on the values of money, job freedom and control. Women scored higher on the values of altruism and self-realization.

Using an accompanying questionnaire Strein evaluated the concept of choice crystallization on the basis of the measure of congruency between fantasy based and expectationally based vocational choices. When viewed in this perspective men appeared to sustain more congruency and therefore seemed to have achieved crystallization more significantly than women.

This problem was well defined and the hypotheses adequately stated. However, the arbitrary selection of the sample used militates against the significance of the statistical inferences derived therefrom. Sub-group samples were admittedly too small in many instances to give meaningful results to the inquiries made. Helpful suggestions for further study with the use of this instrument were presented in conclusion.

Stefflre and Leafgren (54) used the Vocational Values

Inventory as one of a battery of instruments in a study of counselors and clients. The sociometric problem of similarity of personality among mutual choices, mutual rejections and random pairs was the point of inquiry. It was hypothesized that mutual choices would be most alike, random pairs next most alike, and mutual rejections least alike.

The sample consisted of forty graduate students enrolled in a National Defense Education Act Guidance Institute at Michigan State University. All were either school counselors or secondary teachers preparing to be counselors. They had spent five months together in training. By a Q-sort form of selection eleven pairs of mutual choice, and eleven pairs of mutual rejection were obtained. From a table of random numbers eleven non-mutual pairs were selected.

The Vocational Values Inventory as well as other instruments used failed to differentiate significantly between the three groups. All observed differences could well have been associated with chance. The conclusion tended to support the thesis that from a client-counselor standpoint, choices were made on a "better than" rather than an "equal to" basis. The self-ideal rather than the self-concept of the present seemed to be the motivating factor.

Using the same sample Stefflre, King and Leafgren (56) attempted to ascertain the characteristics of effective counselors. Via the same Q-sort method the peer group chose those whom they would be most likely to go to for counseling. The top nine of a normal distribution were designated "chosen" and the bottom nine were designated "rejected". It was as-

sumed that "chosen" may be equated with effective and that "rejected" may be equated with "ineffective".

In the area of values as measured by the V.V.I. it was found that effective counselors could not be discriminated from ineffective counselors.

In yet another study Stefflre and Leafgren (55) investigated the value differences between counselors and administrators. In an exploratory study they hypothesized that counselors would be higher than administrators on the values of altruism and self-realization perforce of their respective occupations. Administrators on the other hand were held to score higher on the values of control, job freedom, money and prestige. No prediction was made regarding the value called security.

The sample of forty counselors is the same as in the two previously reviewed studies. The twenty-three administrators were all employed as superintendents or principals and were working for advanced degrees in school administration.

T-tests were significant at the .01 level to sustain the hypothesis regarding counselors. They could be differentiated from administrators by the values of altruism and self-realization. While job freedom and prestige did not distinguish administrators, control and money values did at the .01 and .05 levels respectively. Security was not significant in either case.

while the problems presented generated hypotheses that were theoretically plausible, results must remain tentative and generalizations held to a minimum in the light of the

small and highly selective samples used. These three studies indicate well the type of work of which the V.V.I. is capable. Further research with the use of this instrument should tend to reveal additional facets of the fascinatingly practical problem of the relation of vocational values to vocational choice.

#### Summary

A critical review was presented of the research literature relating to vocational values, vocational choice, and their interrelationships. The problems, hypotheses, methodology, techniques of analysis, findings, conclusions and generalizations for the several pertinent studies were examined and evaluated.

Several important conclusions were produced by this review:

1. There is a recognized need for investigating the interrelationship of vocational values and vocational choice.

2. There is a further need for one or more external criteria for choice crystallization.

3. A general theory of vocational choice is open to further research and analysis.

4. It is possible to view the concept of choice crystallization as a "crisis in vocational commitment".

5. The ramifications of a theory of vocational values has its analogues in a theory of personality.

### CHAPTER III

### DESIGN OF THE STUDY

The study is designed to test differences in the level of stability of vocational values with a view to ascertaining the area of vocational choice crystallization among a selected population of drop-outs, graduates and students associated with Michigan State University.

### The Null Hypotheses

The basic research hypotheses stated in Chapter I are here cast in their null form for the purpose of statistical testing and analysis.

## Null Hypothesis 1:

There is no difference between the mean deviations of each of the seven values held by drop-outs, graduates, and students, as measured by the Vocational Values Inventory.

The symbolic representation for null hypothesis 1 is:

H<sub>1</sub>:  $\mathcal{M}\mathcal{D}$  drop-outs =  $\mathcal{M}\mathcal{D}$  graduates =  $\mathcal{M}\mathcal{D}$  students where  $\mathcal{M}\mathcal{D}$  = the average deviation between the 1959 and the 1961 scores for the several values.

## Null Hypothesis 1 Sub-a:

There is no difference between the mean 1959 and

the mean 1961 scores for the several values as held by <u>drop-outs</u>.

The symbolic representation for null hypothesis 1 sub-a is:

 $H_{1a}$ : M-1959 score = M-1961 score where M = the mean of the 1959 or 1961 scores of the several values as held by drop-outs.

Null Hypothesis 1 Sub-b:

There is no difference between the mean 1959 and the mean 1961 scores for the several values as held by graduates.

The symbolic representation for null hypothesis 1 sub-b is:

 $H_{1b}$ : M-1959 score = M-1961 score where M = the mean of the 1959 or 1961 scores of the several values as held by graduates.

Null Hypothesis 1 Sub-c:

There is no difference between the mean 1959 and the mean 1961 scores for the several values as held by students.

The symbolic representation for null hypothesis 1 sub-c is:

 $H_{1c}: M-1959 \text{ score} = M-1961 \text{ score}$ where M = the mean of the 1959 or 1961 scores of the several values as held by <u>students</u>.

<u>Alternate Null Hypothesis 1:</u>

The mean of the sum of the squared deviations of

the value systems held by drop-outs will not exceed that mean held by graduates which will in turn not exceed that mean held by students.

The symbolic representation for alternate null hypothesis 1 is:

AH<sub>1</sub>:  $\xi D_m^2$  drop-outs  $\equiv \xi D_m^2$  graduates  $\equiv \xi D_m^2$  students where  $D_m^2$  = the mean of the sum of the squared differences between the 1959 and the 1961 scores for all seven values. Null Hypothesis 2:

There is no difference in the number of changes in vocational choice held by drop-outs, graduates and students as indicated by them on successive questionnaires.

The symbolic representation for null hypothesis 2 is:

<sup>H</sup>2: f drop-outs = f graduates = f students where f = the frequency of the number of changes in vocational choice indicated by drop-outs, graduates and students.

Null Hypothesis 3:

There is no difference between the mean deviations of the several vocational values held by drop-outs, graduates and students who make no change in vocational choice, and there is no difference between the mean deviations of the several vocational values held by dropouts, graduates and students who make a change in vocational choice.

The symbolic representation for null hypothesis 3

is:

change change change change H<sub>3</sub>:  $\mu o$  drop-outs =  $\mu o$  graduates =  $\mu o$  students no change no change no change  $\mu o$  drop-outs =  $\mu o$  graduates =  $\mu o$  students where  $\mu o$  = the average deviation between the 1959 and the 1961 scores for the several values as held by those who do and those who do not make changes in vocational choice among drop-outs, graduates and students.

### <u>Alternate Null Hypothesis 3:</u>

There is no significant difference in the number of those making a change or not making a change in vocational choice among those whose summed squared deviations are below or above the median of drop-outs, graduates or students respectively.

The symbolic representation for alternate null hypothesis 3 is:

477	non-change	non-change
AH3:	I Delow median = I	drop-outs)
	change	non-change (graduates)
	I above median = I	above median (students)
where f = the	frequency of the	number of those in the
respective ca	tegories among dro	p-outs, graduates and
students.		

Related sub-hypotheses written in the null form are: <u>Null Hypothesis a</u>:

There is no difference between the mean 1961 scores of each of the several values as held by those indicating a change into a new vocational choice and that vocation's 1961 occupational value image, or between that occupation's value image of 1961 and that of 1959.

The symbolic representation for null hypothesis a is:

H: M changers = M 1961 occupational image M 1961 occupational image = M 1959 image

where M = the mean of the scores of the several valuesas held by those indicating a given occupational choiceas of the times indicated respectively.

• Null Hypothesis b:

A

There is no difference between the mean deviations of each of the several values as held by males and females among the drop-outs, graduates and students.

The symbolic representation for null hypothesis b is:

H<sub>b</sub>: *MD* males = *MD* females (drop-outs) *MD* males = *MD* females (graduates) *MD* males = *MD* females (students) (totals)

where  $\mu 0$  = the average deviation between the 1959 and the 1961 scores for the several values as held by males and females among drop-outs, graduates, students and totals.

Null Hypothesis b1:

There is no difference between the mean deviations of each of the several values as held by changers and non-changers of vocational choice, whether male, female or totaled members of the drop-out, graduate or student groups respectively.

The symbolic representation for null hypothesis b<sub>1</sub> is:

```
H<sub>b1</sub>: Mo changers = MO non-changers (male drop-outs)
(male graduates)
(male students)
(female drop-outs)
(female graduates)
(female students)
(total drop-outs)
(total graduates)
(total students)
```

where  $\mu D$  = the average deviation between the 1959 and the 1961 scores for the several values as held by the changers and non-changers of occupational choice in each of the categories indicated respectively.

Null Hypothesis ba:

There is no difference between the mean deviations of each of the several values as held by dropouts, graduates and students, whether male or female indicators of change or no change in vocational choice respectively.

The symbolic representation for null hypothesis  $b_2$  is:

H<sub>b2</sub>: µ0 drop-outs = µ0 graduates = µ0 students (male changers) (male non-changers) (female changers) (female non-changers)

where  $\mu O$  = the average deviation between the 1959 and the 1961 scores for the several values held by drop-outs, graduates and students in each of the categories indicated respectively.

### The Sample

The various hypotheses were tested on a sample of dropouts, graduates and students associated with Michigan State University. Inasmuch as this is a longitudinal study, the entire population as previously selected was polled.

In the spring of 1959 Dr. Jacob Stein conducted a concurrent validity study of the Vocational Values Inventory. His sample was selected at that time from among students at Michigan State University "for reasons of expediency and convenience". With the aid of Dr. Douglas Dunham of the Social Science department sixteen classes of Social Science 233 were used. Out of 528 students tested, incomplete information on the instruments used reduced the workable and therefore tabulated sample to 36 students. However, only 422 IBM cards were found to be available for the present work. Thus there were 254 males and 168 females all of whom were in the same age range approximately. According to Stein their socio-economic background could be considered as five per cent upper class, seventy per cent middle class and twenty per cent working class. This conclusion was based on an analysis of the subject's own answers to question three of a questionnaire used in the concurrent validity study.

The sample as described becomes the population for this study. With the passage of time it is now divided into

three distinct groups. There are 118 drop-outs, 140 graduates and 164 students as of the fall term, 1961. The entire constituency of each classification was used, with follow-up procedures diligently striving for an 80 per cent return.

### Sample Returns

From an International Business Machine card file of the concurrent validity study the names, student numbers, and other pertinent data were obtained for this study. Current addresses were ascertained with the aid of the registrar's office and the alumni office of Michigan State University.

After the design of the study was approved each subject was mailed the following:

a. One copy of the Vocational Values Inventory

- b. One answer sheet (machine form A)
- c. One copy of a questionnaire
- d. One stamped, self-addressed envelope
- e. Cne letter explaining the data requested

Follow-up procedures included one post card, one letter by the examiner, one letter of encouragement to answer, signed by the examiner's academic advisor, one complete re-mailing of the instruments to those who had not yet filed a return, and one final letter by the examiner. A total of 317

returns were filed, or 75 per cent of the total population. Of this number six were incomplete in some vital detail and were therefore not used.

The workable number of subjects for this study is thus 173 males and 138 females, a total of 311. Since all of the population had an equal and independent opportunity to be included in the sample. it may be considered a validly random sampling (35).

#### Instrumentation

The Vocational Values Inventory (see appendix A) consists of 168 forced choice items and is scored to yield seven measurements of values. These values have been enumerated and defined on page 36 of this study.

Stein (60) found that the reliability coefficients for each of the several value indices ranged from .69 to .91 when computed according to Hoyt's modification of the Kuder-Richardson formula. When considered as a battery of tests, these scores are accepted as a meaningful indication of the reliability of the instrument.

In spite of the maturation effect inevitable to the test-retest method of determining reliability the product moment correlations between the 1959 administration of the inventory and the 1961 administration of the inventory were calculated. Table 3.1 shows intercorrelations for the total sample. Table 3.2 shows the means and standard deviations of the total sample. Appendices contain tables of the in-

TABLE 3.1

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PRODUCT MOMENT INTERCORRELATIONS OF THE 1959 AND THE 1961 SCORES FOR THE TOTAL SAMPLE ON THE VOCATIONAL VALUES INVENTORY (N-311)

				1959							1961			
1959	A	C	ЪF	Σ	പ	S	SR	A	D	ЧL	Ø	Ч	62	60 F
Altruism Control Job Freedom Money Prestige Security Seif-realization	* • • • • • • • • • • • • • • • • • • •	*				- بارج ا	-							
1961														
Altruism Control Job Freedom Money Prestige Security Self-realization		*16 		т <u>* , , , , , , , , , , , , , , , , , , ,</u>	*		1				- 60 - 60 	<sup>1</sup> - 080		۲.

\* = .05 level of significance \*\* = .01 level of significance

		INVEN (N =	TORY 311)	
	Means*	1959 S <b>ta</b> nda <b>r</b> d Deviations	Means*	1961 Standard Deviations
A	12.91	6.52	13.70	6.33
С	9.43	4.12	10.49	4.63
JF	12.22	4.42	12.51	4.47
Μ	9.68	5.74	9.34	5.56
P	11.20	4.39	10.56	4.15
S	9.67	4.86	7.80	5 <b>.13</b>
SR	18.95	3.27	19.55	2.99

TABLE 3.2

MEANS AND STANDARD DEVIATIONS OF THE 1959 AND 1961 SCORES FOR THE TOTAL SAMPLE ON THE VOCATIONAL VALUES INVENTORY

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

tercorrelations and means and standard deviations for various groupings within the sample.

Using .14 as the minimum correlation score significantly greater than zero at the one per cent level of significance, it will be seen that all the scores, ranging from .43 to .67, indicate that each of the sub-tests is highly reliable even on a test-retest basis.

In this light it was considered unnecessary to determine the internal consistency of the inventory by means of an item analysis.

The concurrent validity of the Vocational Values Inventory was the object of studies by both Stefflre (53) and Stein (60). Using a rank order correlation coefficient for stated values derived from a separate questionnaire, Stein found no significant difference between it and a rank order coefficient for the tested value scores on the Vocational Values Inventory when both were converted to Z scores and subjected to the "t" test.

When the item validity was tested by Stein using the modified form of tetrachoric correlation, it was found that fourteen items for women and six items for men did not measure the property which they were supposed to measure. In spite of this indication of the necessity for revision of the instrument, it was used in this longitudinal approach in the interests of consistent analysis.

Accompanying the Vocational Values Inventory was a simple questionnaire (see appendix B) designed to elicit certain

basic categories of information and classification. The answer to question 1b in the light of the answers to questions 4 through 8 or 9 through 11 ascertained whether the subject was a drop-out, graduate or student. The word "drop-out" did not appear on the questionnaire for obvious reasons. Question 3 was designed to confirm, if possible, the area of occupational choice for 1959. This was necessary because the grouping into larger categories, even in the light of the indicated major, was often a matter of value judgment.

Questions 4 through 8 conveyed to the examiner an indication of the area of present occupation and whether the one so employed considered it a change in occupational choice from that designated in 1959. Questions 9 through 11 conveyed the same information for students in the form of a second expectational choice. In some instances the indicated change in major aided in the classification according to areas of occupational choice.

### Methods of Statistical Analysis

The Vocational Values Inventory yields seven ipsative scores. Forced choices among the several items adds to one score when taken from another. Therefore the scores lack independence. In addition, the instrument was used twice on the same subjects so that the samplings lack independence. This dual lack of independence excluded the use of more elegant statistics including such attempts at profile analysis as that made by Cronbach and Gleser or Osgood and Suci.
Therefore the "t" test for small samples was used on consecutive combinations of data to ascertain differences between means. While normality of distribution and equality of variances are the basic assumptions underlying this model, McNemar (35) notes that assurance regarding the meeting of these assumptions can seldom be attained.

Where comparison of the frequency of characteristics or combination of characteristics was occasioned, the chi square test of independent discrepancies was used. As a non-parametric statistic their use is analagous to the testing of the significance of the difference between means. The assumptions for the use of chi square are: 1) That the discrete series of chi squares calculated in practice can approximate the continuous distributions on which the probability tables are based, 2) That the sampling distribution about a given expectancy follows the normal distribution curve, and 3) That the observations be independent of one another.

Whenever the chi square statistic was used it was found convenient to dichotomize the sample above and below the median of the ordered sums of the squared differences between any two given scores. This is indicated throughout the study as  $\leq D^2$ .

### Summary

The methodology integrally related to procedures and analysis of this study have been presented in this chapter. The research hypotheses of chapter one have here been recast

into their null form. The sample was described as consisting of those whose tabulated participation in a 1959 concurrent validity study was available in 1961 for this longitudinal study. The entire sample became the population polled from whom returns were received at the rate of 75 per cent. This sample is made up of 118 drop-outs, 140 graduates, and 164 students as of the fall term, 1961.

The Vocational Values Inventory and an accompanying questionnaire were administered by mail to the total population. The inventory was scored by the scoring service of the office of evaluation services at Michigan State University. All of the data was processed by the high speed electronic digital computer, MISTIC, to yield the product moment correlations, the means and standard deviations for the various groupings and totals.

The "t" test and chi square test are to be used to analyze the data in the light of the lack of independence between scores on an ipsative scale, and between the administrations of the same test to the same subjects. The five per cent level of significance is accepted as the point at which the null hypotheses will be rejected.

#### CHAPTER IV

#### ANALYSIS OF THE DATA

In this chapter the data from the 1959 administration of the Vocational Values Inventory is analyzed and compared with the data from the 1961 administration of the Vocational Values Inventory. In every instance the hypotheses presented in Chapter III are tested seven times, i.e., for each of the seven values, in the light of the fact that there is no profile statistic with which to present them otherwise. For convenience in assessing them after the manner of a profile, however, the results shall always appear in alphabetical order of the values considered: altruism, control, job freedom, money, prestige, security, self-realization.

#### Null Hypothesis 1

THERE IS NO DIFFERENCE BETWEEN THE MEAN DEVIATIONS OF EACH OF THE SEVEN VALUES AS HELD BY DROP-OUTS, GRADUATES, AND STUDENTS, AS MEASURED BY THE VOCATIONAL VALUES INVENTORY.

H<sub>1</sub>: MO drop-outs = MD graduates MD students In order to test this hypothesis the deviations between the 1959 and the 1961 scores, regardless of sign, were summed across each classification for each of the seven values. Table 4.1 shows the results of the "t" test applied in turn to the mean deviations of drop-outs and graduates, drop-outs and students and graduates and students, for each of the values.

TABLE	4.	1
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TESTED DIFFERENCES BETWEEN THE MEAN DEVIATIONS HELD BY DROP-OUTS GRADUATES, AND STUDENTS FOR EACH OF THE VALUES

Values	Between			
	Drop-outs & Graduates (N=40 drop-	Drop-outs & Students outs, 129 gradu	Graduates & Students ates, 142 students)	
Altruism	.166	.406	025	
Control	2.133*	•954	-1.928	
Job Freedom	• <b>5</b> 30	<b>1</b> 60	-1.000	
Money	•745	241	-1.125	
Prestige	.833	•536	454	
Security	285	050	•35 <b>7</b>	
Self-Realization	1.450	.363	-1.750	

\* significant at the .05 level

All "t" values, except one, failed to reach that required for the .05 level of significance. Therefore the null hypothesis 1 must be accepted. Such differences between means as do exist must be considered to have occurred by chance alone. A change in values does not discriminate between drop-outs, graduates, and students on the whole. That Control differentiates drop-outs from graduates may be interpreted as commensurate with the tendency to compensate for circumstances leading to the status of drop-out. If these circumstances were beyond his control, or if delinquent grade cards seemed to be exercising a tyrannical control, it may be predicated of the drop-out that independence of control will be more highly valued.

## Null Hypothesis 1,

THERE IS NO DIFFERENCE BETWEEN THE MEAN 1959 AND THE MEAN 1961 SCORES FOR THE SEVERAL VALUES AS HELD BY <u>DROP-OUTS</u>.

 $H_{1a}$ : 1959 scores = 1961 scores

Table 4.2 shows the results of the comparison of the mean 1959 and 1961 sub-test scores for male, female and total drop-outs. Again in every instance save one the null hypothesis must be accepted. Values tend to remain very stable even for those who must give up their academic pursuits. The positive nature of the "t" value for Security at the .05 level indicates that it was valued more by drop-outs in 1959 while they were yet students than in 1961. This could be interpreted as a potential clue to his dropping-out of school. If longterm work assumed a disproportionate illusion of security, the

TABLE 4	4	•2	
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TESTED DIFFERENCES BETWEEN THE MEAN 1959 AND THE MEAN 1961 SCORES FOR THE SEVERAL VALUES AS HELD BY DROP-OUTS

Values	Male (N=22)	Female (N=18)	Total (N=40)
Altruism	.317	.100	<b></b> 3 <b>3</b> 3
Control	.062	-1.666	-1.063
Job Freedom	.150	652	400
Money	.000	•305	.207
Prestige	.663	1.284	•437
Security	1.162	1.050	2.336*
Self-realization	.075	.000	062

\* significant at the .05 level

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prospect of academic probation once every quarter could be very threatening. That the drop-out tends to value Security less as a wage-earner suggests that he is now somewhat disillusioned.

# Null Hypothesis 1b

THERE IS NO DIFFERENCE BETWEEN THE MEAN 1959 AND THE MEAN 1961 SCORES FOR THE SEVERAL VALUES AS HELD BY GRADUATES.

 $H_{1b}$ :  $\mu$  1959 scores =  $\mu$  1961 scores

Table 4.3 shows the results of the comparison of the mean 1959 and 1961 sub-test scores for male, female and total graduates. The null nypothesis must be rejected for Control on the part of males and total graduates. for Security on the part of females and total graduates, and for Job Freedom on the part of females. In these instances the values named do discriminate between the graduate and his undergraduate perspective. According to the sign of the "t" value, the graduate male and again the total graduate sample values control more in 1961 than he did in 1952. This could mean that he relishes the executive qualities of the work for which his college degree has qualified him. The graduate female, on the other hand now disdains the Securit / which she. as well as the total graduate sample, so highly valued in 1959. Is the kind of security afforded by an occupation or career discovered to be not the kind of security characteristically desired by females? If this is so, it is significant that Job Freedom distinguishes the graduate female from her under.

TABLE	4.3

TESTED DIFFERENCES BETWEEN THE MEAN 1959 AND THE MEAN 1961 SCORES FOR THE SEVERAL VALUES AS HELD BY GRADUATES

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Values	Male (N=57)	Female (N=72)	Total (N=129)
Altruism	-1.131	<b></b> 845	-1.171
Control	-2 <b>.7</b> 53**	783	-2.358**
Job Freedom	1.410	-2.015*	541
Money	1.100	•973	1.285
Prestige	.037	1.179	.884
Security	1.637	2.434**	2.854***
Self-realization	903	-1.400	<b>-1.</b> 529

\* significant at the .05 level \*\* significant at the .02 level \*\*\* significant at the .01 level graduate counterpart. Creativity asserts itself, it would seem, on the job as well as in the home.

Null Hypothesis 1

THERE IS NO DIFFERENCE BETWEEN THE MEAN 1959 AND THE MEAN 1961 SCORES FOR THE SEVERAL VALUES AS HELD BY <u>STUDENTS</u>

H<sub>1c</sub>:  $\mu$  1959 scores =  $\mu$  1961 scores

Table 4.4 shows the results of the comparison of the mean 1959 and 1961 sub-test scores for male. female and total students. The null hypothesis can be rejected in three instances. Control and Security for male students, and Selfrealization for female students. On an ipsative scale the male student seems to indicate that there is a reciprocal relationship between Control and Security. It is likewise reflected in the same direction among total graduates. There is more value placed on Control in 1961 and less value placed on Security. That more value was placed on Security in 1959 by total drop-outs, female and total graduates, as well as by male students suggests a coordination reflective of a trend influenced other than by academic or vocational matters. Female students now very near graduation could well value the opportunity for creative self-realization more in 1961 than in 1959, whether in a career or in the home. This essentially female tendency shares present emphasis with graduate female valuation of Job Freedom, if indeed Self-realization my be considered the creative complement to Job Freedom.

TA	BLE	4.	4
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TESTED DIFFERENCES BETWEEN THE MEAN 1959 AND THE MEAN 1961 SCORES FOR THE SEVERAL VALUES AS HELD BY STUDENTS

Values	Male (N=94)	Female (N=48)	<b>Total</b> (N=142)
Altruism	<b>-1.</b> 464	.083_	487
Control	-2.516**	.018	<b>93</b> 6
Job Freedom	1.044	-1.774	081
Money	200	140	-1.153
Prestige	-1.174	1.458	.881
Security	3.121***	1.716	1.891
Self-realization	795	-2.605**	937

\*\* significant at the .02 level \*\*\* significant at the .01 level

#### Alternate Null Hypothesis 1

THE MEAN OF THE SUM OF THE SQUARED DEVIATIONS OF THE VALUE SYSTEMS HELD BY DROP OUTS WILL NOT EXCEED THAT MEAN HELD BY GRADUATES WHICH WILL IN TURN NOT EXCEED THAT MEAN HELD BY STUDENTS.

AH<sub>1</sub>:  $\[ \] D_m^2 \] drop-outs = \[ \] D_m^2 \] graduates = \[ \] D_m^2 \] students$ No statistic was found whose assumptions could be met in order that this hypothesis could be tested against chance. However, since the arithmetical means of the squared deviations of the value systems do seem to indicate that, if they could be tested by some devised statistic, the null hypothesis could be rejected. Table 4.5 is herein recorded. As propounded in Chapter I it was theorized that because of the impact of reality shocks, drop-outs would show less stability, i.e., vary farther from no change, or zero  $D_{I\!I\!I}^2$  , than graduates. They, in turn, would show less stability than students. The mere arithmetical total means confirm this theory, -- but only for those who have made a change in vocational choice. For those who have made no change in vocational choice the figures show a systematic reversal of theory. The null hypothesis as stated would have to be accepted. In anticipation of null hypothesis 3, therefore, a discernable tendency of relationship appears between stability of vocational values and stability of vocational choice. Low change in vocational values tends to characterize no change in vocational choice and therefore identifies vocational values as a criterion of crystallization of vocational choice. No change in vocational choice supported by low change in vocational values would seem

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TABLE	4.	5
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# MEAN SUM SQUARED DEVIATIONS OF THE VALUE SYSTEMS HELD BY DROP-OUTS, GRADUATES AND STUDENTS

Classification	N	Changers	Vocat	tional No Changers
Male Drop-outs	14	153.00	8	128.12
Female Drop-outs	17	210.00	1	79.00
Total Drop-outs	31	184.25	9	122.66
Male Graduates	20	221.60	37	130.65
Female Graduates	<b>1</b> 4	122.00	58	124.67
fotal araduates	34	180.58	45	126.76
Nale Students	27	91.54	67	145.45
Female Students	11	190.33	37	145.26
Total Students	38	161.73	<b>1</b> 04	145.33
Total Males	ć <b>1</b>	192.01	112	149.64
Total Females	42	139.01	96	132.20
Totals	103	174.73	108	135.87

to indicate that the vocational choice was made by the proprium.

Drop-outs making no vocational change are the most stable in their vocational values. Those drop-outs who do make a vocational change are the most unstable value-wise.

According to these arithmetical means the theory that males are more realistically (and therefore more stable) oriented is not supported.

Graduate and student females do not support the main hypothesis when considered by themselves. Drop-out females have insufficient representation to be conclusive.

Being very aware that these facts and figures have not been tested against chance, it is cautiously suggested that the null hypothesis would be rejected and that the main theory presented in Chapter I would be supported.

### Null Hypothesis 2

THERE IS NO DIFFERENCE IN THE NUMBER OF CHANGES IN VOCA-TIONAL CHOICE AS INDICATED BY DROP-OUTS, GRADUATES AND STUDENTS ON QUESTIONNARIES.

 $H_{0}$ : f drop-outs = f graduates = f students

Using the chi square test of independence on non-parametric data, it can be shown that differences between the observed and expected frequencies of change in vocational choice exist at the .01 and .001 level of significance for female and total drop-outs. Table 4.6 indicates that in all other cases the null hypothesis must be accepted. No expected frequency is less than 5.

Classification	Obs <b>erve</b> d f	Expected f	x2#
CHANGES			
Male Drop-outs	14	7.75	5.04
Female Drop-outs	17	5.46	24 <b>.39***</b> *
Total Drop-outs	31	13.18	24.09****
Male Graduates	20	20.07	.02
Female Graduates	14	21.88	2.83
Total Graduates	34	43.05	1.90
Male Students	27	33.12	1.13
Female Students	11	14.57	.87
Total Students	38	46.97	1.71
NO CHANGES			
hale Drop-outs	8	14.22	2.72
Female Drop-outs	1	12.48	1C.56***
Total Drop-outs	9	26.62	11.66***
Male Graduates	37	36.85	.00
Female Graduates	58	50.01	1.27
Total Graduates	95	86.94	•94
Male Students	67	60.81	.62
Female Students	37	33.31	•40
Total Students	104	94.85	.88

CHANGES AND NO CHANGES IN VOCATIONAL CHOICE AS INDICATED BY DROP-OUTS, GRADUATES AND STUDENTS IN 1961.

# 2 d.f. \*\*\* significant at .0! \*\*\*\* significant at .001

TABLE 4.6

Female and total drop-outs who change their vocational choice do so in each instance much more than would be expected by chance alone. On the other hand, female and total dropouts who do not change their vocational choice do so in each instance at a frequency much less than would be expected by chance alone. It is suggested that this could be interpreted in accordance with the discussion under alternate null hypothesis 1. Female drop-outs in particular and total dropouts generally who tend to make few changes in vocational choice do so because that choice is supported by a stable value system. A fluctuating value system betrays itself in lack of propriate striving and more changes in vocational choice than would be ordinarily expected. Drop-outs tend to be victimized by their environment more than graduates or students if they are unaware of their value systems and act accordingly.

#### Null Hypothesis 3

THERE IS NO DIFFERENCE BETWEEN THE MEAN DEVIATIONS OF THE SEVERAL VALUES HELD BY DROP-OUTS, GRADUATES AND STUDENTS WHO MAKE NO CHANGE IN VOCATIONAL CHOICE, AND THERE IS NO DIFFERENCE BETWEEN THE MEAN DEVIATIONS OF THE SEVERAL VALUES HELD BY DROP-OUTS, GRADUATES AND STUDENTS WHO DO MAKE A CHANGE IN VOCATIONAL CHOICE.

H<sub>3</sub>:  $\mu^{\rho}$  drop-outs =  $\mu^{\rho}$  graduates=  $\mu^{\rho}$  students no change no change no change no change  $\mu^{\rho}$  drop-outs =  $\mu^{\rho}$  graduates=  $\mu^{\rho}$  students

Again because of the lack of independence the hypothesis must be tested serially for each of the seven consecutive values. In Table 4.7 it is shown that whether making a change

### TABLE 4.7

TESTED DIFFERENCES BETWEEN THE MEAN DEVIATIONS OF THE SEVERAL VALUES AS HELD BY DROP-OUTS, GRADUATES AND STU-DENTS WHO MAKE CHANGES IN VOCATIONAL CHOICE, AND WHO MAKE NO CHANGES IN VOCATIONAL CHOICE.

Values		B <b>et</b> ween	
	Drop-outs Gradua <b>te</b> s	Drop <b>-out</b> s Students	Graduates Students
FOR CHANGERS:			
Altruism	666	350	.320
Control	.542	.760	.200
Job Freedom	657	812	175
Money	457	125	<b>.27</b> 5
Prestige	.255	•525	.271
Security	325	314	.183
Self-realization	1.965	1.095	973
FOR NON-CHANGERS:			
Altruism	<b>.7</b> 83	1.952	400
Control	<b>.10</b> C	.428	-2.055***
Job Freedom	.425	.110	945
Money	.044	591	-1.630
Prestige	037	240	<b></b> 552
Security	375	.000	409
Self-realization	<b>3</b> 85	862	-1.312

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\*\*\* significant at the .01 level

in vocational choice or not making a change in vocational choice, with but one exception, the null hypothesis must be accepted. On the whole values do not differentiate between drop-outs, graduates and students whether they make a change in vocational choice or do not make a change. The one exception indicates that Control would distinguish students from graduates among those who make no change in vocational choice. Significantly at the .01 level, the student more than the graduate values work where he is "boss". When it is remembered that Table 4.2 showed that Control distinguishes both graduates and students in 1961 over against 1959, it would seem that this value, more than others, is being cultivated at the frontiers of our culture.

### Alternate Kull Hypothesis 3

THERE IS NO SIGNIFICANT DIFFERENCE IN THE NUMBER OF THOSE MAKING A CHANGE OR NOT MAKING A CHANGE IN VOCATIONAL CHOICE AMONG THOSE WHOSE SUMMED SQUARED DEVIATIONS ARE BELOW OR ABOVE THE MEDIAN OF DROP-OUTS, GRADUATES OR STUDENTS RES-PECTIVELY.

	~	change	non-change	
AH <sub>3</sub> :	I	below median = I	below median =	arop-outs
		change	non-change	students
	f	above median = f	above m <b>edia</b> n	

As an alternate way of investigating and testing the relationship between vocational values and vocational choice, the chi square test of independence was used. Table 4.8 shows the results for each of the three classifications of subjects. According to the rationale presented in Chapter I the more stable vocational values would characterize both changers

CHANGES AND NO CHANGES IN VOCATIONAL CHOICE AMONG THOSE BELOW AND ABOVE THE MEDIAN OF SUMMED SQUARED DEVIATIONS

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Classification	Observed f	Expected f	<sub>χ</sub> 2#
Drop-outs			
Changers Below Median	17	15.5	<b>.1</b> 45
Changers Above Median	14	15.5	<b>.1</b> 45
Non-changers Below Median	. 3	4.5	• <b>50</b> 0 -
Non-changers Above Median	. 6	4.5	.500
Graduates			
Changers Below Median	13	16.83	.782
Changers Above Ledian	21	17.09	.894
Non-changers Below Median	51	47.17	.279
Non-changers Above Median	44	47.91	•319
Students			
Changers Below Median	17	18.95	.200
Changers Above Median	21	18.95	.221
Non-changers Below Median	54	52.05	.073
Non-changers Above Nedian	50	52.05	.080

# 1 d.f.

and non-changers of vocational choice. Less stable values would characterize both changers and non-changers of vocational choice. The null hypothesis designed to test this theory must be accepted. The theory is not supported by this analysis. Since the median of the summed squared deviations was an arbitrarily selected point of delineation, the data might well be judged arbitrarily not significant. This points to the need of a criterion for the stability of vocational values themselves, if in turn they are effectively to serve as a criterion of crystallization of vocational choice.

#### Null Hypothesis a

THERE IS NO DIFFERENCE BETWEEN THE MEAN 1961 SCORES OF EACH OF THE SEVERAL VALUES AS HELD BY THOSE INDICATING A CHANGE INTO A NEW OCCUPATIONAL CHOICE AND THAT VOCATION'S 1961 OCCUPATIONAL VALUE IMAGE, OR BETWEEN THAT OCCUPATION'S VALUE IMAGE OF 1961 AND THAT OF 1959.

> Ha: M changers = M 1961 occupational image M 1961 occupational image = M 1959 image

Five representative occupations were arbitrarily selected to test this hypothesis on the basis of the fact that they had the largest number of new entries in 1961. They are: 1) teaching, 2) business, 3) medical, 4) managerial, and 5) sales.

The null hypothesis is phrased within the limitations of the necessary statistical assumptions. Theory suggests that the 1959 value image, containing as it does the contributions of those who subsequently leave the expected choice, may differ in a significant way from the 1961 value image. This theory is augmented by the fact that the 1961 value image contains not only those who sustained their choice, but also those who chose to enter it in 1961. If values are more stable than choice, the values of a propriately made choice should, even when changed, closely approximate the value image of the occupation. Self-awareness now finds its complement in vocational awareness. Theoretically, such a change in choice should be buttressed by a value system that changes less than the occupational value image itself under the above conditions. By this means the area of choice crystallization would tentatively be identifiable. The results shown in the following tables should aid in confirming or denying this theory.

Table 4.9 reflects results obtained from the teaching profession. The null hypothesis in regard to the value image of the profession must be rejected if indeed a profile interpretation is being made. For both Security and Self-realization would discriminate between teachers of 1959 and teachers of 1961. The occupational value image has changed. Teachers of 1961 are less concerned with Security and greatly more concerned with Self-realization than in 1959.

On a profile basis the null hypothesis must also be rejected with regard to changers and the 1961 occupational image. Security distinguishes the occupational image from the value system of the new entry.

To the extent that it is less certain (.05 level) that Security characterizes the difference between the new entry and his new occupation's value image than it is (.01 level)

### TABLE 4.9

TESTED MEAN SCORES FOR THE SEVERAL VALUES CONSTITUTING THE 1959 AND 1961 OCCUPATIONAL VALUE IMAGES FOR TEACHING AND THE VALUE SYSTEMS OF NEW ENTRIES THERETO.

		Between	
Values	1959 Image 1961 Image	1959 Image Entries	1961 Image Entries
Altruism	<b>57</b> 5	.225	.866
Control	.000	<b></b> 550	500
Job Freedom	-1.491	-2.313*	503
Money	•791	-1.208	-1.633
Prestige	•745	645	-1.065
Security	2.641***	3.718****	2.183*
Self-realization	-3.153***	858	.800

•

\* significant at the .05 level \*\*\* significant at the .01 level \*\*\*\* significant at the .001 level

that Security characterizes the difference between the 1959 and the 1961 occupational value image, the research hypothesis tends to be confirmed.

To the extent that only Security differentiates the former while Security and Self-realization differentiate the latter, the research hypothesis tends to be confirmed.

To the extent that the new entries differ from the 1959 occupational value image, with greater certainty (.001 level) on Security as a differentiating value, and with Job Freedom as an additional differentiating value, the research hypothesis tends to be confirmed.

New entry teachers are therefore likely to make a change in vocational choice as the result of propriate striving. No drop-outs made such a change. Seven graduates and eleven students did make such a change. With four of the seven graduates indicating a change in major as well as a change in choice, the academic area may be closely identified with the crystallization of occupational choice.

Table 4.10 portrays the results given by business careerists. The null hypothesis must be rejected with regard to no change in the occupational value image from 1959 to 1961. It must also be rejected when new entries are compared with the 1961 occupational value image. But whereas Prestige characterizes the first comparison, Job Freedom is an attribute of the second. No disagreement is recorded as occurring beyond chance probability, however, between the value system of the new entry and the 1959 occupational value image. If

### TABLE 4.10

TESTED MEAN SCORES FOR THE SEVERAL VALUES CONSTITUTING THE 1959 AND 1961 OCCUPATIONAL VALUE IMAGES FOR BUSINESS AND THE VALUE SYSTEMS OF NEW ENTRIES THERETO.

	Between			
Values	1959 Image	1959 Image	1961 Image	
·	1961 Image	Entries	Entries	
		<del></del>		
Altruism	-1.404	-1.265	365	
Control	-1.923	<b>-1.</b> 854	583	
Job Freedom	.483	-1.790	-2.081*	
Koney	217	.447	1.318	
Frestige	2.120*	1.762	1.318	
Security	1.857	1.996	•5 <b>7</b> 2	
Self-realization	708	.441	.100	

\* significant at the .05 level

the occupational value image has changed between 1959 and 1961, and if the new entry is differentiated from the 1961 image but not from the 1959 image, business minded careerists tend to make changes dictated by the times more than by value systems per se. His choice is unlikely to have been made through propriate striving and the pivotal aspect of choice crystallization tends to be a yet future event. It is significant that no graduate was recorded as a new entry to the field of business.

The medical profession is known for its period of preparation. Results shown in Table 4.11 are tenuously based on only three new entries. However, they are consistent and significant in the light of the facts in the figures. The null hypothesis must be accepted for the value image of the medical profession as a whole. It tends to remain very stable as characterized by the value systems of those who choose it at one time or another. The null hypothesis must be rejected under profile consideration when Prestige delineates the new entry from the 1961 occupational image. Prestige also delineates at the same level of significance the new entry from the 1959 occupational image. The distinguishing value is in itself a stable one. The sign of the "t" test indicates that the new entry is much less concerned with Prestige than is the profession as a whole. If he had made the choice in 1959 the new entry would have also been less concerned with Security than the profession. In 1961 he tends to conform by not being differentiated from the pro-

### **TABLE 4.11**

TESTED MEAN SCORES FOR THE SEVERAL VALUES CONSTITUTING THE 1959 AND 1961 OCCUPATIONAL VALUE IMAGES FOR MEDICINE AND THE VALUE SYSTEMS OF NEW ENTRIES THERETO.

	Between			
Values	1959 Image	1959 Image	1961 Image	
	1961 Image	Entries	Entries	
Altruism	-1.021	168	•564	
Control	-1.717	498	1.805	
Job Freedom	.061	.267	1.726	
Money	<b>•95</b> 9	1.737	-1.751	
Pre <b>stige</b>	•536	3 <b>.371**</b> *	3.138***	
Security	1.759	2.272*	•506	
Self-realization	734	-1.593	-1.200	

\* significant at the .05 level \*\*\* significant at the .01 level

fession on this value other than on the basis of change alone. Therefore, the new entry betrays a stable discontinuity and an unstable conformity with the profession, while the value image of the occupation remains stable. This could be interpreted as an instance of anticipatory socialization of values. Having greatly desired to enter the profession, a pre-medical student's value system tends to be molded by his perception . That this data and interpretation is based on results from only three subjects must be kept in mind.

Table 4.12 reveals that Salesmen, also, present a stable occupational image. The null hypothesis must be accepted that no value would characterize Salesmen of 1959 different ly than Salesmen of 1961. Ten new entries to the occupation. however, are consistent in being differentiated from the vocation both in 1959 and again in 1961 by an accent on Securi-The null hypothesis that new entries are not to be disty. tinguished by their value system from the 1961 occupational value image must be rejected. In that it is a stable value system that delineates the entry Salesman from his stable occupational image, his choice could well be interpreted as propriately made. Again students are proportionately higher in making this change in vocational choice. The area of choice crystallization is before being graduated, if stability of values is to be considered a criterion of this event.

The fifth vocation to be considered is managerial. In Table 4.13 the figures indicate that both aspects of the null hypothesis must be rejected. The occupational value

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### TABLE 4.13

TESTED MEAN SCORES FOR THE SEVERAL VALUES CONSTITUTING THE 1959 AND 1961 OCCUPATIONAL VALUE IMAGES FOR SELLING AND THE VALUE SYSTEMS OF NEW ENTRIES THERETO.

		Between	
Values	1959 Image	1959 Image	1961 Image
	1961 Image	Entries	Entries
Altruism	1.657	1.326	.131
Control	-1.323	-1.807	.722
Job Freedom	413	-1.067	1.388
Money	138	301	.422
Prestige	1.163	1.350	•350
Security	.048	-2.065*	<b>-</b> 2 <b>.05</b> 5*
Self-realization	-1.333	1.637	633

\* significant at the .05 level

### TABLE 4.12

TESTED MEAN SCORES FOR THE SEVERAL VALUES CONSTITUTING THE 1959 AND 1961 OCCUPATIONAL VALUES IMAGES FOR MANAGING AND THE VALUE SYSTEMS OF NEW ENTRIES THERETO.

	Be <b>tween</b>				
Values	1959 Image	1959 Image	1961 Image		
		Entries			
Alt <b>rui</b> sm	-1.784	720	.171		
Control	<b>-1.</b> 444	2.688**	3.930****		
Job Freedom	.000	531	537		
Money	193	.177	.291		
Prestige	1.512	1.262	.146		
Security	3.556***	2 <b>.</b> 59 <b>3*</b> *	•753		
Self-realization	-1.102	-1.176	-1.134		

\*\* significant at the .02 level \*\*\* significant at the .01 level \*\*\*\* significant at the .001 level

image of 1959 is to be distinguished by its significantly greater emphasis on Security both from the image of 1961 and from the new entries of 1961. On the other hand Control is more of a factor to the occupational value image of 1959 and 1961 than it is to the new entry. Whether the new entry is more like the 1961 occupational image than that image is like the 1959 image could be decided in this instance as follows: It is more likely that Control identifies the new entry in 1961 (.001 level) than in 1959 (.02 level). It is less likely that Security would have identified the new entry in 1959 (.02 level) than it would have identified the occupational value image in 1959 (.01 level). Therefore the new entry tends to be distinguished from the 1961 occupational value image more than the 1961 image tends to be distinguished from the 1959 image. The research hypothesis does not tend to be confirmed in this instance.

To summarize this null hypothesis: It is noted that new entries do have differences in the mean deviations of some of the values held and therefore in every vocation the null hypothesis must be rejected. It is further noted that teaching, business, and managerial vocations are unstable in their occupational value image. Again the null hypothesis must be rejected. It may be accepted, however, for the medical profession and the salesmen. As an interpretation the theory that new entries, making changes in vocational choice against a background of stable values, would differ less from the occupational value image of 1961 than that image differs from

1959, was supported most strongly by teachers. Salesmen also tended to confirm this viewpoint. Business careerists seemed to make changes dictated by the times and therefore supported the theory obversely. The medical profession's three new entries appeared to reflect anticipatory socialization. It was concluded that the managerial vocation tended to disprove the theory. The area most likely identified with choice crystallization is the student classification.

#### Null Hypothesis b

THERE IS NO DIFFERENCE BETWEEN THE MEAN DEVIATIONS OF EACH OF THE SEVERAL VALUES AS HELD BY MALES AND FEMALES AMONG THE DROP-OUTS, GRADUATES AND STUDENTS.

Table 4.14 shows that there is significant difference at the .05 level between the 1959 and 1961 scores for any of the several values which would differentiate the males from the females of any of the classifications. The null hypothesis must be accepted. Therefore, while males may respond to the Vocational Values Inventory differently from the females at a given administration, males tend to vary with females on successive administrations.

### Null Hypothesis b1

THERE IS NO DIFFERENCE BETWEEN THE MEAN DEVIATIONS OF EACH OF THE SEVERAL VALUES AS HELD BY CHANGERS AND NON-CHANGERS OF VOCATIONAL CHOICE, WHETHER MALE, FEMALE OR TOTALED MEMBERS OF THE DROP-OUT, GRADUATE OR STUDENTS GROUPS RESPECTIVELY.

TABLE 4	. 1	4
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TESTED DIFFERENCES BETWEEN THE MEAN DEVIATIONS OF EACH OF THE SEVERAL VALUES AS HELD BY MALES AND FEMALES.

Values	Drop-outs (N=22 male) (N=18 female	Graduates (N=57 male )(N=72 female	Students ) (N=94 male) e)(N=48 female	Totals (N=173 mal )(N=138 fema
Altruism	.200	1.454	.780	1.315
Control	<b>-1.</b> 459	1.621	-1.191	.000
Job Freedom	-1.928	.487	•440	.181
Money	265	1.367	<b>.7</b> 70	1.368
Prestige	700	1.121	-1.820	<b>6</b> 96
Security	1.554	<b>•58</b> 9	<b>.7</b> 28	1.128
Self-realiza	tion .769	1.935	.761	1.846

Hb1: male drop-outs male graduates male students **UD** non-changers female drop-outs changers = female graduates female students total drop-outs total graduates total students

In Table 4.15 it is revealed that the null hypothesis must be accepted for females and for total membership in the three classifications. No value held in 1959 deviated significantly from 1961 to differentiate between changers and nonchangers of vocational choice among females or total dropouts, graduates or students. This also holds true for male drop-outs. However, for male graduates and male students the null hypothesis must be rejected for three of the values at .05, .02, and .01 levels of significance. Control has been seen under null hypothesis 1 to differentiate the drop-out from the graduate. Under null hypothesis 1h Control has been seen to discriminate between 1959 and 1961 graduate male perspective and to be weighted in favor of 1961. Here Control distinguishes the changers among the male graduates from the non-changers of vocational choice. The changers are also to be characterized by a difference in how they feel about Job Freedom and Security as vocational values. The male graduate changer, of whom there are 20 out of 57 total male graduates, or 35 per cent, could be interpreted as the most clearly delineated representative of Allport's opportunistic personality. Whereas this study has confirmed that, on the whole, vocational values tend to remain stable, changes in three out of seven
## TABLE 4.15

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TESTED DIFFERENCES BETWEEN THE MEAN DEVIATIONS OF EACH OF THE SEVERAL VALUES AS HELD BY CHANGERS AND NON-CHANG-ERS OF VOCATIONAL CHOICE AMONG DROP-OUTS, GRADUATES AND STUDENTS, WHETHER MALE, FEMALE OR TOTALS.

	Change	ers vs Non-chan	zers
Classification	Drop-outs	Graduates	Students
	(N=40)	(N=129)	(N=142)
Males:			
Altruism	.464	.920	.466
Control	1.458	2.952***	1.358
Job Freedom	-1.025	2.628**	2.391**
Money	.250	1.142	.487
Prestige	.014	.442	.550
Security	.653	2.344*	.414
Self-realization	.833	1.388	260
Females:			
Altruism	805	.026	245
Control	216	.350	114
Job Freedom	-1.040	.030	-1.488
Money	.706	.350	420
Prestige	.586	.182	363
Security	.860	554	180
Self-realization	.602	200	-1.708
Totals:			
Altruism	725	.304	.383
Control	1.490	1.064	1.279
Job Freedom	.172	.618	1.383
Money	.800	.600	.257
Prestige	.636	.275	647
Security	.551	.126	350
Self-realization	.940	<b>3</b> 91	997

\*\* significant at the .02 level \*\*\* significant at the .01 level

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seven of these values by any one group significantly beyond the probabilities of chance could be most revealing of a meaningful countertrend. Could the male graduate changer represent that personality who makes a career out of college days?--Who considers the cloistered ivy-covered halls of education a mode of achieving maturity apart from assuming responsibility for the privileges thereof? If this is so, his career environment could yet be molding him until that moment of crystallization of vocational choice is reached in which he is likely to be characterized by a more stable value system.

Job Freedom is found to be a delineator between male student changers from non-changers of vocational choice. Inasmuch as this change is one of expressed expectational choice made apart from the reality shocks identified with entering the world of work, such a change could well be interpreted in the light of the principle of Merton's anticipatory socialization of values. Male students who change their expected vocational choice in the light of a new appreciation for Job Freedem may well be anticipating a relief from the regimen of term paper deadlines and multiple choice exams.

## Null Hypothesis b2

THERE IS NO DIFFERENCE BETWEEN THE MEAN DEVIATIONS OF EACH OF THE SEVERAL VALUES BY DROP-OUTS, GRADUATES AND STUDENTS, WHETHER MALE OR FEMALE INDICATORS OF CHANGE OR NO CHANGE IN VOCATIONAL CHOICE RESPECTIVELY.

Hb2: Modrop-outs = up graduates = up students male changers female changers female non-changers female non-changers

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According to the results shown in Table 4.16 the null hypothesis must be accepted in each instance except two. Job Freedom differentiates between drop-outs and graduates among male changers of vocational choice. Control does likewise between graduate and student male non-changers of vocational choice. Control has been seen under null hypothesis bi to delineate changers from non-changers of vocational choice among graduates. Now among non-changers the male graduates are to be distinguished from the male students. The sign of the "t" value indicates that it is weighted in favor of the student. In other words, among males the student non-changer sees Control as a work value to be prized more than does the graduate non-changer but less than the graduate changer. This could yet be interpreted as reflecting Control as being cultivated at the frontiers of our culture beyond the matters academic or vocational. Could its cause be that world state of affairs in which authoritarianism compels its opponents to tend to reflect that authoritarianism in defense of themselves?

Job Freedom significantly separates drop-outs from graduates among male changers of vocational choice. The deviation is more pronounced among graduates according to the sign of the "t" value. This is not what might have been expected. It would seem again to be a reflection of the "college careerist" who is willing to let the environment determine his destiny as long as he thinks he remains free to be molded in his own image.

## **TABLE 4.16**

TESTED DIFFERENCES BETWEEN THE MEAN DEVIATIONS OF EACH OF THE SEVERAL VALUES AS HELD BY DROP-OUTS, GRADUATES, AND STUDENTS, WHETHER THEY BE MALE OR FEMALE, CHANGERS OR NON-CHANGERS OF VOCATIONAL CHOICE.

		Between	
Classification	Drop-outs	Drop-outs	Graduates
	Graduates	Students	Students
Male Changers:			
Altruism	800	655	.321
Control	364	412	.087
Job Freedom	-2.131*	-1.900	328
Money	625	500	.200
Prestige	320	.111	.525
Security	900	.141	.833
Self-realization	-1.200	.157	910
Male Non-changers:			
Altruism	.380	.400	.161
Control	483	-1.700	-2.609**
Job Freedom	1.103	.530	.826
Money	054	392	616
Prestige	040	.400	.830
Security	.402	200	950
Self-realization	817	633	.365
Female Changers:			
Altruism	.209	.333	.212
Control	1.140	1.645	.744
Job Freedom	1.220	1.827	.987
Money	.126	.535	.400
Prestige	.481	.340	119
Security	1.281	.500	-1.292
Self-realization	1.570	1.433	.375
Female Non-changers	:		
Altruism	1.138	1.062	985
Control	1.113	1.322	400
Job Freedom	903	990	.666
Money	718	842	1.354
Prestige	885	794	-1.830
Security	802	878	.685
Self-realization	635	744	-1.463

\* significant at the .05 level \*\* significant at the .01 level



### CHAPTER V

## SUFMARY, CONCLUSIONS AND RESEARCH IMPLICATIONS

### Summary

The major problem of the study was to determine the stability of vocational values and assess them as a potential criterion of vocational choice crystallization. As a longitudinal study the values and choices made by a selected population of drop-outs, graduates and students associated with Michigan State University in 1959 were compared with their values and choices made in 1961. By ascertaining whether vocational choices were supported by stable value systems among drop-outs, graduates and students, the classification could be identified for which the stability of values might serve as a criterion of vocational choice crystallization.

Theoretical assumptions were developed from the research and literature devoted to the areas of vocational values and vocational choice. In the analyses of the implications of the relationship between them the matter of choice crystallization assumed a focal point of interest. It seemed to represent a metamorphosis of personality of singular importance both for the individual and his culture.

From the review of the literature two basic assumptions were made: 1) entering the world of work constituted a reality shock which may have its repercussions on an individual's value system, and 2) entering that world or work as an academic

drop-out would sustain a shock different from entering it as a successful graduate. Students of the population have not sustained such a reality shock and therefore could serve ostensibly as a control group.

The investigation was conducted near the end of the 1961 academic fall quarter. Copies of the instrument and questionnaire were mailed to the total population of 422 subjects for whom 1959 data was available. A 75 per cent return was received after five follow-up procedures were employed.

The Vocational Values Inventory is an instrument of 168 forced choice items, yielding scores for each of seven values in an ipsative manner. The questionnaire assisted in determining the status and nature of vocational choice. The reliability and validity of the inventory were accepted on the basis of results obtained in the concurrent validity study by Stein, with due note being taken of the exceptions with regard to item validity. For consistency of analysis the instrument was used without revision.

Because of the lack of independence between scores on an ipsative type scale, and because of the administration of the same instrument on the same population, the results yielded themselves to analysis serially and consecutively by the "t" test and chi square test for independence. Results were scored and tabulated for product moment correlations, means and standard deviations to be computed on MISTIC, the electronic digital computer at Michigan State University. Other tests were hand-figured.

The three major null hypotheses are: 1) there is no significant difference between the mean deviations of each of the seven values as held by drop-outs, graduates and students, 2) there is no significant difference in the number of changes in vocational choice held by drop-outs, graduates, and students, and 3) there is no significant difference between the mean deviations of the seven values as held by drop-outs, graduates, and students who make no changes in vocational choice. and there is no difference between the mean deviations of the seven values as held by drop-outs, graduates, and students who make changes in vocation choice. Null hypothesis 1 Suba, b, c affirmed that there is no significant difference between the mean 1959 and the mean 1961 scores for each of the seven values as held by drop-outs, graduates, and students respectively. Alternate null hypothesis 1 held that the sum of the squared deviations of the value systems held by drop-outs will not exceed that mean held by graduates which will in turn not exceed that mean held by students. Because of the inability to meet assumptions, the alternate null hypothesis 1 was not tested against chance.

Null hypothesis 1 must be accepted with one exception. While on the whole, values do not distinguish drop-outs, graduates, and students from one another, Control as a vocational value was found to discriminate between drop-outs and graduates. Null hypothesis  $1_{\rm R}$  must likewise be accepted with one exception. Most drop-outs have the same set of values, but drop-outs in 1959 valued Security more than they

did in 1961. Discrimination between the graduate and his undergraduate perspective is afforded by Control on the part of males and totals, by Security on the part of females and totals, and by Job Freedom on the part of females. Null hypothesis  $1_b$  must be accepted in all other instances. Null hypothesis  $1_c$  regarding the delineation of student values in 1959 and 1961 must be accepted in all but three instances: Control and Security for males and Self-realization for females.

Null hypothesis 2 was subjected to the chi square test of independence. It must be rejected on the part of female and total drop-outs who both change or do not change their vocational choice, because in each instance the frequency of change is more than could be expected by chance alone. In all other instances the null hypothesis 2 that there is no significant difference in frequency of changes in vocational choice among drop-outs, graduates and students must be accepted.

Null hypothesis 3 stipulates that there is no difference in the values held by drop-outs, graduates, and students who make changes in vocational choice, or who do not make such changes. With but one exception the null hypothesis must be accepted. Values do not discriminate between drop-outs, graduates, and students, whether changers of vocational choice or not changers of vocational choice on the whole. The one instance where this does not hold true is that Control tends to make a difference between students and graduates among

those who make no change in vocational choice. Alternate null hypothesis 3 must be accepted in its entirety. Assuming that those below the median of the summed squared deviations for the seven values represented those with stable value systems, it was hypothesized that the frequency of changers or nonchangers below the median could not distinguish drop-outs, graduates, and students from changers or non-changers above the median. No distinctions were made.

Null hypothesis a postulates that there is no difference between the value system of new entries to an occupation and that occupation's value image, and that the 1959 and 1961 occupational value images likewise do not differ. Five representative vocations for which adequate data for testing was available were chosen to test this null hypothesis. That new entries can be delineated by some difference in values considered in profile from the new occupational image were found to be so. The null hypothesis must be rejected in every vocation tested. Value images for three of the five occupations changed between 1959 and 1961. The others were stable and the null hypothesis could be accepted.

Null hypothesis b states that there is no difference between the mean deviations of the several values which would discriminate between males and females among drop-outs, graduates, students, or totals. The hypothesis must be accepted, inasmuch as men and women tend to vary together over time. Values do not differentiate between changers and non-changers of vocational choice, whether male or female or totaled mem-

bers of the drop-out, graduate, and student groups respectively, except in four instances: Control, Job Freedom and Security distinguishes the changers among the male graduates from the non-changers of vocational choice. Job Freedom also makes the same distinction for male students. Otherwise null hypothesis b<sub>1</sub> must be accepted. Job Freedom and Control are dynamic in discriminating between several groups when the value systems involved are viewed from the point of view of dropouts, graduates, and students, and also from the point of view of change or no change in vocational value and also for the point of view of male and female. Job Freedom differentiates between drop-outs and graduates among male changers of choice. Control does likewise between graduate and student male non-changers of vocational choice. In all other instances null hypothesis b<sub>2</sub> must be accepted.

## Conclusions

Several conclusions are based on the results of the study:

1. There is no difference in the main between the dropouts, graduates, and students with regard to the stability of the value systems which they hold. The reality shock of entering the world of work, whether on the part of those academically successful or unsuccessful, seems to be held in undue suspect by some. If Control differentiates between drop-outs and graduates, this fact may be due to an over-all cultural

change reflected in this same value under other hypotheses.

2. There are one or more values which tend to delineate within the three classifications. however. Security was more valued by total drop-outs in 1959 than in 1961. Long-term working conditions may have held some appeal that paled the quarterly prospect of probation when they were as yet students. Control for male and total graduates could mean a relishing of the executive qualities of the work for which a college education has qualified them. Graduate females and total graduates now disdain the Security so highly valued in 1959. When it is noted, too, that Job Freedom is more characteristic of the female graduate, it would seem that creativity was asserting itself and that the motherly instinct might be more interested in giving security than receiving it. Even female students indicate that they are more desirous of fulfillment, or Self-realization, in 1961 than in 1959. Control and Security discriminate between 1959 and 1961 male students. A reciprocal relationship is suggested by the fact that more value is now placed on Control and less value is placed on Security. When it is noted that less value on Security is shared by total drop-outs, female and total graduates, and male students, while more value is placed on Control by male and total graduates, and by male students, a

trend influenced other than by matters academic or vocational is suggested. It is tentatively concluded that totalitarian authority demands that there be these shifts in value among democratic peoples as a matter of self-preservation. It is a sweeping cultural change that is the offspring of our times.

3. Lack of testing against probability forces the interpretation of alternate null hypothesis 1 to very tenuous conclusions. Nevertheless, the arithmetical comparison of deviation means is suggestive of relevant observations. Greater change from zero is evidenced by drop-outs than by graduates or students. But this holds only for those who make changes in vocational choice. For non-changers the evidence is for a theory systematically reversed. No change in vocational values seems to be supported by low change in vocational choice . Dron-outs who make no vocational change are the most stable in their vocational values. But those drop-outs who do make a vocational change are the most unstable value-wise. Students are the least likely to vary in vocational values when changers are compared with non-changers. Females tend not to support the theory. Another study subject to more rigorous analysis must be undertaken before these conclusions can be more than speculative.

4. Unly female drop-outs and total drop-outs make a

distinguishing number of changes or non-changes in vocational choice. They tend to be the victims of their environment more than graduates or students, especially if they are unaware of their value systems and act accordingly. That changers among dropouts change more and that non-changers change less is suggestive of the possibility that the value system plays a part. Stable values could lend weight to stable choices, while unstable values could lend weight to unstable choices. As with interests, the more disoriented one is value-wise, the more inappropriate the vocational choice is likely to be.

5. When vocational values interact with vocational choice as far as this sample is concerned, there is no indication on the whole that might lead to demarcations between drop-outs, graduates, and students. Reality shock not only does not seem to affect the stability of values, but it does not tend to affect the stability of choices in relation to those values. Academic success or lack of it is likewise an unhelpful delineator here. Control again appears, this time to identify students as over against graduates. Could they be more aware of a cultural trend than graduates in this swiftly moving world?
6. If the stability of vocational values is taken into account when interacting with vocational choice, no differentiators are evident. It could be postulated that the median was inadequate as criterion of value stability.

- 7. If vocational values tend to be more stable than vocational choice, sustained, even changes in choice made on the basis of a stable value system should reflect the event of vocational choice crystallization. This event is to be more closely identified with students than with graduates or drop-outs. Teachers and salesmen tend to confirm this theory. Businessmen support its obverse by making changes in vocational choice seemingly dictated by the times rather than by a value system. New entries to the medical profession tend to be molded in their values by anticipation of the occupational value image. Can they be said to acting propriately? Managers could be said to disprove the theory.
- 8. While males may tend to respond differently than females to a given instrument of personality testing, this sample of males and females tended to vary coordinately. Values failed to differentiate between them. Changers are to be distinguished from non-changers of vocational choice among male graduates by Control and Security as well as by Job Freedom. The Control-Security reciprocity has already been noted. The male graduate changer is the most likely to be characterized as a representative of Allport's opportunistic personality. He, more than

others, vacilates significantly in three values out of seven. He has yet to come to realistic terms with his own hierarchy of values.

9. When considering all three factors, -gender, -change or no change in vocational choice,-classification as a drop-out, graduate, or student, then values are seen again as predominantly stable. Job Freedom differentiates between drop-outs and graduates among male changers of vocational choice. Control does likewise between graduate and student sustainers of vocational choice. Control continues to take its place as the most dynamic value of this study. Job Freedom might well be a projection of college careerists onto the world of work.

Some general observations might well include the following:

- 1. Generalizations beyond the sample must be considered as tenuous and in need of further validation from a predictive point of view.
- 2. Two values, Altruism and Money, do not significantly differentiate any of the groupings made under any of the hypotheses tested.
- 3. Holding the effects of reality shock in suspect may well be done in the context of action. Verbalizing about what may be perceived as the idealized mode of behavior could be that which is measured by this instrument.

4. The Vocational Values Inventory could well become the instrument of optimum versatility and research, being more discrete than Super's fifteen category omnibus, and more specific than Ginzberg's three category classification. Such an instrument is highly recommended by O'Connor and Kinnane (41).

## Research Implications

This study was based on two theoretical assumptions: 1) that entry into the world of work constituted a reality shock which may have its repercussions in the stability of values, and 2) that entry into the world of work as an academic drop-out would sustain a shock different from entry as a successful graduate. The results of the tested hypothesis do not sustain these assumptions.

The implications for further research are:

1. That values are vastly more stable than perceived. Therefore, more sensitive instruments of discrimination are most likely necessary to effective research in the area of value stability as over against mere determination of values.

2. That verbalizations about values may fail to represent a situation-related course of action. Therefore, some means of authentication seems necessary to validate the findings about values.

3. That an ipsative scale imposes severe limitations to the statistical investigation of values. Therefore, it would seem salutatory to cast the instrument of value inquiry

into some other form.

4. That as a criterion of the stability of values the median break is inadequate. Therefore, it would seem that the search for a criterion of vocational choice crystallization is yet a step removed from the determination of vocational value stability. Could one criterion serve both purposes?

5. That students constitute the focal point of choice crystallization. Emanating from this area, low change in values tends to be characterized by no change in choice, while a high change in values tends to be accompanied by high change in choice. The gradient of incidence of this phenomenon from the vortex of student life to some point of insignificance seems worthy of further investigation.

6. That the theory of the interaction between vocational values and vocational choice needs integration with personality theory. It is suggested that Rosenberg's introduction of Horney's theory tends to undergird the principles of valuechoice interaction. A further elucidation of this theoretical framework should tend to produce cohesiveness in this area.

7. That Self-realization tends to be inclusive of the entire value perspective. Clearer delineation of a seventh value without over-lapping the others would facilitate closer subject discrimination.

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# APPENDIX A

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# VOCATIONAL VALUES INVENTORY

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# 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

# APPENDIX B

# QUESTIONNAIRE

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QUESTIONNAIRE

1.	NameIf graduated, date?
2.	Student number Major?
3.	As best you remember, what was the occupational choice that
	you realistically expected to make and so indicated on a
	similar questionnaire in 1959?
IF	you are NOW employed full time and NOT a student:
4.	What is your present occupation?
5.	What are your duties in brief?
6.	Do you consider your present occupation to be temporary?
	or permanent?
	(IF temporary, to what do you plan to change?
	(IF temporary, when do you plan to make a change?
7.	Do you consider your present occupation to be in the area
	for which your college major prepared you? YesNo
8.	Do you consider your present occupation to be in the area
	of your expected occupational choice as indicated above?
	YesNo
IF	you are NOW a student:
9.	What is the most likely occupational choice that you NOW
	expect to make?
10.	Do you consider your present expected occupational choice
	to be in the area of the expected choice of 1959 as indi-
	cated above? YesNo

11. Have you changed your declared major since spring term of 1959? Yes\_\_\_\_No\_\_\_\_

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# APPENDIX C

## PRODUCT MOMENT INTERCORRELATIONS

## FOR SAMPLE SUB-GROUPS

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\* = .0<sup>c</sup> level of significance. \*\* = .01 level of significance.

RELATIONS OF THE 1959 AND THE 1961 SCORFS INTS ON THE VOCATIONAL VALUES INVENTORY (N=142)	4 5 6 7 8 9 10 11 12 13 14		1 .04 1 .0734 1 .321817 1		$\begin{array}{cccccccccccccccccccccccccccccccccccc$
RODUCT MOMENT INTERCORRELATIONS OF THE 1959 AND THE 1961 FOR THE TOTAL STUDENTS ON THE VOCATIONAL VALUES INVENT (N=142)	1 2 3 4 5 6 7 8 9 10		1 03 14 15 06 .08 13 02 12 18 01 26 07 34 17 1 17 1		$\begin{array}{cccccccccccccccccccccccccccccccccccc$
PR		1959	Altrutsm Control Job Freedom Money Prestige Security Self-realization	<u>1961</u>	Altruism Control Job Freedom Money Prestige Security Self-realization

\* = .05 level of significance. \*\* = .01 level of significance. .

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\* = .0<sup>n</sup> level of significance. \*\* = .01 level of significance.

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РЕС.		1979 Altraism Control Job Freedom Koney Prestige Security Self-realization J961	Altruism Controi Job Freedom Money Prestige Security Self-realization

\* = .05 level of significance. \*\* - .01 level of significance.

## APPENDIX D

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## MEANS AND STANDARD DEVIATIONS

## FOR SAMPLE SUB-GROUPS

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		1959		1961
	Me <b>ans*</b>	Standard Deviations	Neans*	Standard Deviations
A	10.13	5.77	10.86	6.67
C	10.68	4.70	10.77	5 <b>.7</b> 6
JF	13.04	5.68	12.86	4.50
E	11.50	5.65	11.50	5.42
P	9.04	3.77	9.95	3.54
S	11.86	4.67	10.00	5.09
SR	17.90	4.14	18.04	3.79

MEANS AND STANDARD DEVIATIONS OF THE 1959 AND 1961 SCORES FOR THE MALE DROP-OUTS ON THE VOCATIONAL VALUES INVENTORY (N=22)

		1959	19	061
	Means*	Standard Deviations	Means*	Standard Deviations
Å	14.16	7.18	14.38	5.53
С	8.72	4.25	11.22	4.58
JF	11.27	5.06	12.38	4 <b>.84</b>
Μ	8.77	6.56	8.16	5.22
Ρ	10,94	4.18	9.27	3.61
S	11.22	5.23	9.33	5.33
SR	19.22	3.82	19.22	3.11

MEANS AND STANDARD DEVIATIONS OF THE 1959 AND 1961 SCORES FOR THE FEMALE DROP-OUTS ON THE VOCATIONAL VALUES INVENTORY (N=18)

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

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MEANS AN	D STAN	DARD DEV	IATION	5 OF	THE	1959	AND	1961	SCORES
FOR THE	TOTAL :	DROP-OUT:	5 ON T (N=4)	HE V(	CATI	ONAL	VALU	JES 1	INVENTORY.

		1959	19	61
	Means*	Standard Deviations	Means*	Standard Deviations
A	11.95	6.74	12.45	6.43
С	9.80	4.61	10.47	5.27
JF	12.25	5.40	12.65	4.66
M	10.27	6.22	10.00	5.58
P	9.90	4.07	9.65	3.59
S	11.57	4.94	9.70	5.21
SR	18.50	4.05	18.07	3.55

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	Means*	1959 Standard Deviations	1 Means*	961 Standard Deviations
Α	11.26	5.91	12.38	6.50
C	9.43	4.00	11.42	4.58
JF	12.87	3.52	<b>11.8</b> 4	4.26
Μ	11.01	5.26	10.00	5.74
Ρ	11.87	4.60	11.80	֥35
S	8.82	4.03	7.38	5.35
SR	18.73	3.64	19.29	2.93

MEANS AND STANDARD DEVIATIONS OF THE 1959 AND 1961 SCORES FOR THE MALE GRADUATES ON THE VOCATIONAL VALUES INVENTORY (N=57)

	19	59	19	061
	Neans*	Standard Deviations	Means*	Standard Deviations
A	16.33	5.51	16.98	4.83
С	8 <b>.7</b> 6	3.65	9.19	3,81
JF	11.83	3.96	13.18	3.77
Μ	6.83	4.86	6.00	4.25
P	10.87	3.91	10.02	3.50
S	9.44	4.01	8.00	4.61
SR	19.79	2.33	20.43	2.14

MEANS AND STANDARD DEVIATIONS OF THE 1959 AND 1961 SCORES FOR THE FEMALE GRADUATES ON THE VOCATIONAL VALUES INVENTORY (N=72)

MEAN	IS AI	ND STAL	NDARD	DEVI	ATI	ONS	OF	THE	1959	AND	196	1 SCORE	ES
FOR	THE	TOTAL	GRADI	JATES	ON	THE	; V(	CATI	[ONAL	VALU	JES	INVENTO	DRY.
				ł	(N=1	129)							
									_				

	Neans*	1959	Standard Deviations	Means*	1961 Standard Deviatio	ns
A	14.09		6.22	14.95	6.07	,
С	9.06		3.83	10.18	4.31	
JF	12.29		3.81	12,58	4.05	ł
Μ	8.68		5.45	7.76	5.35	I
P	11.31		4.26	10.81	4.00	)
S	9.17		4.03	7 <b>.7</b> 2	4.95	1
SR	19.32		<b>3.</b> 03	19.93	2.58	1

MEANS AND STANDARD DEVIATIONS OF THE 1959 AND 1961 SCORES FOR THE MALE STUDENTS ON THE VOCATIONAL VALUES INVENTORY. (N=95)

_		1959		1961
	Neans*	Standard Deviations	Means*	Standard Deviations
A	9.84	5.56	11.03	5.95
C	10.76	4.05	12.25	4.50
JF	12.28	4.67	11.84	4.71
Μ	11.65	5.31	11.80	5.22
F	11.44	4.39	10.84	4.29
S	9.68	5.74	7.18	5.48
SR	18.64	<b>3.</b> 32	19.03	<b>3.</b> 25

MEAN	S AJ	ND	STANI	DARD	DEVI	ITA]	ONS	OF	$\mathbf{THE}$	1959	AND	196	1 SCOR	ES
FOR	THE	'FE	MALE	STUI	DENTS	5 ON (N:	THE =48)	VC	CATI	ONAL	VALU	JES :	INVENT	ORY.

		1959		1961
	Neans*	Standard Deviations	Means*	Standard Deviations
A	16.60	6.06	16.60	5.36
C	7.52	3.65	7.50	3.27
JF	11.89	4.43	13.54	4.65
Μ	8.04	5.71	8.18	4.88
F	11.50	4.77	10.10	4.53
S	9.45	4.58	7.64	4.41
SR	18.95	2.96	20.39	2.52

	<b>1</b> 959 H <b>eans</b> *	Standard	Means*	1961 Standard
		Deviations		Deviations
A	12.12	6.57	12.91	6.33
C	9.66	4.21	10.64	4.70
JF	12.15	4.59	12.41	4 <b>.7</b> 6
M	10.43	5.71	10.58	5.39
Ρ	11.46	4.52	10.59	4.39
S	9.60	5.38	7.33	5.15
SR	18.75	3.21	19.49	3.09

MEANS AND STANDARD DEVIATIONS OF THE 1959 AND 1961 SCORES FOR THE TOTAL STUDENTS ON THE VOCATIONAL VALUES INVENTORY. (N=142)

	1959 Means*	S <b>tand</b> ard Deviations	1961 Means*	St <b>a</b> nda <b>rd</b> Deviations
A	10.34	5.74	11.45	6.26
C	10.31	4.17	11.79	4.73
JF	12.57	4.49	11.97	4.55
Μ	11.42	5.35	11.17	5.49
F	12.83	<b>4</b> •48	11.04	4.27
S	9.67	5.18	7.06	5.46
SR	18.58	3.55	18.99	3.25

MEANS AND STANDARD DEVIATIONS OF THE 1959 AND 1961 SCORES FOR THE TOTAL MALES ON THE VOCATIONAL VALUES INVENTORY (N=173)

		1050		1061
	Neans*	St <b>a</b> ndard Deviations	Means*	Standard Deviations
A	16.14	5.99	16.51	5.18
С	8.32	3.78	8.86	3.93
JF	11.78	4.29	13.20	4.26
M	7.50	5.46	7.04	4.74
P	11.10	4.27	9 <b>.9</b> 5	3.91
S	9.68	4 <b>.4</b> 3	8.05	4.67
SR	19.42	2.82	20.26	2.45
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MEANS AND STANDARD DEVIATIONS OF THE 1959 AND 1961 SCORES FOR THE TOTAL FEMALE ON THE VOCATIONAL VALUES INVENTORY. (N=138)

