

THE RELATIONSHIP OF SELECTED
PERSONALITY CHARACTERISTICS
TO DECIDING OR NOT DECIDING
ON A COLLEGE MAJOR

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CHAPTER I

INTRODUCTION

As student personnel services continue to develop in the area of higher education, there is concomitant concern to determine what impact these services have on the college student. In order to assess what services should be available and how effective these services are, there is a need to understand college students and to examine the extent to which colleges and universities can and should help to meet the needs of this population. Students who are undecided regarding their choice of college major comprise a substantial part of this population. The undecided student may be concerned that he does not have any definite future plans; it may seem to him that his peers have more clearly defined objectives than he possesses. It is also possible that the undecided student has so many interests that he has difficulty in limiting them to one choice.

Evidence concerning the differentiation of college students who are undecided in regard to the declaration of a major from college students who are decided has resulted in few differences in terms of interests or abilities (Baird, 1969; Ashby, Wall, and Osipow, 1966; Abel, 1966; Lyon, 1959; Sharf, 1967). However, further investigation into the research yields studies which indicate that there are certain personality variables which do differentiate the undecided student from the decided (Harmon, 1973; Bordin and Kopplin, 1973; Bohn, 1971).

One of the services in student personnel that is likely to affect the undecided student is the vocational counseling program. This service ideally helps the student to make vocationally related decisions based on values, interests, abilities and relevant information about the environment. If the personality makeup of the undecided student is different from that of the decided student, an important avenue toward better understanding of the particular needs of the undecided student on the part of student personnel workers should increase the probability that vocational counseling will benefit those who have not declared a college major.

The behavior of choosing or not choosing a college major is the result of a complex interaction of variables. This investigation examines certain personality characteristics which may be related to the student's behavior of declaring or not declaring a major. The intent of the study is to identify specific personality traits which may be important variables in this complex interaction.

Statement of the Problem

The basic question asked in the investigation is the following:
Are there certain measurable characteristics of personality associated with declaring or not declaring a major during the initial freshman semester?

Need for the Study

The results of this investigation should provide useful information to college and university counseling centers as well as student personnel workers who interact daily with college students. If

characteristics which distinguish the undecided student from the decided student can be determined, personnel involved with these students will be aware of and understand more fully their special needs. This awareness and understanding should provide a basis from which to formulate an approach in working with the undecided student that has a greater possibility of being fruitful than a traditional approach that focuses on giving the student information regarding various occupations and information comparing his interests with those of others.

On the other hand, if no relationships are found between the personality characteristics assessed and choosing or not choosing a college major, there will be evidence that these particular personality variables should be ruled out in the attempt to differentiate between decided and undecided students. In addition, it is possible that the instruments did not measure the personality characteristics examined in the study.

Hypotheses to be Tested

The hypotheses of specific concern to the investigation are listed below. Other outcomes obtained in the analysis will be reported but do not constitute the major thrust of the investigation. The .05 level of confidence for rejecting or not rejecting hypotheses was the level employed in this study. The hypotheses to be tested are as follows:

1. There is no significant relationship between degree of independence as measured by the Autonomy Scale of the Edwards Personal Preference Schedule and:
 - a. being decided or undecided regarding a college major;

- b. being decided or changed regarding a college major;
 - c. being undecided or changed regarding a college major.
2. There is no significant relationship between being dependent or independent as assessed by pooled values based on the Autonomy and Deference Scales of the Edwards Personal Preference Schedule and:
- a. being decided or undecided regarding a college major;
 - b. being decided or changed regarding a college major;
 - c. being undecided or changed regarding a college major.
3. There is no significant relationship between ability to concentrate on a problem for an extended period of time as measured by the Self-Control Scale of the California Psychological Inventory and:
- a. being decided or undecided regarding a college major;
 - b. being decided or changed regarding a college major;
 - c. being undecided or changed regarding a college major.
4. There is no significant relationship between flexibility as assessed by the Flexibility Scale of the California Psychological Inventory and:
- a. being decided or undecided regarding a college major;
 - b. being decided or changed regarding a college major;
 - c. being undecided or changed regarding a college major.
5. There is no significant relationship between dominance in interpersonal relationships as indicated by the Dominance Scale of the California Psychological Inventory and:
- a. being decided or undecided regarding a college major;
 - b. being decided or changed regarding a college major;
 - c. being undecided or changed regarding a college major.

6. There is no significant relationship between having a well defined self-concept as indicated by the Self-Acceptance Scale of the California Psychological Inventory and:
 - a. being decided or undecided regarding a college major;
 - b. being decided or changed regarding a college major;
 - c. being undecided or changed regarding a college major.
7. There is no significant relationship between having a well defined self-concept as measured by the Social Presence Scale of the California Psychological Inventory and:
 - a. being decided or undecided regarding a college major;
 - b. being decided or changed regarding a college major;
 - c. being undecided or changed regarding a college major.
8. There is no significant relationship between having a well defined self-concept as measured by the Sense of Well-Being Scale of the California Psychological Inventory and:
 - a. being decided or undecided regarding a college major;
 - b. being decided or changed regarding a college major;
 - c. being undecided or changed regarding a college major.

Definition of Terms

The following represent clarifications of terms referred to frequently throughout the study:

Decided Student. This term refers to those students in the investigation who declared a major at the beginning of the fall semester of their freshman year in college and did not change this choice by the close of the fall semester.

Undecided Student. This term identifies those students in the

investigation who stated that they were undecided regarding a choice of major at the beginning of the fall semester of their freshman year in college and remained undecided at the close of the fall semester.

Changed Student. This term refers to those students who had either declared a major or were undecided regarding a major at the beginning of the fall semester of their freshman year of college but changed to another major or to an undecided category from a decided major during the fall semester.

Dependent. As this term is used in hypothesis 2, it refers to a score at or above the 70th percentile on the Deference Scale and at or below the 50th percentile on the Autonomy Scale with a minimum separation between the two scores of 30 percentile points. A consistency score of ten or above on the Edwards Personal Preference Scale is also a requirement for this category.

Independent. This term as used in hypothesis 2 refers to a score at or above the 70th percentile on the Autonomy Scale and at or below the 50th percentile on the Deference Scale with a minimum separation between the two scores of 30 percentile points. A consistency score of ten or above on the Edwards Personal Preference Schedule is required to be included in this category.

Independence. This term describes a pattern of behavior characterized by reliance on oneself in making decisions as opposed to undertaking courses of action by relying on others.

Flexibility. This term describes the degree of adaptability of a person's social behavior.

Ability to Attend to a Problem. This phrase refers to a capacity to maintain attention to a task and carry it through to its conclusion.

Well Defined Self-Concept. This refers to the organized consistent perceptions of the characteristics of the 'I' together with the positive values attached to these perceptions.

Dominance in Interpersonal Relationships. This phrase describes the pattern of behavior characterized by leadership ability and social initiative.

Limitations of the Study

The subjects for this investigation were freshman students in the College of Arts and Sciences at Oklahoma State University. The results of the study should not be construed to be applicable to samples of students found elsewhere, since no cross validation work was conducted. Differences in geographic location, college enrolled, age and year in school could account for differences among student groups.

Another limitation is that the outcomes of the investigation are contingent upon the extent to which reliable and valid data are secured by the procedures utilized in the study. It is assumed that the instruments employed measure the personality traits in question (Gough, 1964; Edwards, 1959).

Organization of the Investigation

Chapter I introduces the problem investigated. This chapter includes the statement of the problem, the need for the study, the hypotheses, the definition of terms, and limitations of the investigation. Chapter II reviews the literature pertinent to the hypotheses tested. Chapter III describes the subjects, data collection, instrumentation, and statistical procedures. Chapter IV presents a

statistical analysis of the data and a resume of findings. Chapter V includes further discussion of the results of the study and recommendations regarding future research in this area.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

This investigation is concerned with the personality characteristics related to the behavior of declaring or not declaring a college major. The review of the literature begins with a discussion of theoretical formulations and research regarding the process of decision making that is relevant to choosing a college major. This study is not concerned with how students make choices, but with the relationship between personality and making or not making a choice. However, some discussion of the decision-making process is provided for background information.

The second section of this review deals with pertinent research in the area of personality characteristics as they relate to making or not making a choice of major. This is the special concern of this exploratory investigation.

The Decision-Making Process Relevant to Vocational Choice

The process of making vocational choices has been studied by a number of investigators. Those investigators utilizing the individual's personality as a factor in vocational choice or the decision-making process are considered.

According to Super's theory of career development (1963), vocational maturity is reflected in the competency with which an individual copes with his current life stage. Vocational maturity refers to a student's ability to make good occupational decisions and to respond responsibly to vocational challenges. At the time of entrance to college, vocational developmental tasks include the crystallization and specification of career goals. The self-concept is important in this vocational development as the self-concept is implemented through an occupational role. The individual self-consciously matches his attributes with the requirements of a particular occupation or accidentally finds a role which provides satisfaction.

Schuh (1966) suggested that there may be limitations of self-concept theory in explaining vocational development when the impact of a negative self-concept is present. Schuh suggested that a negative self-concept may result in preference of low level jobs, no preference, or incomplete progress in completing vocational developmental tasks.

Korman (1966) also suggested that self-esteem is a moderator variable in the process of vocational choice in that individuals high in self-esteem seek vocational roles which are congruent with their self-perceived characteristics, whereas individuals low in self-esteem do not. In his study of students at two state universities, he found that those high in self-esteem as indicated by the Ghiselli Self-Description Inventory perceived their needs as those that have been satisfied in the past and sought roles where they would be satisfied in the future. For individuals low in self-esteem, there was less seeking of need satisfying situations.

Occupational stereotypes and self-perceived personality characteristics of those individuals choosing the occupation were highly related, but only for high self-esteem individuals. In fact, in a later study, Korman (1967) suggested that results for females indicated that they may even tend to choose an occupation which calls more for their low abilities than their high abilities.

A still more complex process may be operating as indicated by Korman (1970) when he distinguished three components of self-esteem: global self-esteem, task-specific self-esteem, and socially derived self-esteem. He indicated that an individual with relatively high, generalized self-esteem might lack self-assurance in the world of work; whereas one lacking in high, generalized self-esteem may feel self-assured in the world of work. This suggests that individuals lacking in self-assurance in the world of work may be unable to make vocational decisions that are congruent with their needs and characteristics even though they have high global self-esteem. Conversely, it may be that the individual lacking in overall high self-esteem may be able to make vocational decisions in keeping with his needs and personal characteristics if he feels self-assured in the world of work.

For Holland (1966) an individual's vocational choice is explained by the interaction of his personality pattern and his environment. Personality patterns and occupational environments are categorized as six types: realistic, investigative, social, conventional, enterprising and artistic. The direction of choice is a function of the dominant characteristic of the individual's personality pattern. A secondary direction of vocational choice is a function of the

secondary characteristic of his personality from the six possible types. Another dimension of vocational choice involves the level and eventual achievement of the choice. The stability and consistency of the individual's personality pattern determines the level and achievement of this choice.

Support for the importance of personality factors in the decision process is given also by Festinger's theory of cognitive dissonance (1970), as he pointed directly toward emotional components of decision making and emphasized the personality's need to deal with such elements. The attempt on the part of the individual to reduce dissonance among his beliefs about himself and his environment may be a major aspect of motivation in the career decision-making process.

Perhaps more than any other theorist, Erickson (1962) has stressed the importance of autonomy during the adolescent period. This concept is central to the formation of a separate ego-identity, apart from parents, with a value system and philosophy of life which enable one to experience greater openness, and with ability to make choices from innumerable possibilities and to create a meaningful way to relate oneself to society. One expression of an individual's relation to society is by means of a career. Because an individual is a whole system, it is probable that autonomy is significant in making decisions regarding one's career if it is significant in other aspects of life.

Researchers have considered autonomy and independence as traits that are relevant to decision making. On the assumption that personality traits which have an impact on decision making in one situation may have an effect on decision making within another context,

such as in making a career choice, the following investigation is cited. Brim et al. (1962) regarded the most important finding involving their study of personality and decision-making processes as the identification of the autonomy-dependency dimension of personality. Subjects were lower and middle class parents; and the types of decisions explored were related to child rearing. Those subjects who were more dependent as measured by a test developed by the authors tended to be more optimistic about the outcomes of their actions, considered fewer possible outcomes in evaluating alternatives, and were less rational in their preferential ranking of actions according to their prior evaluations of the utility of various alternatives. Another outcome was that general values and orientations toward life along with the cultural background of the individual accounted for more variability in decision making than the more traditional personality traits such as intelligence and manifest anxiety. Middle class males and females were judged to be autonomous; they considered the long-term and possible undesirable consequences of their actions. The lower class male emerged as giving attention to possible long-range, undesirable results of his decisions, but had a fatalistic and dependent orientation toward life's circumstances. Lower class females were more concerned with immediate consequences of their decisions of a gratifying nature; and, like the lower class male, they had a dependent, fatalistic approach to life.

Tiedeman and O'Hara (1967) attempted to bring Erickson's conception of ego-identity into Super's conception of self-concept in vocational development. The mechanism for this union is the

decision-making process. Decisions that an individual makes in his vocational development are construed as prime opportunities for the differentiation and integration of ego-identity. The decision-making process includes an anticipatory stage of exploration involving such things as imagining the consequences of one's actions and thinking of various fields. A later step in the anticipatory stage of decision making is crystallization in which advantages and disadvantages of various fields are assessed and preferences and judgments are made. If a tentative preference is not confirmed during this process, re-evaluation and modification or elimination of former considerations of choice occur. If the process of crystallization confirms a tentative choice, stabilization of thought occurs leading to a choice. After the choice has been made, doubt may be experienced which can lead to beginning the process again. If the choice is confirmed, the person begins the process of implementation which begins with a period of induction in which the individual is passive and accepts the situation until he is in turn accepted into the occupational group by the members of that group. The individual then attempts to influence others and eventually integrates his new occupational self with his whole self-system. This equilibrium arising from the integration is part of the continuing process which involves continuous modification.

Commitment is a process more powerful and precise than Super's implementation of the self-concept according to Kroll et al. (1965). The concept of commitment is also related to the autonomy dimension of ego-identify. It is a process involving doubting, narrowing, choosing, assuming responsibility, caring for the choices that

have been made. It also involves risking the self in confrontation with the unknown.

Perry (1968), using interview methods, investigated the processes of commitment of freshman students. He found that freshmen entered college thinking of the world in dualistic terms and assuming the existence of an outside authority. During the freshman year, the impact of diversity led to a more relativistic view of the world. With the loss of absolute standards, the individual experienced more insecurity and doubt; he must choose or remain rootless. The initial commitment, such as to a specific occupation, is a tentative commitment for results of this choice must be experienced and perhaps modified, expanded or abandoned before it can become more than tentative. Perry further stated that a commitment made without realizing the possibility of doubting does not carry with it the kind of responsibility accompanying a personal choice made in connection with the relativity of values and uncertainty about the future. Therefore, he asserted that periods of doubting are necessary for growth and integration and for the confirmation of oneself through personal commitment.

Traits of Decided and Undecided Students

To examine specifically the differences between students who had decided on a vocation and those who had not, two separate studies were conducted by Baird (1967), one of college freshmen and the other of students planning to enter college. In the first study, 5,838 males and 6,143 females from 31 institutions who were decided on their majors were tested by the American College Survey near the end of

their freshman year. In the second study, 54,923 decided students and 13,695 undecided students were used as subjects. The only difference of any size concerned college goals. The undecided students tended to emphasize the goal of developing their minds and intellectual abilities and to choose the goal of vocational or professional training less frequently than did the decided students. Such items as academic aptitude, measured by the ACT, and self-confidence and aspirations, indicated by self ratings, resulted in no notable differences. The author suggested that students differ in regard to whether or not they have made an occupational choice because they differ in their stages of vocational development which should be expected at this age.

Baird (1968) interpreted results of a similar study involving decided and undecided National Merit finalists as indicating that those who were undecided had a social and dominant orientation towards others, were sensitive to aesthetic matters, were expressive, valued academic activities over other types of activities, and had multiple potentialities. Furthermore, Baird (1969) stated that there is no evidence that the undecided student is maladjusted or abnormal. Undecided students are less vocationally oriented and more intellectually oriented than decided students. In addition, their indecision may be due to their capacity to do many things and to have many alternatives open to them.

Appel and Witzke (1972) also sought to determine the factors associated with decision and indecision regarding collegiate major and career choice. Thus, the authors developed the Career Decision Inventory, a 36-item questionnaire intended to sample factors

previously identified as relevant to decision-making behavior in situations other than those involving career choice. The factors included the need for information, risk-taking propensity, self-confidence, ego involvement with choice, manifest anxiety, independence or dependence, subjective uncertainty, and fear of failure. The inventory was administered to 392 freshmen who were divided into subgroups according to sex and decision-indecision regarding a major. Only students who indicated relative certainty or uncertainty regarding occupational choice were used as subjects. By means of factor analysis, three source factors were identified as determinants of student decision making. Decided students tended to have a goal orientation or propensity toward direct concern with the attainment of a career objective in which actions are intended to be instrumentally related to the successful achievement of the career goal. Considerable threat was generated when obstacles or ambiguities were encountered enroute to the goal. Undecided students tended to have a self-orientation or propensity to give primacy to attaining increased self-awareness and personal growth in which there was a relative lack of concern about utilizing collegiate experience as a vehicle for vocational preparation. There was higher tolerance for ambiguity with respect to career choice and relative comfort in exploration of new areas of interest.

These particular findings of Appel and Witzke were consistent with the results of Baird's investigations. However, another result that Appel and Witzke reported is the tendency for the undecided student to have an indecisiveness orientation or propensity to find all types of important decisions difficult to make and to place a

heavy reliance on the opinions of others. The authors speculated that the goal-oriented student may have an external locus of control; whereas, the self-oriented student may be internally controlled. These interpretations of the findings do not appear to be consistent with the finding regarding indecisiveness in the undecided student.

Another investigation which had findings consistent with some of the outcomes of Baird and Appel and Witzke was one conducted by Spohn (1960). Spohn used descriptive data consisting mainly of statements made by students and faculty to study the personalities and vocational orientations of 50 female students throughout their four years of college at a girl's school. Three vocational orientations emerged with the subjects evenly divided among these three groups. The orientations were not stable in all cases; they emerged most clearly in the junior and senior years. Spohn found that those students with strong vocational goals which remained constant throughout the four years showed the least amount of change in self-concept. They also gained little from the breadth of experiences available to them and seemed more practical, rigid, and less creative. A second group had some vocational interest at the beginning of college but were unsure of their direction. Many of them were still uncommitted at graduation regarding future plans but were definite about wanting to make further use of their abilities. They seemed open to diversity and eager to explore and learn more about themselves. Those who showed the greatest amount of personal, intellectual, and social growth during college also had harmonious, emotionally secure relationships with their families. A third group did not favor any type of vocational activity and were interested exclusively in marriage

after college. In many instances, they expressed difficulty in being independent in a constructive way and tried to escape from confrontation with personal responsibility and values by remaining aloof to environmental stress.

Elton and Rose (1971) hypothesized that the senior who was vocationally undecided as a freshman was not different in personality or ability measures from the senior who persisted in or changed majors during this time. Subjects were 1,123 male students who took the ACT and the Omnibus Personality Inventory as freshmen. As seniors, these students were grouped according to those who had been undecided as freshmen, those whose senior occupational choice was different from their freshman choice and those whose choice had remained constant. Comparisons were made among the three groups according to Holland's occupational categories: realistic, intellectual, artistic, social, enterprising and conventional. In no occupational category was there a statistically significant difference in personality or ability between the originally undecided student who later chose a major in that category, the student whose original choice was elsewhere but who migrated to that category, and the student who persisted in that category.

In the study by Elton and Rose, most of those who were undecided as freshmen did not survive to graduation; and most of those who did not survive were dismissed for academic reasons. Slightly over one-half of the originally undecided students who did survive chose the social and enterprising majors. Since students in these categories had the lowest overall mean ACT scores, the majority of the originally undecided students were not among the most academically able.

Elton and Rose did not include in their investigation the undecided freshmen who did not survive.

Bohn (1971) found that undecided students in comparison with pre-law, pre-medical, and engineering students were low in self-confidence, reluctant to attempt to lead or persuade others or to attract attention to self. Undecided students also had tendencies toward expressing feelings of inferiority and seeking subordinate roles in relation to others. Bohn concluded that the need patterns of undecided students could not be determined by his study and suggested that in order to establish this, undecided students should be compared to a group of representative college freshmen who have made a probable choice.

The purpose of an investigation by Resnick, Fauble, and Osipow (1970) was to test the hypothesis that college students exhibiting high self-esteem were more advanced in vocational crystallization than college students low in self-esteem. Subjects were 216 male and female students ranging from freshmen to seniors who were given the Kuder Preference Record and the Tennessee Self-Concept Scale. The Kuder Preference Record was used to assess differences in degree of preference for various career areas. Scores above the 75th percentile were assumed to represent a significant degree of interest in that area; and a crystallization score was derived for each subject based on the number of scores above 75 on the inventory. Another measure of vocational certainty was obtained by student's ratings on a four-point scale from "very certain" to "very uncertain." High or low self-esteem as judged by the Tennessee Self-Concept Scale did not differentiate between students according to the frequency of Kuder scores for either males or females. However, for both sexes, high

self-esteem individuals expressed greater certainty about their career choices than did low self-esteem individuals.

Cordrey (1965) investigated the characteristics of 70 curricularly committed and 70 curricularly uncommitted college male freshmen who were matched for scholastic ability according to their scores on the School and College Ability Test. The California Psychological Inventory was administered to all subjects. Results indicated that the uncommitted student in comparison with the committed student lacked in self-confidence, was passive in interpersonal relationships and dependent in social interaction.

In accord with Cordrey's study, results of an investigation by Ashby, Wall and Osipow (1966) were similar. College freshmen who were divided into three groups, decided, undecided and tentative regarding their major choice were not found to differ in academic performance as measured by the first term grade point average in college or in interests as measured by group scores on the Strong Vocational Interest Blank. However, on the basis of the scores on the Bernreuter Personality Inventory, they found a consistently higher rating on the dependency scale of the inventory for the undecided student leading the authors to suggest that the preferred treatment for undecided students is not the traditional method of giving the students more information about occupations and self interests. Rather, counseling should be focused on the student's dependency by giving added support and encouragement in working out plans.

Watley (1965) investigated the relationship of students' expressions of confidence about remaining in the major field of study they had chosen with actual continuation in the field, academic

achievement, academic aptitude, interests and personality characteristics. There was no difference in the persistence of the sample of 547 male freshmen students. Also, academic aptitude and interests were not found to vary between those confident and not confident about their chosen field of study. Those who lacked confidence obtained significantly higher first quarter grade point averages which was interpreted as over-compensating for felt insecurities. In addition, significant relationships were found between the level of confidence and five scales of the Minnesota Multiphasic Personality Inventory. Those lacking in confidence obtained higher mean scores on the F, D, Pa, Pt and Si scales. The group lacking in confidence when compared with the confident group was characterized by oversensitivity, compulsive behavior, and withdrawal from social contacts.

Outcomes of another investigation that are in agreement with one of the results of Watley's investigation are reported by Finnegan (1971). In his study, it was found that undecided students who volunteered for a vocational counseling program scored higher on the introversion-extroversion scale of the Strong Vocational Interest Blank than did a control group of decided students. This indicated that the undecided students were comparable to individuals who chose occupations which allowed them to be somewhat withdrawn from other individuals in their work. No differences were found in dependence needs, desire for security or avoidance of risk based on scores on a semantic differential. Because the undecided students were volunteers, it was hypothesized that the reason other personality differences between decided and undecided students were not indicated by the study might be due to the personality characteristics of undecided

students who did not volunteer for the program differing from those who did volunteer.

Harmon (1973) characterized undecided students as having generalized indecision, concern with self identity, situation specific choice anxiety, and need for dependence. He suggested that one variable which should be investigated is whether or not undecided students in comparison with decided students have more difficulty concentrating on a problem for an extended period of time on the basis of his finding that the undecided students scored lower on the Response Bias Scale of the Omnibus Personality Inventory.

Whether or not a particular value that is regarded as most important to an individual is related to expressed occupational choice or lack of it was studied by Miller (1956). Subjects were 180 college students who were divided into the categories of decided, undecided and tentative. These groups were compared on their self rankings of personal needs or values in choosing a vocation. The values were categorized into four groups: security, career satisfaction, prestige and social rewards. The undecided group scored higher on the security category and second highest on prestige; the definite-choice group had no particular pattern. Miller suggested that the undecided group was unable to find occupations which seemed to promise the security which they demanded; whereas the tentative- and definite-choice groups had security needs satisfactorily met so that other values could achieve first place.

Another investigation whose results were related to the need for security among undecided students was conducted by Ziller (1957). A test indicating risk-taking behavior resulted in a significant

difference between 182 sophomore ROTC decided and undecided students on this dimension. The decided student was found to take a risk in vocational decision making; whereas the undecided student desired to be more secure.

Murphy et al. (1963) focused on the development of autonomy in the first year of college and interviewed students to explore this dimension of personality. One measurement of autonomy was the subject's capacity for responsible decisions regarding his choice of college major and occupation. Twenty students were rated according to autonomy and relatedness, a measure of satisfaction with parents based on the subjective statements of the students. Those high in autonomy and relatedness performed functions for themselves that formerly were carried out by parents or other adult figures and seemed to have an increased enjoyment of their parents based on an awareness of a growing sense of equality with them. In comparison with the previous students, those low in autonomy and relatedness expressed less feeling of being separate people and were less able to assume responsibility for their own decisions. They frequently looked for others to make decisions for them and complained of a lack of "will power" in doing academic work. Career choices were made more in terms of their parents unfilled expectations for them. At the same time, feelings of distance were maintained with their parents. Personality characteristics of those students who were high in either autonomy or relatedness and low in the other were not discussed. This may be due to the small number of cases under consideration.

In agreement with the previous study, Bordin and Kopplin (1973) stated that identity problems are at the heart of the difficulties in

making vocational choices that are indigeneous to the college years. From their sample of decided and undecided students, they concluded that undecided students in relation to decided students lacked identity and were unable or unwilling to make commitments. Bordin and Koplin accept the theory that persons with differentiated, fully operating identities will integrate self-concept and vocational role better than those with diffuse or conflict-laden identities.

Summary

This discussion has reviewed two major areas, the decision-making process relevant to vocational choice, and the needs and traits of decided and undecided students. The research suggested that personality is an important factor in the decision-making process. Furthermore, certain aspects of personality, such as level of self-esteem, autonomy and need to reduce dissonance, may serve as moderator variables in that process. The decisions made may be considered expressions or implementations of the personality or the self.

There appear to be certain personality characteristics related to being able to decide or not being able to decide on a vocational choice as reflected by a college major although periods of tentativeness and doubt are considered by some investigators as necessary in the decision-making process. Differences in personality characteristics between decided and undecided students based on research evidence include less ability of the decided student to tolerate ambiguities and a wide range of experiences. However, most of the research supported the notion that the undecided student possesses more negative personality characteristics than the decided student.

The undecided student in relation to the decided student is portrayed as lower in self confidence, more dependent with a greater need for security, and more passive in social interaction. In addition, it has been suggested that the undecided student may have less self control and may experience difficulty concentrating on a problem for an extended period of time which makes it difficult to select a major. On the basis of these research findings, the hypotheses of the present investigation were formulated. The aim of this investigation was to contribute evidence regarding the personality characteristics related to being decided or undecided in a major in order to realize a clearer conception of any such relationships that may exist.

CHAPTER III

METHODOLOGY AND DESIGN

Subjects

Subjects for this investigation were 154 males and 174 females who were Oklahoma State University freshmen enrolled in Educational and Vocational Orientation in the College of Arts and Sciences during the 1973 fall term. Students for the investigation were chosen from the College of Arts and Sciences since approximately 40 percent of its students are undecided in their majors; the remainder of the students in the College of Arts and Sciences has declared a variety of majors. Students from twelve sections of the orientation class were tested. The sections were chosen on the basis of compatibility of class meeting times and availability of the place of testing. Only those students who completed both inventories used in the investigation were included as subjects.

Procedure

The subjects were divided into three groups: decided, undecided and changed, according to the classification of their majors and the stability of their classification as defined in the Definition of Terms in Chapter I. A further division of the groups was made by treating the test data separately for males and females, resulting

in six groups. Although the personality characteristics of subjects in the changed group were not of major concern to this investigation, the changed group was included to avoid contamination of the decided and undecided groups by excluding subjects whose degree of decidedness or undecidedness might not be similar to subjects in the decided and undecided groups.

The composite scores from the American College Testing Program (ACT) were computed for all groups and compared in order to be aware of the possible influence of variations in academic aptitude on any measured relationship found in the investigation. The means and standard deviations for each group are given in Table I. The decided males had the highest mean; and the undecided females had the lowest mean in comparison with other groups.

TABLE I
MEANS AND STANDARD DEVIATIONS OF THE ACT COMPOSITE SCORES
FOR EACH CRITERION OF CHOICE

	Males		Females	
	Means	SD	Means	SD
Decided	23	4	21	4
Undecided	21	4	20	4
Changed	21	4	21	4

In order to test hypothesis 2 which was concerned with the relationship between being dependent and independent as indicated by pooled values of the Autonomy and Deference Scales of the Edwards Personal Preference Schedule and being decided, undecided or changed

in one's choice of major, a selection of students from the original sample was made. The selection was made in accordance with a procedure utilized by Barnardin and Jessor (1957) in their attempt to establish construct validity of the Edwards Personal Preference Schedule. In their investigation, subjects were classified as dependent if they scored at or above the 70th percentile on the Deference Scale and at or below the 50th percentile on the Autonomy Scale with a minimum separation of 30 percentile points between the two scores. Subjects were classified as independent if they scored at or above the 70th percentile on the Autonomy Scale and at or below the 50th percentile on the Deference Scale, with a minimum separation of 30 percentile points between the two scores. All subjects were required to have a Consistency score of at least 10 in order to establish that the subjects did not respond to the items on a chance basis. Using this procedure, a sample of 72 independent subjects and 46 dependent subjects were chosen who met the criteria for being independent and dependent.

In order to take into consideration the ipsative nature of the scores on the Edwards Personal Preference Schedule, a selection of subjects was made whose scores on the Autonomy Scale were either one of their four highest scores or one of their four lowest scores; no normative scores were utilized. There were 65 subjects with high Autonomy scores and 50 subjects with low Autonomy scores following this procedure.

Instruments

Two instruments were employed in the investigation. The instruments were chosen for the study primarily because (1) they

attempt to measure the personality characteristics recognized in previous research as related to the behaviors in question, (2) and they are applicable to normal populations. In addition, they could be administered in the time constraints available for collecting the data.

The California Psychological Inventory (CPI)

The CPI was designed to identify and measure personality characteristics considered important for social living and social interaction. According to Gough (1964), the personality characteristics with which the inventory is concerned have a broad applicability to human behavior and are related to the favorable and positive aspects of personality rather than to the pathological aspects. Following is a brief description of the 18 scales, each of which is intended to cover one important facet of personality. Three of these scales, the Sense of Well-Being, Good Impression, and Communality Scales, were designed as an indication of response validity.

Dominance Scale (D0). Gives an indication of leadership ability, dominance, persistence and social initiative.

Capacity for Status Scale (CS). Serves as an index of an individual's capacity for status--not his actual or achieved status--and attempts to measure the personal qualities and attributes which underlie and lead to status.

Sociability Scale (SY). Identifies persons of outgoing, sociable and participative temperaments.

Social Presence Scale (SP). Assesses factors such as poise, spontaneity and self-confidence in personal and social interaction.

Self-Acceptance Scale (SA). Measures factors such as sense of personal worth, self-acceptance and capacity for independent thinking and action.

Sense of Well-Being Scale (WB). Identifies persons who minimize their worries and complaints, and who are relatively free from self-doubt and disillusionment. Exceptionally low scores are found among persons attempting to "fake bad."

Responsibility Scale (RE). Identifies persons of conscientious, responsible and dependable dispositions and temperaments.

Socialization Scale (SO). Indicates the degree of social maturity and integrity which the individual has attained.

Self-Control Scale (SC). Assesses the degree and adequacy of self-regulation and self-control and freedom from impulsivity and self-centeredness.

Tolerance Scale (TO). Identifies persons with permissive, accepting and non-judgmental social beliefs and attitudes.

Good Impression Scale (GI). Identifies persons capable of creating favorable impressions who are concerned about how others react to them. Very high scores suggest the possibility of "faking good."

Communality Scale (CM). Indicates the degree to which an individual's reactions and responses correspond to the modal pattern established for the inventory; measures response validity as unusually low scores raise the possibility that the respondent's answers were given in a random manner.

Achievement via Conformance Scale (AC). Identifies factors of interest and motivation which facilitate achievement in any setting where conformance is a positive behavior.

Achievement via Independence Scale (AI). Identifies those factors of interest and motivation which facilitate achievement in any setting where autonomy and independence are positive behaviors.

Intellectual Efficiency Scale (IE). Indicates the degree of personal and intellectual efficiency which the individual has attained.

Psychological-Mindedness Scale (PY). Measures the degree to which the individual is interested in, and responsive to the inner needs, motives and experiences of others.

Flexibility Scale (FX). Indicates the degree of flexibility and adaptability of a person's thinking and social behavior.

Femininity Scale (FE). Assesses the masculinity or femininity of interests with high scores indicating more feminine interests and low scores more masculine interests.

The Edwards Personal Preference Schedule (EPPS)

The EPPS was designed as a measuring device for a number of relatively independent normal personality variables (Edwards, 1959). The instrument measures 15 personality variables based on H. A. Murray's theory of needs. In addition to the 15 personality scores, a Consistency score is available which is based upon a comparison of the number of identical choices made in two sets of the same 15 items. The probability of 10 or more identical choices occurring by chance is .15. Following is a brief description of each of the 15 scales:

Achievement Scale (ACH). Measures the need to do one's best, to be successful, to accomplish tasks requiring skill and effort, to be a recognized authority, to accomplish something of great significance,

to do a difficult job well, to solve difficult problems and puzzles, to be able to do things better than others, to write a great novel or play.

Deference Scale (DEF). Assesses the need to get suggestions from others, to find out what others think, to follow instructions and do what is expected, to praise others, to tell others that they have done a good job, to accept the leadership of others, to read about great men, to conform to custom and avoid the unconventional, to let others make decisions.

Order Scale (ORD). Gives an indication of the need to have written work neat and organized, to make plans before starting on a difficult task, to have things organized, to keep things neat and orderly, to make advance plans when taking a trip, to organize details of work, to keep letters and files according to some system, to have meals organized and a definite time for eating, to have things arranged so that they run smoothly without change.

Exhibition Scale (EXH). Refers to the need to say witty and clever things, to tell amusing jokes and stories, to talk about personal adventures and experiences, to have others notice and comment upon one's appearance, to say things just to see what effect it will have on others, to talk about personal achievements, to be the center of attention, to use words that others do not know the meaning of, to ask questions others cannot answer.

Autonomy Scale (AUT). Measures the need to be able to come and go as desired, to say what one thinks about things, to be independent of others in making decisions, to feel free to do what one wants to do, to do things that are unconventional, to avoid situations where

one is expected to conform, to do things without regard to what others may think, to criticize those in positions of authority, to avoid responsibilities and obligations.

Affiliation Scale (AFF). Measures the need to be loyal to friends, to participate in friendly groups, to do things for friends, to form new friendships, to make as many friends as possible, to share things with friends, to do things with friends rather than alone, to form strong attachments to others, to write letters to friends.

Intracception Scale (INT). Furnishes an indication of the need to analyze one's motives and feelings, to observe others, to understand how others feel about problems, to put one's self in another's place, to judge people by why they do things rather than by what they do, to analyze the behavior of others, to analyze the motives of others, to predict how others will act.

Succorance Scale (SUC). Refers to the need to have others provide help when in trouble, to seek encouragement from others, to have others be kindly, to have others be sympathetic and understanding about personal problems, to receive a great deal of affection from others, to have others do favors cheerfully, to be helped by others when depressed, to have others feel sorry when one is sick, to have a fuss made over one when hurt.

Dominance Scale (DOM). Assesses the need to argue for one's point of view, to be a leader in groups to which one belongs, to be regarded by others as a leader, to be elected or appointed chairman of committees, to make group decisions, to settle arguments and disputes between others, to persuade and influence others to do what

one wants, to supervise and direct the actions of others, to tell others how to do their jobs.

Abasement Scale (ABA). Provides an indication of the need to feel guilty when one does something wrong, to accept blame when things do not go right, to feel that personal pain and misery suffered does more good than harm, to feel the need for punishment for wrong doing, to feel better when giving in and avoiding a fight than when having one's own way, to feel the need for confession of errors, to feel depressed by the inability to handle situations, to feel timid in the presence of superiors, to feel inferior to others in most respects.

Nurturance Scale (NUR). Measures the need to help friends when they are in trouble, to assist others less fortunate, to treat others with kindness and sympathy, to forgive others, to do small favors for others, to be generous with others, to sympathize with others who are hurt or sick, to show a great deal of affection toward others, to have others confide in one about personal problems.

Change Scale (CHG). Assesses the need to do new and different things, to travel, to meet new people, to experience novelty and change in daily routine, to experiment and try new things, to eat in new and different places, to try new and different jobs, to move about the country and live in different places, to participate in new fads and fashions.

Endurance Scale (END). Measures the need to keep at a job until it is finished, to complete any job undertaken, to work hard at a task, to keep at a puzzle or problem until it is solved, to work at a single job before taking on others, to stay up late working in

order to get a job done, to put in long hours of work without distraction, to stick at a problem even though it may seem as if no progress is being made, to avoid being interrupted while at work.

Heterosexuality Scale (HET). Gives an indication of the need to go out with members of the opposite sex, to engage in social activities with the opposite sex, to be in love with someone of the opposite sex, to kiss those of the opposite sex, to be regarded as physically attractive by those of the opposite sex, to participate in discussions about sex, to read books and plays involving sex, to listen to or to tell jokes which involve sex, to become sexually excited.

Aggression Scale (AGG). Assesses the need to attack contrary points of view, to tell others what one thinks about them, to criticize others publicly, to make fun of others, to tell others off when disagreeing with them, to get revenge for insults, to become angry, to blame others when things go wrong, to read newspaper accounts of violence.

Research Data for the CPI

Norm Group

Scores on the CPI are reported in standard score form with a mean of 50 and standard deviation of 10. The norms on which the standard scores were derived consist of more than 6,000 male subjects and 7,000 female subjects from a wide range of socioeconomic groups and geographical areas and also include a wide range of ages; however, the sample is not considered a true random sample of the general

population. Mean profiles for college populations based on over 1,100 males and over 2,100 females are available (Gough, 1964).

Intercorrelations of the Scales

Intercorrelations of the scales range from .00 to .78. The high intercorrelations have been a point of criticism of the scales as the scales were intended to measure distinct facets of personality; however, some scales should be expected to be related highly as they measure similar characteristics

Reliability

Reliability of the scales has been indicated by the test-retest method. Reliability coefficients for over 200 high school subjects tested as juniors and a year later as seniors ranged from .38 on the Communality Scale to .77 on the Intellectual Efficiency Scale. For 200 prison males retested from 7 to 21 days after the initial testing, reliability coefficients ranged from .49 on the Flexibility Scale to .87 on the Tolerance Scale. Gough (1964) suggested that two scales, Communality and Psychological-Mindedness, have rather low reliability due in part to the shortness of the scales which make them susceptible to changes in one or two items. Although the test is designed to measure stable personality characteristics, the reliability coefficients may reflect in part transient emotional states or genuine changes in people over a period of time.

Validity

Validity for the CPI is indicated by the criterion related

method which provides an indication of the effectiveness of a test in predicting an individual's behavior in specified situations. According to Mehrens and Lehmann (1969), the scales are quite valid when judged against actual behavior criteria of contrasted groups. In establishing validity for the scales, the problem of criterion contamination was avoided as those assigning criteria ratings to subjects did not have knowledge of their corresponding scale scores. Gough (1964) reported validity coefficients ranging from .21 to .78 for the scales. Overall, the CPI is supported by valid empirical evidence and is considered one of the best personality tests available.

Research Data for the EPPS

Norm Group

The norm group with which subjects in this investigation were compared were 749 college women and 760 college men enrolled in liberal arts classes at 29 colleges and universities during the period 1950-54. Raw scores are converted to percentiles; separate percentile norms are provided for men and women.

Intercorrelations

Intercorrelations for the scales range from .01 to .46. According to Edwards (1959), the low values of the intercorrelations indicate that the scales being measured are relatively independent; however, no scale is composed of items completely free of the other scales as each choice affects scores on two scales. The mean of the intercorrelations of the variables reported in the manual

correspond with the mean intercorrelations for any given set of ipsative scales which suggests that it is difficult to assess the true intercorrelations for the variables (Buros, 1965).

Reliability

Reliability coefficients reported by Edwards (1959) range from .61 to .87 for coefficients of internal consistency based on scores of the 1509 subjects in the college normative groups. These values may be inflated due to the appearance of identical statements in different comparative pairs. Test-retest reliability coefficients range from .74 to .88 on the various scales based on a group of 89 students who took the test with a one-week interval separating the two administrations.

Control for Social Desirability

In developing the instrument, control for the factor of social desirability was emphasized more than the establishment of validity. To provide a control for social desirability, a sample of subjects responded to items by indicating "yes" to those items characteristic of themselves and "no" to those items not characteristic of themselves. Prior to this administration, each item had been assigned a score for social desirability according to whether or not the item was judged to represent traits that are desirable or undesirable socially. The percent of "yes" responses increased with the score values of social desirability, with the product-moment correlation coefficient for this relationship being .87. On the basis of experiments such as this, the instrument was designed to minimize the

influence of social desirability by matching items representing two different personality traits according to their social desirability scale values and forcing the respondent to choose the one more characteristic of himself. Coefficients of correlation between each of the 15 scales and measures of social desirability range from $-.01$ to $+/- .33$. McKee as reported by Buros (1972) stated that the environment of surrounding items may affect the relative social desirability of an item pair so that one of the pair is seen as more desirable than the others. Also, ratings of social desirability are likely to vary from population to population. Personal desirability may be an additional source of influence on test scores so that it is difficult to assess the amount of reduction of the influence of social desirability on the outcomes of the test.

Validity

As evidence of validity, Edwards (1959) reported correlations of the 15 scales with scores from the Guilford Martin Personnel Inventory and the Taylor Manifest Anxiety Scale. The correlations were in the expected directions; and relationships significant at the $.05$ level ranged from $.21$ to $-.51$.

A study conducted to establish construct validity for the Autonomy and Deference Scales that is pertinent to this investigation was made by Bernardin and Jessor (1957). They selected 110 students, half of which fit their classification for dependent as previously referred to and half of which fit the classification for independent. The subjects were randomly assigned to various experimental groups. In an experiment which involved learning a maze task, it was found

that dependent subjects under conditions of negative verbal reinforcement made significantly more errors per run and took significantly longer per run than independent subjects under the same conditions. Quality of performance for dependent experimentals was significantly lower compared with dependent controls who received no verbal reinforcement while learning the task. No difference in quality of performance as a function of negative reinforcement appeared between independent experimentals and independent controls. The rationale was upheld that if dependent persons are more reliant on others for approval or consider approval from others more important than do independents, disapproval or criticism should be more frustrating for them. Bernardin and Jessor also tested another hypothesis which stated that dependent persons confronted with a difficult problem solving task will request help significantly more often than independent persons confronted with a difficult problem solving task when both groups are informed that assistance may be obtained. Results supported the hypothesis. In addition, it was hypothesized that in a situation requiring perceptual judgments to be made before a group, dependent subjects will conform more to the judgments of the group than will independent subjects. Approximately 60 percent of both dependent and independent subjects exhibited conformity behavior with no differences between the groups.

A controversial feature of the inventory which affects its validity is the ipsative nature of the items. In matching two items representing different personality characteristics or needs and forcing the individual to choose between them, a question arises regarding the utilization of statistical procedures in which scores

representing a hierarchy or needs relative to an individual are expressed normatively. According to Heilbrun (Buros, 1972), the ipsative character of the raw scores does not appear to introduce any problems despite the conversion into normative standardized scores. On the other hand, McKee as reported in Buros (1972) stated that relative measures of need may not hold up on an absolute basis as a given score may reflect an intense need among a complex of strong needs for one person, whereas the same score might reflect a weak need overriding a complex of feeble needs within another individual. The rank orders of the needs may change considerably when ipsative rather than normative scores are considered. Related to this problem is another question regarding whether or not the scales are equivalent with respect to the extent to which they measure given needs. It may be that the items for one scale reflect high measures of that need, whereas items for another scale represent relatively low measures of another need.

McKee (Buros, 1972) stated that a survey of recently published research failed to uncover a basis for altering previously stated reservations about validity for the test. Although the EPPS has been an attractive research instrument gauging by the long bibliography of studies in which it is employed, many of the studies have been ones in which the investigator has been unable to predict what the results of the investigation should be. Thus, validity of the instrument has been presumed as findings from these investigations emerge. The reviewer stated that the research data provide insufficient justification for saying that the scales measure the constructs they intended to measure or that the scales are useful in

the prediction of external socially important criteria. On the other hand, Heilbrun (Buros, 1972) stated that there is no hard evidence that the instrument does not have some predictive validity.

Statistical Treatment

The point biserial coefficient of correlation was suitable for analyzing the relationships among the data obtained from both instruments (Guilford and Fruchter, 1973). This statistic provides an indication of the relationship between a continuous variable and a dichotomous variable. The point biserial also can be used with variables that are not fundamentally dichotomous but in which the individuals are separated into two groups. The variables in this investigation are not genuine dichotomies; but the underlying distribution for these variables cannot be stated absolutely to be continuous and normal distributions which are necessary assumptions for use of the biserial coefficient. Therefore, the point biserial is the most appropriate statistic to employ as it does not require the assumption of a normal distribution in the dichotomous variable. Underlying assumptions for the continuous variable are a normal, unimodal, continuous distribution. Because it is possible that the underlying distribution for decided-undecided is continuous and normal, the reported point biserials may be an underestimate of the true relationships.

The point biserial is most appropriate when the split in the dichotomous variable is not too extreme. Because there were fewer subjects classified as changed as compared with those classified as decided or undecided, correlations involving the changed group

may be depressed and should be interpreted cautiously. The numbers of subjects in each group are given in Table II.

TABLE II
NUMBERS OF SUBJECTS IN EACH CRITERION GROUP

	Males	Females
Decided		
Total Group	79	77
With Communality scores greater than 19	73	
With Consistency scores greater than 9	67	74
Undecided		
Total Group	60	70
With Communality scores greater than 19	54	
With Consistency scores greater than 9	56	65
Changed		
Total Group	15	28
With Communality scores greater than 19	13	
With Consistency scores greater than 9	12	25

Point biserials were computed between each of the scales of the two inventories in combination with each of the dichotomized variables: decided-undecided, decided-changed, undecided-changed. Data for males and females were treated separately. The hypothesis of zero correlation was tested by means of a direct *t* test (Guilford and

Fruchter, 1973). The Statistical Analysis System was the computer program employed in the study.

An additional set of point biserials was computed for each scale of the EPPS in combination with each pair of dichotomized variables, excluding those individuals whose Consistency scores on the test were 9 or less. Individuals with such scores responded to the items in the inventory in a random manner.

For the male subjects, point biserials were computed for each scale of the CPI with each pair of the dichotomized variables excluding those individuals whose Communality scores on the CPI were 19 or less. Such scores are indicative of persons who responded randomly to items in the test. This procedure was not followed for females as there were only four females who had Communality scores of 19 or less.

In computing the point biserials, those in the decided category were assigned a score of 1, those in the undecided category were assigned a score of 2, and the changed category was designated by a score of 3. Therefore, a positive correlation of a scale with decided versus undecided or decided versus changed signifies that the scale is related negatively to being decided or positively related to being undecided or changed; and a negative correlation signifies that the scale is related positively to being decided and negatively to being undecided or changed. A positive correlation of a scale with undecided versus changed indicates a negative relationship between the scale and being undecided and a positive relationship with being changed; a negative correlation signifies that the scale is related positively to being undecided and is related negatively to being changed.

Another statistical procedure was utilized to test hypothesis 2 which was concerned with the relationship between dependent-independent and being decided, undecided or changed in a choice of college major. A selection of students was made who met the requirements for dependent and independent. The phi coefficient of correlation was employed to measure the relationship between dependent-independent and being decided, undecided or changed. Males and females were treated separately. A test of the null hypothesis was made by means of chi square (Guilford and Fruchter, 1973).

The phi coefficient is a product-moment correlation obtained from a 2 x 2 contingency table where both variables are dichotomies and the distributions are point distributions in which the two classes represent a qualitative attribute. The method is applicable also to data that are measurable as continuous variables. Because the size of the phi coefficient is limited (Guilford and Fruchter, 1973), the maximal phi for the combination of marginal proportions for each pair of choice criteria was calculated. Comparing the obtained phi coefficient with the maximal phi coefficient possible for a particular combination of marginal proportions provides an indication of the degree of relationship between the correlated variables as lower values of the correlation coefficient may indicate a relationship since it is not possible to obtain a phi coefficient greater than the maximal phi.

The phi coefficient was utilized in another analysis in which ipsative scores were used as indicators of independence. These scores were correlated with being decided-undecided, decided-changed or undecided-changed in one's choice of major. A test of significance was made by means of chi square.

Summary

Chapter III has presented the research methodology utilized in this investigation. Subjects for the investigation and procedures for grouping the subjects were described; the instruments employed to measure personality characteristics of the subjects were discussed. A final section explained the statistical treatment of the data. The findings of this investigation and summary of the outcomes are presented in Chapter IV and V.

CHAPTER IV

ANALYSIS OF THE DATA AND PRESENTATION OF RESULTS

Introduction

This study was conducted to answer the following question: Are there certain measurable characteristics of personality associated with declaring a major during the initial freshman semester as contrasted with not declaring a major during that time? To examine this question, the CPI and EPPS were administered to a group of freshman students who were later classified as decided, undecided or changed in regard to their choice of college major.

The results of these test administrations were analyzed according to the procedures discussed in Chapter III; and the outcomes of the statistical analyses are presented in this chapter. The discussion of the results begins with an analysis of the findings for each hypothesis. After discussion of the specific hypotheses that served as the major focus of this investigation, other outcomes are presented in which significant relationships were found to exist between decided and undecided students.

As stated previously, the major thrust of this investigation was to discern whether or not certain personality characteristics are related to being decided or undecided in a choice of college major.

In order that the division between the decided and undecided groups be as distinct as possible, the changed group was utilized to exclude from the decided and undecided categories those students who changed from one classification of choice of major to another during the initial freshman semester. An examination of the personality characteristics of students in the changed group was not a purpose of this study. However, certain scales of the CPI and the EPPS were related to being in the decided group or undecided group in comparison with the changed group, although these same scales were not related to being decided in comparison with being undecided. Those scales which indicate significant relationships to being decided or undecided in comparison with being changed in one's choice of major are reported in Appendixes A and B.

Results of the Analysis of Data

Results of the Hypotheses Presented in Chapter I

Hypothesis 1 was concerned with the relationship between independence as assessed by the Autonomy Scale of the EPPS and being decided or undecided, decided or changed, or undecided or changed regarding a college major. One significant relationship was found to exist as the undecided male students scored higher on the Autonomy Scale in comparison with the changed male students. No other significant relationships were indicated. Table III presents the point biserial coefficients of correlation found for hypothesis 1.

When ipsative values on the Autonomy Scale served as the measurement for independence, there were no significant relationships between

independence and being decided or undecided for males or females. The only significant relationship indicated was that males who were undecided in their majors were more independent than males who changed their classification of choice of major. The phi coefficients and maximal phis for these relationships are presented in Table IV.

TABLE III
POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE AUTONOMY SCALE OF THE EPPS
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	.16 .06	-.02 .83
With Consistency scores greater than 9	.14 .13	.05 .56
Decided-Changed		
Total Group	-.14 .16	-.06 .51
With Consistency scores greater than 9	-.17 .12	.04 .69
Undecided-Changed		
Total Group	-.29 .01**	-.06 .58
With Consistency scores greater than 9	-.29 .02*	-.02 .81

* significant at .05 level

**significant at .01 level

The results for hypothesis 1 are not consistent with previous research in which it was suggested that undecided students tended to be more dependent than did the decided students. The direction of the relationships evidenced by the point biserial and phi coefficients indicates that for the male students in this investigation, those who were undecided in their majors had higher scores on the Autonomy Scale than did the decided students although the extent of these relationships was not statistically significant.

TABLE IV

PHI COEFFICIENTS, CHI SQUARES, AND MAXIMAL PHI COEFFICIENTS
FOR IPSATIVE SCORES ON THE AUTONOMY SCALE OF THE EPPS
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
With Consistency scores greater than 9	-.25	.19
Chi Square	3.56	1.48
Maximal Phi	.92	.81
Decided-Changed		
With Consistency scores greater than 9	.27	.22
Chi Square	2.77	1.43
Maximal Phi	.62	.82
Undecided-Changed		
With Consistency scores greater than 9	.50	.04
Chi Square	8.00**	.05
Maximal Phi	.65	.69

* Chi square must equal 3.84 to be significant at the .05 level.

**Chi square must equal 6.63 to be significant at the .01 level.

Relationships on the Autonomy Scale for the females were extremely low indicating that being decided or undecided in a major is not related to being more or less dependent. Results of the analysis utilizing ipsative values indicated that the direction of the relationship was in the expected direction for female subjects with the decided students selecting the need for autonomy as higher within their personal hierarchies of needs than either undecided or changed subjects. However, these relationships were not significant.

Both normative and ipsative values from the Autonomy Scale indicated a relationship between independence and being undecided in a choice of major rather than being changed for the male subjects. An obtained phi of .50 and maximal phi of .65 correspond to a Pearson r of .77, indicating a strong relationship. This supports rejection of the idea that undecided male students are more dependent than others.

Hypothesis 2 was concerned with the relationship between being dependent or independent as assessed by pooled values of scores on the Autonomy and Deference Scales of the EPPS and being decided-undecided, decided-changed or undecided-changed regarding a choice of college major. The phi coefficients and maximal phi coefficients which indicate the degree of relationship for each criterion of choice of college major and dependent-independent are reported in Table V. No significant relationships were found.

Again, there was no trend for the undecided male student to be more dependent than the decided student when two scales from the EPPS served in conjunction with each other as the measuring device for dependence and independence. For the female subjects, the direction of the relationships was in the expected direction as the decided

group tended to have higher Autonomy and lower Deference scores than did the undecided or changed groups although these relationships were not statistically significant. It may be that for the students in this investigation there is no relationship between independence and being decided or undecided in a major. On the other hand, it is possible that high and low scores on the Autonomy Scale of the EPPS are not valid measurements for dependence and independence.

TABLE V

PHI COEFFICIENTS, CHI SQUARES, AND MAXIMAL PHI COEFFICIENTS
FOR POOLED VALUES OF THE AUTONOMY AND DEFERENCE SCALES
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
With Consistency score greater than 9	-.07	.20
Chi Square	.24	2.24
Maximal Phi	.83	.70
Decided-Changed		
With Consistency score greater than 9	.16	.17
Chi Square	.86	1.29
Maximal Phi	.57	.92
Undecided-Changed		
With Consistency score greater than 9	.24	.01
Chi Square	1.46	.00
Maximal Phi	.65	.87

* Chi square must equal 3.84 to be significant at the .05 level.

**Chi square must equal 6.63 to be significant at the .01 level.

The relationship between the ability to concentrate on a problem for an extended period of time as measured by the Self-Control Scale of the CPI and being decided or undecided, decided or changed or undecided or changed was the concern on hypothesis 3. Table VI reports the point biserial coefficients indicating these relationships. No significant relationships were found to exist for any classification of choice of major and the Self-Control Scale.

TABLE VI
POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE SELF-CONTROL SCALE OF THE CPI
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.01 .88	-.05 .55
With Communalities scores greater than 19	-.06 .53	
Decided-Changed		
Total Group	.15 .14	.08 .55
With Communalities scores greater than 19	.16 .14	
Undecided-Changed		
Total Group	.18 .11	.12 .23
With Communalities scores greater than 19	.23 .06	

The outcomes for this hypothesis do not support Harmon's suggestion (1973) that the undecided student is unable to concentrate on a problem for an extended period of time, thus is unable to decide on a college major insofar as the Self-Control Scale is indicative of this characteristic. In fact, the coefficients for the relationships between the scale and being decided or undecided in one's major approach zero for both males and females.

The null hypothesis was not rejected for hypothesis 4 as no significant relationships were indicated between decided-undecided, decided-changed or undecided-changed for either males or females and flexibility as assessed by the Flexibility Scale of the CPI. The point biserial coefficients for these relationships are reported in Table VII.

These results do not support the results of the investigations by Appel and Witzke (1972 and Spohn (1960) in which those students who were undecided in their majors exhibited a higher tolerance for ambiguity and were more open to diversity than those students who were decided in their career plans. The correlation coefficients for the relationships between this scale and being decided or undecided in the choice of a college major are close to zero for both males and females.

The outcomes of hypothesis 5 differed for males and females. No significant relationships were found for males who were decided, undecided or changed in their choice of major and dominance in interpersonal relationships as indicated by the Dominance Scale of the CPI. The point biserials for these relationships are reported in Table VIII.

TABLE VII

POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE FLEXIBILITY SCALE OF THE CPI
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	.00	-.07
	.99	.58
With Communalities scores greater than 19	-.01	
	.90	
Decided-Changed		
Total Group	-.15	-.14
	.15	.16
With Communalities scores greater than 19	-.12	
	.28	
Undecided-Changed		
Total Group	-.16	.08
	.17	.57
With Communalities scores greater than 19	-.12	
	.66	

All relationships involving male subjects were close to zero. However, higher scores on the Dominance Scale were related significantly to being decided on a college major as opposed to being undecided on a major for females. In addition, this same relationship was found for females when the undecided and changed groups were compared as the changed group tended to score significantly higher than the undecided group on the Dominance Scale. The null hypothesis was not rejected for the relationship between the Dominance Scale and being decided or changed for the female subjects.

TABLE VIII

POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE DOMINANCE SCALE OF THE CPI
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.10 .24	-.22 .006**
With Communality scores greater than 19	-.03 .73	
Decided-Changed		
Total Group	.02 .86	.10 .30
With Communality scores greater than 19	.01 .89	
Undecided-Changed		
Total Group	.04 .71	.31 .002**
With Communality scores greater than 19	.04 .75	

**significant at the .01 level

These relationships suggest that the decided and changed groups were similar in their tendency to have a greater degree of social initiative, self-reliance and leadership in comparison with the undecided females. The results for the females are consistent with previous studies in which undecided students were described as more passive in their interpersonal relationships and have tended to be more withdrawn from social contacts than have decided students.

The point biserial coefficients for the Self-Acceptance Scale of the CPI are reported in Table IX.

TABLE IX
POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE SELF-ACCEPTANCE SCALE OF THE CPI
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.01 .94	-.09 .29
With Communality scores greater than 19	.00 .96	
Decided-Changed		
Total Group	-.07 .50	-.02 .82
With Communality scores greater than 19	-.03 .77	
Undecided-Changed		
Total Group	-.07 .58	.06 .55
With Communality scores greater than 19	-.03 .81	

The Self-Acceptance Scale served as the measurement of a well defined self-concept in hypothesis 6. The null hypotheses were not rejected for any of the female and male groups. As indicated in Table IX, the correlation coefficients are so low that a particular direction for the relationship cannot be stated.

In addition, the null hypotheses were not rejected for hypotheses 7 and 8 which were concerned with the relationship between being decided-undecided, decided-changed or undecided-changed and having a well defined self-concept as was hypothesis 6. The measurement of a well defined self-concept for hypothesis 7 was the Social Presence Scale of the CPI. The Sense of Well-Being Scale of the CPI was used as the indicator of having a well defined self-concept in hypothesis 8. The point biserials reflecting the relationships for hypotheses 7 and 8 are reported in Tables X and XI respectively.

The direction of the relationship between the Social Presence Scale and being decided or undecided was dissimilar for the males and females. For male subjects, the undecided students tended to have higher scores on the scale in comparison with decided students; whereas the decided female subjects tended to score higher on the scale than did the undecided female subjects. Neither of these relationships were significant.

For the Sense of Well-Being Scale, all relationships between the scale and being decided or undecided in a major approached zero. Furthermore, there were no significant relationships for the scale when the changed group was involved. These results do not support previous research which suggested that the undecided student is less confident and feels inferior in comparison with the decided student.

TABLE X

POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE SOCIAL PRESENCE SCALE OF THE CPI
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	.19	-.23
	.15	.13
With Communality scores greater than 19	.13	
	.14	
Decided-Changed		
Total Group	-.05	.03
	.65	.78
With Communality scores greater than 19	-.02	
	.86	
Undecided-Changed		
Total Group	-.16	.13
	.17	.21
With Communality scores greater than 19	-.13	
	.29	

TABLE XI
 POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
 FOR THE SENSE OF WELL-BEING SCALE OF THE CPI
 AND EACH CRITERION OF CHOICE

	Males	Females
<hr/>		
Decided-Uncollected		
Total Group	.04 .67	-.04 .61
With Communalitv scores greater than 19	.06 .50	
Decided-Changed		
Total Group	.06 .57	.11 .25
With Communalitv scores greater than 19	.13 .23	
Uncollected-Changed		
Total Group	.04 .75	.15 .14
With Communalitv scores greater than 19	.10 .55	

Additional Scales Related to Decided-Undecided

All other scales of the EPPS and the CPI which were not specifically referred to in the hypotheses were analyzed to see if relationships existed between them and the various criteria of choice of college major. Only those scales which were found to be significantly related to at least one of the groups under consideration are reported.

For male subjects, the Responsibility Scale of the CPI was related positively to being decided in a choice of major in comparison with being undecided. The undecided group scored lower than the changed group on this scale, also, with the changed and decided groups scoring similarly. The point biserial coefficients for the Responsibility Scale are reported in Table XII.

According to Gough (1964), high scores on this scale indicate individuals who are responsible, capable, independent and resourceful; low scores are indicative of individuals who are immature, changeable and impulsive. To the extent that these adjectives accurately describe high and low scorers on this scale, the relationship for males between being decided or undecided and the Responsibility Scale are consistent with previous research in which the undecided student appeared to be more dependent and less able to give attention to solving problems.

The relationships for the female subjects on the Responsibility Scale were in the same direction as for the male subjects. However, no significant relationships were indicated between the scale and any criterion of choice of college major.

Relationships similar to the ones for the Responsibility Scale

TABLE XII

POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE RESPONSIBILITY SCALE OF THE CPI
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.30 .0005**	-.10 .23
With Communality scores greater than 19	-.34 .0003**	
Decided-Changed		
Total Group	.08 .56	.10 .92
With Communality scores greater than 19	.10 .63	
Undecided-Changed		
Total Group	.32 .005**	.10 .63
With Communality scores greater than 19	.36 .003**	

**significant at the .01 level

were found to exist for male subjects on the Socialization Scale of the CPI. Higher scores on the scale were related to being decided rather than undecided, with the changed group scoring higher than the undecided group, too.

TABLE XIII

POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE SOCIALIZATION SCALE OF THE CPI
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.16 .05*	.02 .80
With Communality scores greater than 19	-.18 .04*	
Decided-Changed		
Total Group	.11 .29	.05 .60
With Communality scores greater than 19	.15 .16	
Undecided-Changed		
Total Group	.24 .03*	.04 .70
With Communality scores greater than 19	.29 .01**	

* significant at the .05 level

**significant at the .01 level

High scores on this scale are indicative of individuals who are serious, conscientious, conforming and responsible in comparison with low scorers who tend to be defensive, undependable and rebellious (Gough, 1964). No significant relationships were found between any of the female groups and the Socialization Scale with all correlation coefficients approaching zero. Table XIII contains the point biserials indicating these relationships.

Being decided as opposed to undecided was related to higher scores on the Achievement via Independence Scale of the CPI for both males and females. The relationships for this scale are reported in Table XIV. Individuals who score high on this scale are described as mature, dominant, independent and self-reliant in comparison with low scorers who are described as inhibited, submissive, lacking in self-insight and self-understanding (Gough, 1964). These results are in congruence with results of previous research in which the decided student seemed to be more dominant in interpersonal relationships and more independent. In addition, these results are consistent with the notion that the decided student has a more well defined self-concept than does the undecided student. However, the results of this scale and the Socialization Scale do not appear consistent with regard to conformity which is related to dependence and independence. The Socialization Scale indicates that the decided group is more conforming, whereas the Achievement via Independence Scale indicates that the undecided group is more conforming. These results may not be disparate if the manner in which the conformity is expressed is taken into consideration. Decided students tend to express their conformity in a positive and socially acceptable way, as in being

steady and dependable; whereas undecided students are characterized as expression their conformity through being cautious and submissive before authority. Similarly, undecided students on the Socialization Scale appear to be more independent than decided students although this independence is expressed in a rebellious and undependable manner. The decided students on the Achievement via Independence Scale are characterized as expressing their independence in a mature, foresighted and self-reliant manner.

TABLE XIV

POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE ACHIEVEMENT VIA INDEPENDENCE SCALE OF THE CPI
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.18 .02*	-.19 .02*
With Communality scores greater than 19	-.22 .01**	
Decided-Changed		
Total Group	-.05 .62	-.17 .07
With Communality scores greater than 19	.03 .72	
Undecided-Changed		
Total Group	.11 .63	.00 .98
With Communality scores greater than 19	.15 .22	

* significant at the .05 level

**significant at the .01 level

No significant relationships were found between the Achievement via Independence Scale and being decided versus changed or being undecided versus changed for either males or females. The changed female group scored similarly to the undecided female group. The scores for the changed male group were like the scores for the decided male group.

The point biserial coefficients indicating the relationships for the Femininity Scale are given in Table XV.

TABLE XV
POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE FEMININITY SCALE OF THE CPI
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.34 .0002**	.12 .13
With Communalities scores greater than 19	-.39 .0001**	
Decided-Changed		
Total Group	.03 .74	-.21 .03*
With Communalities scores greater than 19	.07 .52	
Undecided-Changed		
Total Group	.30 .008**	-.35 .0006**
With Communalities scores greater than 19	.38 .001**	

* significant at the .05 level

**significant at the .01 level

For male subjects, being decided rather than undecided was related to higher scores on the Femininity Scale of the CPI. The changed male group also scored higher than the undecided group on this scale. High scores on this scale are indicative of individuals who are patient, moderate, persevering and conscientious; low scores characterize individuals who are outgoing, restless, blunt and impatient with delay (Gough, 1964). These results are consistent with results of the Socialization and Responsibility Scales and with earlier research in which it was hypothesized that undecided students are less able to concentrate on a problem over a period of time.

For the females, the Femininity Scale was not related to being decided or undecided. Although non-significant, the direction of the relationship between the scale and being decided or undecided was opposite to that of the males as the undecided female group scored higher on the Femininity Scale than did the decided group. Both decided and undecided females tended to score significantly higher on the scale than the female subjects in the changed group indicating that the subjects in the changed group tended to be more blunt and impatient with delay and indecision than decided and undecided females.

Two significant relationships were found for male subjects on the Tolerance Scale of the CPI when only those subjects whose Communality scores were greater than 19 were considered. The correlation coefficients for this scale are reported in Table XVI. Higher scores on this scale were related to being decided and changed rather than being undecided in a choice of major. Low scores on this scale are indicative of individuals who are aloof, passive and distrustful in

personal and social outlook (Gough, 1964). These results are consistent with earlier findings in which undecided students were found to be more passive in their interpersonal relationships than decided students.

TABLE XVI
POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE TOLERANCE SCALE OF THE CPI
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.13 .11	-.10 .21
With Communality scores greater than 19	-.17 .04*	
Decided-Changed		
Total Group	.07 .52	.09 .61
With Communality scores greater than 19	.09 .56	
Undecided-Changed		
Total Group	.19 .08	.17 .08
With Communality scores greater than 19	.24 .04*	

* significant at the .05 level

No relationships existed for any of the female groups and the Tolerance Scale. The direction of the relationships was the same

as for the male subjects, with undecided females scoring lower than decided or changed females.

For the female subjects, being decided or changed on a choice of major was related positively to the Intellectual Efficiency Scale of the CPI in comparison with being undecided in a college major, with the decided and changed groups scoring similarly. The relationships for this scale are given in Table XVII.

TABLE XVII

POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE INTELLECTUAL EFFICIENCY SCALE OF THE CPI
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.12 .15	-.20 .01**
With Communalities scores greater than 19	-.13 .14	
Decided-Changed		
Total Group	-.06 .57	.12 .20
With Communalities scores greater than 19	-.01 .90	
Undecided-Changed		
Total Group	.03 .77	.26 .009**
With Communalities scores greater than 19	.09 .52	

**significant at the .01 level

High scores on this scale are characteristic of individuals who are efficient, capable and resourceful; low scores indicate individuals who are cautious, confused, unambitious and lack self-direction (Gough, 1964). For the females, these results are congruent with other studies that have characterized undecided students as having a self-concept that is not as well defined as decided students.

For the male subjects, the Intellectual Efficiency Scale was not related to being decided, undecided or changed. The direction of the relationship for being decided or undecided was the same as for females.

The Psychological-mindedness Scale of the CPI was related positively to being decided in comparison with being undecided for females. The relationships for this scale are reported in Table XVIII. Although the decided males scored higher on this scale than did the undecided males, the relationship was not significant. High scorers on this scale tend to be spontaneous, perceptive, resourceful and rebellious towards restrictions; whereas low scorers tend to be cautious, unassuming and overly conforming (Gough, 1964). These results are consistent with the Achievement via Independence Scale and with previous research which suggested that the undecided student was more passive and dependent than the decided student. The relationships between the scale and being decided-changed or undecided-changed were not significant for either males or females.

Scales Related to Changed-Decided, -Undecided

Being decided in comparison with being changed, or being undecided in comparison with being changed in regard to a choice of college major were related to several other scales which were not

TABLE XVIII
 POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
 FOR THE PSYCHOLOGICAL-MINDEDNESS SCALE OF THE CPI
 AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.14 .09	-.24 .003**
With Communalities scores greater than 19	-.16 .06	
Decided-Changed		
Total Group	-.11 .30	-.04 .71
With Communalities scores greater than 19	-.17 .11	
Undecided-Changed		
Total Group	.00 .98	.17 .08
With Communalities scores greater than 19	-.06 .64	

**significant at the .01 level

related to being decided in comparison with being undecided. A discussion of these findings follows.

For the male subjects, those who were decided tended to score significantly lower on the Communality Scale of the CPI in comparison with the changed group when those subjects who scored 19 or less on the Communality Scale were excluded. Relationships for this scale are given in Table XIX. These results support the idea that the changed group tends to be more dependable, realistic and conscientious than the decided group on the basis of characteristics of individuals scoring high and low on the scale (Gough, 1964).

On the Exhibition Scale of the EPPS, the decided group scored higher than the changed group indicating that the decided group tends to have a greater need than the changed group to be the center of attention (Edwards, 1959). The undecided males also scored higher than the changed group on this scale although the relationship was not significant. Correlations for this scale are presented in Table XX.

For the males, being decided rather than changed was related significantly to the Change Scale of the EPPS when those subjects with a Consistency score of 9 or less were eliminated. The same relationship existed between the Change Scale of the EPPS and being undecided rather than being changed for the male subjects as the undecided group scored higher on this scale than did the changed group. On the basis of this scale, both the decided and undecided male subjects tend to have a greater need to do new and different things in comparison with the changed group (Edwards, 1959). The correlations for this scale are presented in Table XXI.

TABLE XIX
 POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
 FOR THE COMMUNALITY SCALE OF THE CPI
 AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.04	.09
	.63	.29
With Communality scores greater than 19	.03	
	.74	
Decided-Changed		
Total Group	.05	.03
	.64	.76
With Communality scores greater than 19	.21	
	.05*	
Undecided-Changed		
Total Group	.08	-.05
	.52	.63
With Communality scores greater than 19	.20	
	.09	

* significant at the .05 level

TABLE XX
 POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
 FOR THE EXHIBITION SCALE OF THE EPPS
 AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.02 .84	.05 .54
With Consistency scores greater than 9	-.03 .73	.04 .62
Decided-Changed		
Total Group	-.20 .05*	.00 .98
With Consistency scores greater than 9	-.23 .03*	.00 .97
Undecided-Changed		
Total Group	-.19 .08	-.05 .63
With Consistency scores greater than 9	-.22 .09	-.04 .69

* significant at the .05 level

TABLE XXI
 POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
 FOR THE CHANGE SCALE OF THE EPPS
 AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	.10 .24	.00 .96
With Consistency scores greater than 9	.14 .12	-.01 .86
Decided-Changed		
Total Group	-.15 .13	.03 .72
With Consistency scores greater than 9	-.21 .05*	.04 .63
Undecided-Changed		
Total Group	-.24 .03*	.04 .67
With Consistency scores greater than 9	-.37 .005**	.07 .50

* significant at the .05 level

**significant at the .01 level

Several additional relationships were found when the undecided male subjects were compared with the changed male subjects. The undecided males scored lower on the Nurturance Scale of the EPPS when compared with the changed group. Relationships for this scale are presented in Table XXII.

TABLE XXII

POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE NURTURANCE SCALE OF THE EPPS
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.09 .27	.06 .50
With Consistency scores greater than 9	-.10 .30	
Decided-Changed		
Total Group	.15 .13	-.02 .86
With Consistency scores greater than 9	.19 .09	-.03 .58
Undecided-Changed		
Total Group	.27 .01**	-.07 .52
With Consistency scores greater than 9	.35 .008**	-.07 .51

**significant at the .01 level

These relationships support the notion that the undecided males do not have as great a need to help others as the changed males do (Edwards, 1959). The decided male group also scored lower than the changed group on this scale although the relationship was not significant. All relationships on this scale which involved the female subjects approached zero.

On the Affiliation Scale of the EPPS, the undecided males again scored lower than the changed males indicating that the undecided males tend to have less need for friendship than the changed group (Edwards, 1959). This relationship was not significant when those subjects with a Consistency score of 9 or less were eliminated. The changed males also scored higher on this scale than the decided group but with the relationship being non-significant. Correlations for this scale are given in Table XXIII.

The Achievement via Conformity Scale of the CPI was another scale on which the undecided males scored lower than the changed males when subjects with Communality scores of 19 or less were excluded from the analysis. This supports the idea that undecided males tend to be more aloof, more insecure and more pessimistic about their occupational futures based on the characteristics of individuals who score low on this scale (Gough, 1964). The undecided males scored lower on the scale than the decided males, too, although the relationship was not significant. Correlations for this scale are given in Table XXIV.

For the female subjects, no additional scales other than the ones previously cited were related to being decided rather than changed in a choice of college major. However, for the undecided

TABLE XXIII
 POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
 FOR THE AFFILIATION SCALE OF THE EPPS
 AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.07 .58	.11 .18
With Consistency scores greater than 9	-.08 .60	.13 .12
Decided-Changed		
Total Group	.14 .18	.08 .55
With Consistency scores greater than 9	.13 .24	.04 .70
Undecided-Changed		
Total Group	.23 .04*	-.01 .88
With Consistency scores greater than 9	.24 .07	-.08 .53

* significant at the .05 level

TABLE XXIV
 POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
 FOR THE ACHIEVEMENT VIA CONFORMITY SCALE OF THE CPI
 AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Uncolcided		
Total Group	-.15	-.12
	.06	.12
With Communalitv		
scores greater than 19	-.16	
	.06	
Decided-Changed		
Total Group	.05	.04
	.62	.65
With Communalitv		
scores greater than 19	.11	
	.67	
Uncolcided-Changed		
Total Group	.18	.16
	.10	.11
With Communalitv		
scores greater than 19	.25	
	.03*	

* significant at the .05 level

females, there were three additional scales related to being undecided in one's major rather than being changed.

The Succorance Scale of the EPPS was related to being undecided as opposed to being changed. High scores on this scale are indicative of a need to be helped by others (Edwards, 1959). Relationships for this scale are given in Table XXV.

TABLE XXV
POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE SUCCORANCE SCALE OF THE EPPS
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.01 .85	.08 .66
With Consistency scores greater than 9	-.01 .90	.09 .28
Decided-Changed		
Total Group	.01 .95	-.13 .19
With Consistency scores greater than 9	-.06 .58	-.15 .11
Undecided-Changed		
Total Group	.02 .87	-.23 .02*
With Consistency scores greater than 9	-.06 .67	-.27 .009**

* significant at the .05 level

**significant at the .01 level

Negative relationships were found between being undecided in contrast with being changed and the Sociability and Good Impression Scales of the CPI. Results of these scales are presented in Tables XXVI and XXVII respectively.

TABLE XXVI
POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE SOCIABILITY SCALE OF THE CPI
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	-.04 .66	-.10 .21
With Commnality scores greater than 19	-.02 .79	
Decided-Changed		
Total Group	-.09 .62	.18 .06
With Commnality scores greater than 19	-.09 .56	
Undecided-Changed		
Total Group	-.07 .55	.27 .006**
With Commnality scores greater than 19	-.08 .54	

**significant at the .01 level

Low scores on the Sociability Scale are characteristic of persons who are conventional, submissive and passive in attitude (Gough, 1964).

The undecided females scored lower on this scale than the decided females with the relationship being non-significant. Low scores on the Good Impression Scale are characteristic of individuals who are cautious, aloof and distant in their relationships with others (Gough, 1964). Again, the undecided females scored lower on the scale than the decided females although the relationship was not significant.

TABLE XXVII

POINT BISERIAL COEFFICIENTS AND LEVELS OF SIGNIFICANCE
FOR THE GOOD IMPRESSION SCALE OF THE CPI
AND EACH CRITERION OF CHOICE

	Males	Females
Decided-Undecided		
Total Group	.01	-.15
	.93	.07
With Communality scores greater than 19	-.02	
	.78	
Decided-Changed		
Total Group	.07	.08
	.53	.55
With Communality scores greater than 19	.11	
	.67	
Undecided-Changed		
Total Group	.08	.22
	.50	.02*
With Communality scores greater than 19	.14	
	.26	

* significant at the .05 level

Overall View of the Data

The EPPS indicated that there were some significant relationships between being decided or undecided in one's major in comparison with being changed in one's choice of major; but no significant relationships were found between any of the scales and being decided or undecided for either males or females. The CPI was the only instrument which indicated significant relationships between being decided or undecided in one's major and certain personality characteristics. To aid in interpreting the results involving this inventory, Figures 1 and 2 are provided.

In comparison with the college norm groups for the CPI, the decided and undecided subjects in this investigation scored lower on all scales except the Self-Acceptance and Femininity Scales. On the Self-Acceptance Scale, the means for both male and female, decided and undecided groups were higher than the norm groups. On the Femininity Scale, the means for the decided and undecided female groups were greater than the mean of the college female norm group. Because the decided and undecided subjects in this investigation scored below the mean of the norm groups on the vast majority of the scales, it cannot be said that the decided groups have characteristics of high scorers on the various scales. Only in relation to the undecided groups under consideration do the decided groups exhibit greater tendencies to resemble high scorers on the scales. It may be best to consider the decided groups in this investigation as having less tendency than the undecided groups to resemble the characteristics of low scorers on the scales in which there were significant

Standard Scores

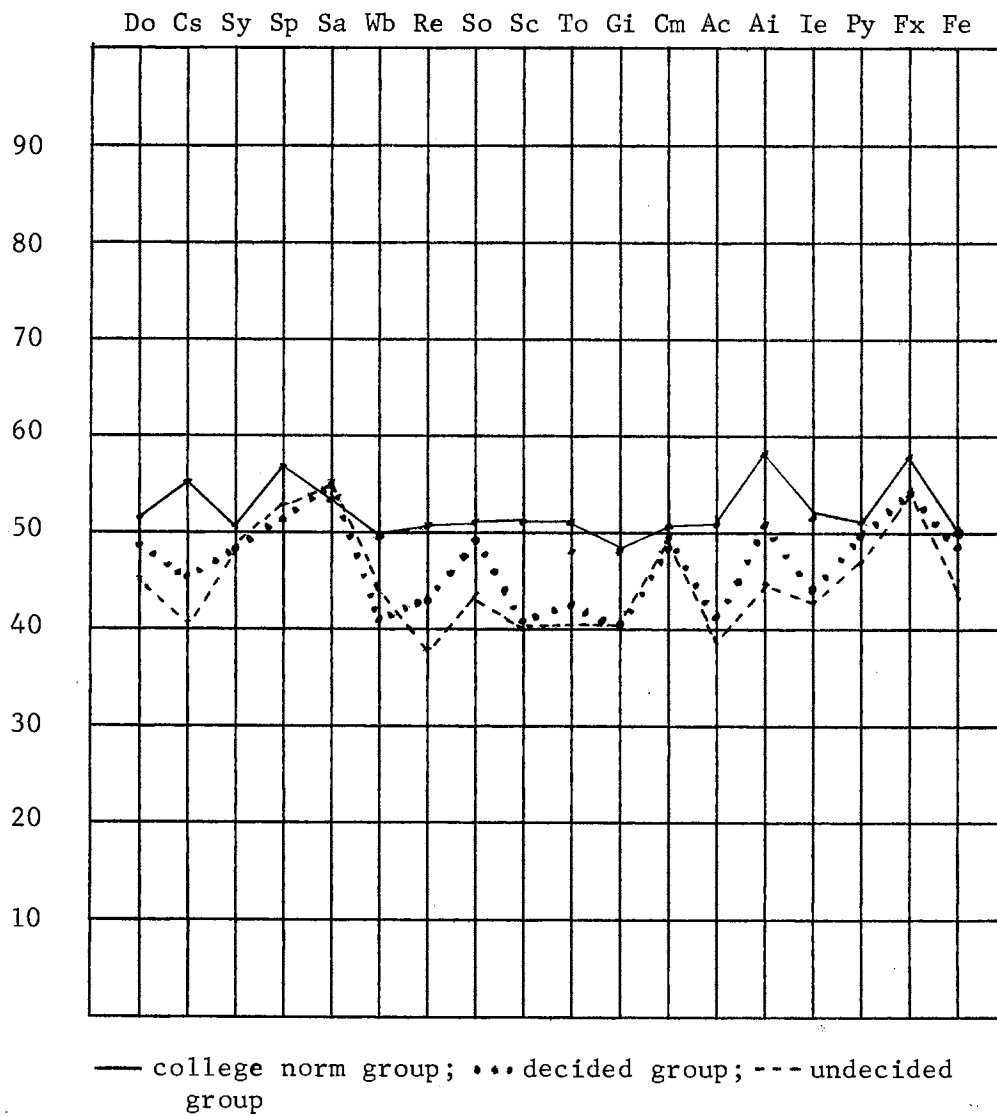
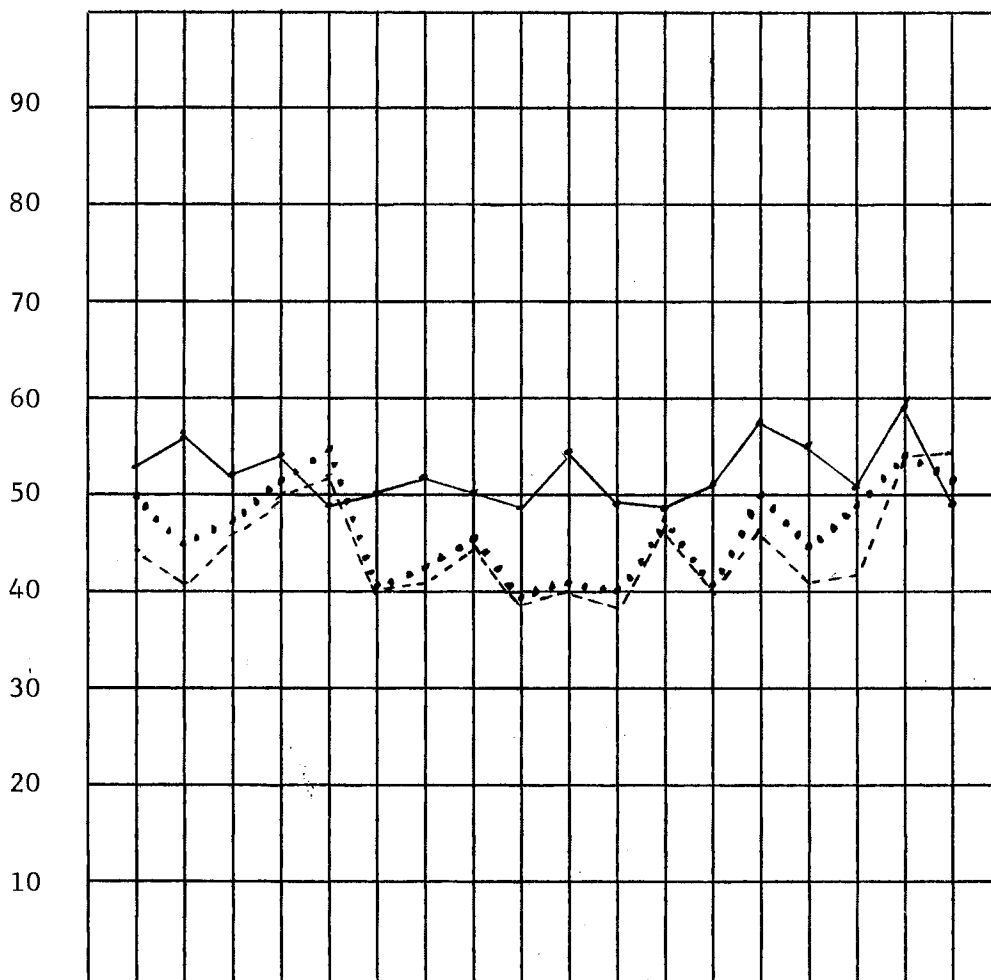


Figure 1. Mean Profiles on the CPI for Males: College Norm Group; Decided Group; Undecided Group

Standard Scores

Do Cs Sy Sp Sa Wb Re So Sc To Gi Cm Ac Ai Ie Py Fx Fe



— college norm group;decided group; ---undecided group

Figure 2. Mean Profiles on the CPI for Females: College Norm Group; Decided Group; Undecided Group

relationships, rather than having a tendency to resemble high scorers on these scales.

Summary

The purpose of this chapter was to present the results of the present investigation. The data discussed in the chapter resulted from information derived from the EPPS and the CPI. With one exception, there were no relationships between being decided or undecided in a choice of major and the scales that were stated in the hypotheses as representing certain personality characteristics. The one exception refers to the finding that female subjects who were decided in their majors in comparison with those who were undecided tended to score significantly higher on the Dominance Scale of the CPI. The decided female subjects also tended to score significantly higher than the undecided group on the Achievement via Independence, Intellectual Efficiency and Psychological-mindedness Scales of the CPI.

The decided female subjects in comparison with the changed group scored higher on the Femininity Scale of the CPI. The female subjects undecided in their majors as compared with those who were in the changed category had lower scores on the Dominance, Intellectual Efficiency, Sociability and Good Impression Scales of the CPI. They scored higher than the changed group on the Femininity Scale of the CPI and the Succorance Scale of the EPPS.

The scales of the CPI which were related to being decided in a major as opposed to being undecided in a college major for the male subjects were the Responsibility, Socialization, Achievement via

Independence, Femininity and Tolerance Scales. In comparison with the changed group, the male subjects who were decided in their choice of major scored higher on the Exhibition and Change Scales of the EPPS and lower on the Communality Scale of the GPI.

The undecided male subjects in contrast with the changed group scored higher on the Change and Autonomy Scales of the EPPS. They scored lower on the Nurturance and Affiliation Scales of the EPPS and lower on the Responsibility, Socialization, Femininity, Tolerance and Achievement via Conformity Scales of the GPI.

The following chapter will present a general summary of the investigation and conclusions based on the findings; implications of the study and suggestions for future research will be included.

CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

This chapter gives a general summary of the investigation. The summary is followed by important findings of the investigation and conclusions based on these findings. A final section is devoted to recommendations for further research.

Summary

The basic question of this investigation asked whether or not there are certain measurable personality traits related to declaring or not declaring a major during the first semester of college. To explore this question, 329 freshman students who were enrolled in the College of Arts and Sciences at Oklahoma State University responded to two personality inventories, the EPPS and the CPI. The subjects were divided into three categories: decided, undecided, changed. These categories reflected the subjects' classification regarding a choice of major or lack of choice during the initial freshman semester of college. Appropriate statistical procedures were utilized to discover the degree of relationship between the three choice of major criteria and the measured personality characteristics.

The personality characteristics suggested by previous research as related to being decided or undecided in a major were independence,

flexibility, dominance in interpersonal relationships, a well defined self-concept and ability to attend to a problem for an extended period of time. Specific scales of the EPPS and the CPI were referred to in the hypotheses in Chapter I as measuring these personality characteristics. In addition, all other scales of the EPPS and the CPI were correlated with the three choice of major criteria to explore the possibility of other relationships which might exist.

Findings and Conclusions

No significant relationships were found between being decided or undecided in a choice of college major and any of the scales which were referred to in the hypotheses with the exception of one, the Dominance Scale of the CPI, which showed a significant relationship for the female subjects. However, other scales of the CPI were found to be related significantly to being decided or undecided in a choice of major although they were not referred to specifically in the hypotheses.

The findings of this research indicate that decided and undecided students are more similar than dissimilar in personality characteristics as there were more scales which were not related to being either decided or undecided in a major than there were scales which did indicate significant relationships. However, the significant relationships which were found are consistent with previous research findings regarding the personality characteristics of decided and undecided students (Cordrey, 1965; Watley, 1965; Ashby, Wall and Osipow, 1966; Finnegan, 1971; Bohn, 1971; Bordin and Kopplin, 1973). The characteristics of decided and undecided students that

are indicated by the results of the investigation exist on a continuum. They do not describe the decided and undecided students in any absolute sense, but suggest tendencies toward which one group approaches more or less than the other.

By comparing the findings of this research with factor analytic studies of the CPI (Mitchell and Pierce-Jones, 1960; Crites, et al., 1961; Springob and Struening, 1964), the following conclusions were made by the investigator. For male subjects who decided on a major in relation to those who did not chose a major, the findings support the notion that there are variations in terms of socialization, maturity and responsibility, with the decided students tending to be more responsible and conscientious. In addition, they tend to be more mature socially and more accepting and non-judgmental towards others; whereas the undecided male subjects tend to be more immature, impulsive and less dependable. The undecided males also tend to be less tolerant and more aloof from others. The decided males appear to have a greater tendency to be self-reliant and dominant in their achievement orientation in comparison with the more cautious and submissive orientation of the undecided subjects. In terms of mode of interest, the decided male subjects tend to be less oriented towards masculinity of interest than the undecided subjects which provides a basis for suggesting that the decided males tend to be more patient, helpful and persevering compared with the undecided males who tend to be more impatient, blunt and manipulative in their dealings with others.

For the female subjects, the findings were consistent in supporting the notion that the undecided female tends to be less

independent and less dominant than the decided female. All of the scales on which the undecided group scored lower than the decided group served to portray the undecided females as having less tendency to be self-reliant, resourceful and efficient in comparison to the decided females. There was indication that undecided females tend to be less likely than decided females to initiate social contacts or to assume leadership positions; they also tend to be more cautious and conforming in dealing with authorities. An additional tendency was for the undecided females to be more confused and to lack self direction in relation to the decided group.

Results for both males and females are supportive of previous research in which the undecided student was portrayed as more dependent and more passive in interpersonal relationships. The findings for the male subjects also give support to the idea that the undecided student may be more impulsive and not as persevering as the decided student, making it difficult to concentrate on a problem for an extended period of time. Results for the female group support the idea that undecided students may have a less well defined self-concept and lack direction in future plans. However, these results are not conclusive as there was indication from other scales measuring similar traits that these characteristics are not related to being decided or undecided in a choice of college major. A more refined differentiation among the scales is needed to clarify the characteristics related to being decided or undecided in a choice of college major.

In summary, the investigator concluded that the undecided student in relation to the decided student tends to be less mature in his social and personal development. The undecided student does

not seem to be as self-reliant and resourceful as the decided student nor does he appear to relate to others as spontaneously as the decided student. This provides a basis for suggesting that counselors and student personnel workers may be of service to the undecided student by providing opportunities for personal and social growth. Such growth has the possibility to be realized through individual counseling, growth groups and various outreach programs in which counselors and other student personnel workers are involved. Of course, the college experience offers informal opportunities for personal and social development, also. At the least, counselors and student personnel workers need to be aware that working with a student who is undecided in his major requires more than a focus on educational and vocational concerns. Perhaps, as has been suggested by authors of previous research, the undecided student may be more able to decide on a college major as he becomes more autonomous and assured in his own being and in his relationships with others. This cannot be stated as fact on the basis of the present investigation or on the basis of the previous research cited. But because the undecided student has a tendency to be less self-reliant and less outgoing in his interactions with others, focus on personal and social concerns may be fruitful.

Recommendations

The present investigation has made a contribution to existing research on the relationship of personality characteristics to being decided or undecided in a college major. Additional research is needed to delineate further what these characteristics are and to

implement programs based on the findings that may be helpful to the undecided student. Following are recommendations for further research based on the present study:

1. It is recommended that a follow-up investigation be conducted with the same subjects as they progress through college, comparing those who remain undecided with those who have chosen a major. This would provide an opportunity to see if the tendencies suggested in this investigation become more or less defined beyond the freshman year of college. It is possible that the distinction between being decided or undecided in a major becomes defined more clearly after the freshman year in which it is very acceptable not to have made a choice of major. Studying these subjects beyond the freshman year could provide more insight into the personality characteristics of undecided students and at the same time provide a more substantial theoretical framework for working with these students.

2. In order to have other measurements of personality characteristics which may be more valid, it is recommended that criterion related behaviors in addition to paper and pencil inventories be employed as measurements for personality characteristics in exploring the relationship between these characteristics and being decided or undecided in a major. Such measurements of dependency, passiveness in interpersonal relationships, well defined self-concept and attending to a problem for an extended period of time may provide more or less support for viewing these characteristics as relevant in understanding the undecided student.

3. Based on the findings of this investigation in addition to a review of the validity of the instrument, the EPPS is not

recommended for use in exploratory studies involving groups of decided and undecided students.

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APPENDIX A

POINT BISERIAL COEFFICIENTS FOR THE EPPS SCALES

NOT REPORTED IN THE TABLES

	ACH	DEF	ORD	INT	DOM	ABA	END	HET	AGG
<u>Males</u>									
Decided-Undecided									
Total Group	-.10	-.05	-.05	-.10	-.10	-.02	.08	.09	.10
With CON scores greater than 9	-.11	-.01	.02	-.12	-.12	-.03	-.04	.15	.08
Decided-Changed									
Total Group	.03	.03	.11	-.15	-.04	.06	.13	-.06	.08
With CON scores greater than 9	.06	.04	.11	-.10	-.05	.06	.17	-.02	.05
Undecided-Changed									
Total Group	.11	.08	.15	.09	.04	.10	.20	-.15	.00
With CON scores greater than 9	.15	.08	.10	-.02	.05	.10	.21	-.17	-.03
<u>Females</u>									
Decided-Undecided									
Total Group	-.12	.07	.02	-.06	-.13	.08	-.09	-.08	.10
With CON scores greater than 9	-.13	.12	.05	-.06	-.13	.08	-.09	-.09	.07
Decided-Changed									
Total Group	-.09	.02	-.01	-.01	.05	-.02	.05	-.12	.05
With CON scores greater than 9	-.06	.04	.04	-.01	.00	.01	.07	-.13	.05
Undecided-Changed									
Total Group	.01	-.04	-.03	.05	.17	-.08	.15	-.04	-.03
With CON scores greater than 9	.05	-.06	-.01	.04	.11	-.06	.17	-.04	-.02

APPENDIX B

POINT BISERIAL COEFFICIENTS FOR THE CAPACITY
FOR STATUS SCALE OF THE CPI

	Males	Females
Decided-Undecided		
Total Group	-.06	-.11
With Communality scores greater than 19	-.11	
Decided-Changed		
Total Group	-.05	.03
With Communality scores greater than 19	-.01	
Undecided-Changed		
Total Group	.00	.12
With Communality scores greater than 19	.08	

VITA ^d

Cheryl S. Martin

Candidate for the Degree of

Doctor of Education

Thesis: THE RELATIONSHIP OF SELECTED PERSONALITY CHARACTERISTICS
TO DECIDING OR NOT DECIDING ON A COLLEGE MAJOR

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