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**Personality correlates of decidedness in the choice of a major
career field**

Gedney, Nancy Victoria, Ph.D.

The University of Arizona, 1989

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PERSONALITY CORRELATES OF DECIDEDNESS
IN THE CHOICE OF A MAJOR CAREER FIELD

by

Nancy Victoria Gedney

A Dissertation Submitted to the Faculty of the
DEPARTMENT OF PSYCHOLOGY
In Partial Fulfillment of the Requirements
For the Degree of
DOCTOR OF PHILOSOPHY
In the Graduate College
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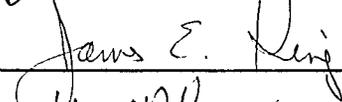
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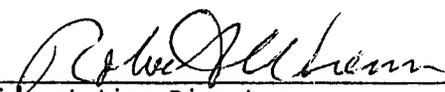
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DEDICATION

For Curt

And the greatest of these is Love

Man

If it is possible for a multibillion-dollar education program to train people to see themselves as limited beings, it should also be possible for that program to encourage people to see themselves as embodiments of the capacity to transcend their present concepts of themselves and their powers.

Sidney T. Jourard

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My mother, Louise, alphabetized, hand-coded, cooked, shopped and ran errands for me over the past year. My husband, Curt, is the reason I finished, purely and simply. My daughters, Marcy and Tish gave up a traditional mom for a professional one. They were cheerleaders, encouragers and just plain patient with the process--most of the time. Thank you, my family. There are not words enough!

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ABSTRACT

The purpose of this study was to provide research into the relationship between level of decidedness and development in college freshmen. Through discriminant function analysis variables were identified that can be used in the classification of college students into three levels of decidedness: undecided, tentatively decided and decided. These levels of decidedness are constructs that have been defined by this study in such a way that classification of students is correct 70.58% of the time. The aim of the study was not classification, but increased understanding into the nature of students' developmental processes in relationship to their having chosen or not chosen an academic major.

During summer orientation at a major university students were given assessment instruments that measured level of major and career decidedness and level of development. Results indicated that decided students had a stronger sense of their own interests, skills and abilities, were more likely to have goals and purpose, and were able to manage and plan their lives with greater facility than either tentatively decided or undecided students. Undecided students know little about majors or careers and were not particularly motivated to seek information or begin a career planning process. No significant differences were found between levels of decidedness on high school achievement or demographic variables. Significant differences between

male and female subjects were found in a large number of variables.

Several conclusions are drawn from this study. First, an essential consideration in moving a student toward decidedness in major or career choice is the student's level of development as expressed by the completion of certain developmental tasks. Secondly, the relationship shown in this study between decidedness and development strongly suggests a relationship between development and retention. Thirdly, self-reported level of decidedness is not a reliable indicator of the degree to which a student has completed important developmental tasks. Therefore, undecided students should not be assumed to be underdeveloped; neither should decided students be assumed to be developmentally mature. Finally, the most significant conclusion of this study is the unquestionable necessity of working within the context of student development when "educating" college freshmen.

CHAPTER 1

INTRODUCTION

Young men and women between adolescence and adulthood in the college or university environment move through a dynamic period of intellectual and psychosocial development. Arthur Chickering (1969), in Education and Identity, designated this developmental period between the ages of 18 and 25 as the "young adult" period. He noted that it differs substantially from adolescence and adulthood, and should be studied as a separate developmental stage. He identified seven vectors, or dimensions, along which students develop while in college:

1. Achieving Competence--This vector includes intellectual, physical, and social/interpersonal competence. Chickering (1969, p. 9) highlights "the sense of competence, the confidence one has in his ability to cope with what comes and to achieve successfully what he sets out to do" as the most significant part of this vector.

2. Managing Emotions--The student must learn to observe feelings, learn to integrate feelings with other behaviors, learn more effective ways of expressing emotions, and recognize the consequences of behaviors based on emotional impulses. Two areas of emotion that must be managed are sexual and aggressive impulses.

3. Becoming Autonomous--Autonomy is the development of a stable, mature emotional independence that is free from the continual

need for approval or reassurance. It is characterized by the ability to work independently, but also by the recognition and acceptance of the fact that one must interact with others and is, therefore, emotionally interdependent.

4. Establish Identity--Identity is the sense of knowing oneself as an individual entity. It is a composite of knowledge of one's physical being, appearance, emotions, memories, and interpersonal relationships. In order to develop identity, a young person must also be actively developing autonomy, competence and emotional maturity. A strong sense of identity is necessary for development on the following vectors.

5. Freeing Interpersonal Relationships--This vector involves becoming less anxious, less defensive and more tolerant in interpersonal interactions. The goal of this development is trust, independence and individuality within interpersonal relationships.

6. Clarifying Purposes--To have purpose is to have a sense of direction and meaning. To achieve purpose one must learn to formulate personal, avocational, vocational and lifestyle plans and priorities.

7. Developing Integrity--Chickering (1969, p. 17) defines integrity as "the clarification of a personally valid set of beliefs that have some internal consistency and that provide at least a tentative guide for behavior." There are three stages in this dimension of development: the humanizing of values, wherein formerly rigid, unquestioned rules become relative to experience and conditions; the personalizing of values, wherein rules and values take on individualized

characteristics of the one who holds them; and the development of congruence, or the establishment of behavior based on the personalized values held.

These vectors are the basis of a movement at many universities to encourage "total student development," in which education fosters students' psychological, intellectual, vocational, social and physical growth and change (Kitchener, 1982; Miller and McCaffrey, 1982), as opposed to merely enhancing "intellectual development."

While working through the various dimensions, young people will accomplish certain "developmental tasks." These are "culturally specific events that occur at approximately the same time in life [for] a given age cohort" (Mines, 1982, p. 83). The concept of the developmental task is based on certain developmental assumptions: that individual development is characterized by growth toward increased complexity, discrimination and integration; that development is continuous; that development is multi-dimensional; that development is cumulative; and that quantitative changes in development produce qualitative changes in the developing individual (Drum, 1980). Since accomplishment of basic tasks is necessary in order for young adults to be able to work effectively within a particular domain in the future (Winston and Polkosnik, 1986), the ability to choose a major and a career is a domain which requires the completion of certain developmental tasks (Gordon, 1981). Most developmental theorists have concentrated their research and theories on the adolescent and/or the young adult (Adams and Fitch, 1982; Erikson, 1963; Fitch and Adams, Harter, 1983; Marcia, 1980).

Erikson (1963) has been the primary theorist in the psychology of the adolescent. His work on the development of identity in the adolescent laid the foundation for the subsequent theory of the "young adult." He describes the stage of adolescence as the movement from crisis to resolution of the conflict between identity and role confusion. This conflict is based not only on societal pressures on the developing adolescent, but also physical changes that are imminent. Erikson suggests that the cultural environment in which the adolescent finds himself allows a moratorium during which the conflict can be resolved and the adolescent integrated into society.

Erikson's stage following adolescence is that of young adulthood. Erikson's "young adult" faces the crisis of trying to establish intimate, particularly sexual, relationships with others that involve personal commitment. A young adult is unable to be successful in establishing such a relationship until he has established a sense of his own identity. Failure to develop intimacy results in isolation.

Marcia (1980), a prominent theorist in adolescent identity, admits that one of the most prominent difficulties in studying the adolescent is determining the termination of adolescence. "If the termination of adolescence were to depend on the attainment of a certain psychosocial position, the formation of an identity, then, for some, it would never end" (Marcia, 1980, p. 159). Identity is an even more difficult construct to describe.

Although identity development is the primary focus of adolescence, as the individual moves into "young adulthood" development becomes more complex and involves several additional dimensions.

Chickering's (1969) theory of the seven dimensions of the "young adult" is comprehensive in its grasp of the complexity of the traditional-aged college student. This theory has been developed for aiding professionals who work closely with college students in an attempt to outline the various tasks that may be facilitated during the higher education process. Whereas it reflects the need to establish mature interpersonal relationships, it also recognizes the complexity of the development of identity in the young adult. The division of the "young adult" stage of development into vectors aids the researcher in translating the steps of development into discrete tasks. Therefore, Chickering's development theory is appropriate for the investigation of undecidedness in the college student.

In the midst of developing a sense of individual identity, college students are faced with a serious decision they may not be equipped to make. As they enter a college situation, they are asked to choose an academic major that will be their primary intellectual focus for the next four years, but which also is the foundational material upon which they are expected to build a future career. The responsibility of such an immense task often bewilders and frightens entering freshmen. Many students are able to make informed choices about their major course of study; others choose, but are not well-informed about their interests and abilities, the content or requirements of the chosen course of study, or the vocational opportunities afforded by their choice of majors; and others are incapable of making a choice at all. These groups of students may be termed the decided, tentatively decided and undecided students, respectively.

Virginia Gordon (1984), in her book The Undecided College Student, suggests that knowledge of students' developmental stages can be used to clarify distinctions between undecided, decided and tentatively decided students. She emphasizes that each student is unique with regard to maturational development, cognitive and social skills, and personality characteristics and needs, and requires an individualized approach to advising.

Gordon (1981, p. 438) addresses vocational indecision not as a state of being, but as a dynamic process: "Undecided students are in many stages of vocational development. Counselors and teachers can provide the structure and support needed to challenge students to move into the next level of vocational maturity." She stresses that their strengths need to be examined, and that they need to set goals, design plans of action and continually evaluate their progress toward their goals. In taking a developmental approach to advising undecided students, Gordon emphasizes the importance of recognizing that, since students must accomplish certain specific psychosocial and cognitive tasks, the content, sequence and timing of special programs to assist them is essential.

Statement of the Problem

Studies have been conducted for over fifty years on the similarities and differences that exist between "decided" students, those who have chosen an academic major, and "undecided" students, those who have not yet identified an academic major. Various personality and academic variables have been used in an attempt to

differentiate between these two groups. Undecided students have been viewed both as a homogeneous and as a heterogeneous group of students. Research has treated undecidedness as both a unitary and a multiplistic concept. The problem is that the construct "undecidedness" has not been approached from a developmental perspective.

During the past twenty years, student development has been a popular topic in higher education. Not until 1974, however, was an instrument designed and validated that could assess student development. The need for research into the relationship between development and undecidedness has been much discussed, but little research has been conducted.

Purpose of the Study

The purpose of the study is to investigate the relationships between certain components of student development and the construct "undecidedness," using three levels of decidedness in college freshmen: decided, tentatively decided and undecided. This study will examine the relationship between these three levels of decidedness and developmental test scales, and high school, demographic, and personal perception variables.

Significance of the Study

Students at The University of Arizona must declare a major after completing 55 units of coursework. This requirement is based on research showing that students with majors have a lower attrition rate than do those who are undecided (Chase and Keene, 1981; Foote,

1980; Titley, Titley, and Wolff, 1976). Without an empirically based understanding of undecidedness and its relationship to a student's level of development, the requirement may be, for many students, a mere paper distinction, not a sign of more complex development. Students who have chosen majors are in many cases developmentally "undecided" because their major decision does not reflect a well-developed sense of purpose or an autonomous commitment. This study will add to the empirical definition of the construct "undecidedness" by showing its relationship to a student's development and, in so doing, add to the knowledge of psychological tasks necessary for the achievement of purpose and developmental autonomy at the college level.

In the spring of 1987, in response to recommendations of the Task Force on Academic Advising, the Provost of The University of Arizona allocated funds to the College of Arts and Sciences to establish a university-wide program for academically undecided students. These students traditionally have a high attrition rate and were targeted by the Task Force as having "a great need for developmental, holistic advising" (The University of Arizona, 1987). In response to the Task Force report, the College of Arts and Sciences instituted a policy that all students must declare a major at the completion of 55 units. To assist undecided students in major exploration and the expedition of choosing a major, the author of this study designed the Advising Center for Exploratory Students (ACES), a developmental advising system for undecided students.

It is this population of students upon whom the following hypotheses have been tested.

Hypotheses

1. The construct "undecidedness" cannot be differentiated from "decidedness" by demographics and high school academic information alone.
2. Of three types of undecided students, those who are tentatively decided will have lower high school academic grade point averages and class ranks than those who are undecided or decided. This will support the findings of Ashby, Wall, and Osipow (1966), who found decided and undecided students academically superior to tentatively decided students.
3. Decided students will not be differentiated from undecided students on any of the developmental scales in the Student Development Task and Lifestyle Inventory.
4. There will be no significant differences between male and female subjects in any of the areas assessed.

Review of the Literature

In The Undecided College Student, Virginia Gordon (1984) has thoroughly reviewed the literature on the undecided student. She divides research on indecision into three categories: studies that look at the antecedents to indecision; studies that differentiate decided and undecided students; and studies that investigate methods that lead undecided students to a decision.

Goodstein (1965), investigating the difference between indecision and indecisiveness, proposed two antecedent conditions related to career indecision. First, the person who lacks information about himself and the world of work is "vocationally immature" and, when failing to make a vocational choice, suffers mild anxiety. On the other hand, persons who suffer from antecedent anxiety whenever they try to learn about themselves or the world of work postpone making the necessary choices or gathering further information. The latter condition characterizes a state of "indecisiveness."

McGowan (1977) tested how career indecision and indecisiveness are differentially related to anxiety and vocational maturity. He found no statistically significant difference among decided, indecisive and undecided groups in anxiety levels and vocational maturity, thus calling into question the validity of Goodstein's results.

In order to understand the personality and demographic factors that differentiate vocationally undecided from decided students, Ashby, Wall, and Osipow (1966) explored the backgrounds, personalities, and college aptitude and achievement of undecided and decided freshmen. They chose to study three groups of students: those who were decided, undecided and tentatively decided about their career choice. The tentatively decided were clearly not committed to a course of study. Decided students had higher high-school grades than either undecided or tentatively decided. Undecided students scored higher on dependency measures. The three groups were differentiated on aptitude and achievement variables. There were no differences among groups on personality variables or family and school backgrounds.

Holland and Nichols (1964) studied National Merit finalists in an attempt to understand some of the personal attributes which contribute to a person's ability to make a vocational decision before entering college. Failure to make vocational decisions and the tendency to change plans were attributed to personality traits that led to achievement and creative performance. They concluded that undecided students may have a complex, creative outlook about the world, may be confused and unstable, may be poorly informed about vocations and may develop more slowly than those who are decided.

Elton and Rose (1970) studied undecided freshmen at graduation. They found no differences in personality or ability measures among previously undecided, major changers and decided. In a subsequent study they concluded that undecided students, though diverse, represent a population of adolescents undergoing identity confusion (Rose and Elton, 1971). Holland and Holland (1977) found that undecided students do not differ from decided students on personal characteristics, excepts perhaps their own sense of identity and vocational maturity. They suggest that undecided students are multiple subtypes rather than unitary types characterized by specific personality variables. Jones and Chenery (1980) created an instrument, The Vocational Decision Scale, for dividing vocationally undecided students into "relatively homogeneous subgroups" based on their reasons for being undecided.

Appel, Haak, and Witzke (1970) found six meaningful factors that describe undecided students: (a) situation-specific choice

anxiety, (b) data-seeking orientation, (c) concern with self-identity, (d) generalized indecision, (e) multiplicity of interests, and (f) humanitarian orientation.

Although many researchers have attempted to determine the difference between undecided and decided students, most have found little that is significant (Gordon, 1981). However, Gordon (1985) presents the following as notable characteristics of the undecided student:

1. Undecided students constitute a large proportion of students on every college campus.
2. Undecided students are a representative sample of the entering freshman class. They have multiple interests and the ability to succeed, just as decided students do.
3. Undecided students are often anxious about their major and career decisions, however, their anxiety is not debilitating. Students who suffer from severe anxiety are usually anxious about many more areas of their lives than their major or career choice.
4. Most undecided students know that they need to seek more information about majors and careers and are very willing to seek that information in order to make their decisions.
5. Many students need guidance in decision-making and skills identification. Motivation has been cited as a differentiating factor between undecided and decided students. Chase and Keene (1981) looked at the relationship between major declaration and academic motivation, as defined by grade point average and number of

accumulated credit hours, and found that students who declare a major early not only get higher cumulative grade point averages, but also complete more units of coursework. This led them to postulate that non-declared students (a) do not exercise maximum academic effort; (b) are not as motivated as declared students; (c) lack a clear purpose; and (d) do not participate in college life as much as declared students. Many college students change majors frequently, delay or avoid choosing a major, or "stop out" for one or more semesters. Titley, Titley, and Wolff (1976) suggest that these behaviors may be indicators of a lack of academic or vocational motivation or a sense of purpose.

Foote (1980) reported similarly that students who had determined their majors had higher high-school class ranks, ACT/SAT scores, cumulative college GPA's and number of completed hours of coursework than undetermined students. Furthermore, significantly more determined students stayed in school to graduation than undetermined students. Interestingly, more female students were determined than undetermined, and there were no significant differences between ethnic groups with respect to being determined or undetermined.

In a study designed to establish the extent to which uncertainty or tentativeness about an initial major choice is characteristic of college freshmen, Titley and Titley (1980) reported that freshmen who select a major, but feel uncertain about it are (a) more likely to change majors, and (b) more likely to be on a voluntary or involuntary attrition list. Of the 72% of an incoming freshman class

who had chosen a major, only 26% were quite certain or absolutely certain about the majors they had chosen. Only 72% of those who were quite certain or absolutely certain (which represented only 20% of the entire class) kept their major to graduation. The remaining 28% either changed their major, cancelled registration, transferred or withdrew from school. Foote (1980) determined that only 13% of Arts and Sciences majors who started college with a major still had that major at the end of two years.

In addition to the student who enters college without a major, Gordon (1985) describes two other types of undecided students: major changers, those students who enter college with a major, but who change at least once for a variety of reasons; and "the new undecided," students who are forced to change their major of choice because they do not meet grade or course requirements. Up to 75% of decided students will change their major at least once before they graduate (Foote, 1980; Titley, Titley, and Wolff, 1976).

Gordon (1985) cites three basic reasons for indecision: lack of personal, academic and career information; lack of developmental skills, such as decision-making skills; personal and social problems, such as values-goals conflicts, interest-abilities conflicts, interest-energy conflicts or conflicts with people that they admire or want to please.

Gordon (1982) documents changes in undecided students over the past fifty years. Of particular interest in this study are changes she recorded at Ohio State University from 1974 to 1980.

In 1974, 69% of entering freshmen reported that their reason for being in college was "to prepare for an occupation," whereas 19% stated that they wanted to "become educated." In 1980, these percentages were 83% and 12% respectively. The reason "to find myself" decreased from 4% in 1974 to 1% in 1980; and "because my parents expect it" and "for social reasons" declined from 3% to 1% over the six-year period. Another interesting comparison in this study was that the percentage of students at each level of decidedness (completely decided, tentatively decided, somewhat undecided and completely undecided) did not change over the six years.

Much of the research on the undecided student studies career or vocational indecision for the purpose of designing strategies for helping undecided students become decided. Goodson (1981) designed a career development instrument to aid students in both major and career indecision. He felt that there are two specific types of career development, educational and occupational, and that each should be studied and handled separately. Furthermore, he showed that declared majors need the same career assistance as undecided students. Specifically, both decided and undecided need more data about available opportunities, coaching in decision-making skills, and more information about goals, values and interests.

Jones and Chenery (1980) designed the Vocational Decision Scale around the three questions they felt all counselors should ask when working with vocationally undecided students: How decided are you about your choice of an occupation or career? How comfortable

are you with where you are in the process of making this choice? For what reasons are you decided or undecided. A factor analysis of the reasons dimension described three factors: that undecided students evidence self-uncertainty; that they are not as motivated as decided students to seek information about vocations, a factor identified as "career-work salience"; and that they are in a transitional phase in their own identity development because they were either uninformed about their choices or they were in conflict with significant persons over their choices.

One reason that undecided students may not have chosen a career is that work is not a significant part of their life. However, it may be argued that vocationally undecided students are very motivated to decide on a career, but they are afraid to commit to a specific career until they have assessed themselves and their alternatives. Greenhaus and Simon (1977, p.104) define career salience as "the relative importance of work and a career in one's total life." They found that vocationally undecided have low career salience and place less importance on intrinsic work values than those who are committed to an occupation.

Four factors were enumerated by Osipow, Carney, and Barak (1976) from A Scale of Vocational Indecision, now known as the Career Decision Scale (Osipow et al., 1976) as important in vocational decision-making: (a) lack of structure and confidence in approaching a career decision-making task; (b) the presence or perception of some barrier to decision making; (c) difficulty in deciding among alternatives; (d) a personal conflict in making a decision.

Diagnostic assessment of a student's developmental level is essential. Hanson (1982a) has pointed out that investigators know little about how, when or why students develop. Hanson insists that assessment of student development is critical: students must be developmentally evaluated (Hanson, 1982a; Kitchener, 1982; Winston, Miller, and Prince, 1979); their level of indecision (Ashby, Wall, and Osipow, 1966; Fuqua and Hartman, 1983; Goodstein, 1965; Hartman and Fuqua, 1983) and reasons for indecision (Gordon, 1984; Hartman and Fuqua, 1982; Holland and Holland, 1977; Jones and Chenery, 1980) determined; and their interests (Hanson, 1982a; Krone and Hanson, 1982) and decision-making ability (Harren, 1979) evaluated.

Gordon (1984) suggests that knowledge of students' developmental stages can be used to clarify distinctions between undecided, decided and tentatively decided students. She emphasizes that each student is unique with regard to maturational development, cognitive and social skills, personality characteristics and needs, and requires an individualized approach to advising.

Gordon (1981, p. 438) addresses vocational indecision not as a state of being, but as a dynamic process: "Undecided students are in many stages of vocational development. Counselors and teachers can provide the structure and support needed to challenge students to move into the next level of vocational maturity." She stresses that their strengths need to be examined, and that they need to set goals, design plans of action and continually evaluate their progress toward their goals. In taking a developmental approach to advising

undecided students, Gordon emphasizes the importance of recognizing that since students must accomplish certain specific psychosocial and cognitive tasks, the content, sequence and timing of special programs to assist them is essential (Gordon, 1984).

Gary Hanson (1982b) remarks in the conclusion to his book, Measuring Student Development, that a connection is almost never made between developmental advising programs and student growth. He stresses that we need to measure two major domains if we are to understand how students develop throughout their college career: (a) the social-cognitive developmental process, and (b) student developmental tasks.

Knefelkamp and Slepitz (1980) have designed a cognitive-developmental model of career development based on William Perry's (1970) scheme of cognitive development. The model is based on the idea that a series of qualitative changes make up a developmental sequence in which a student moves from a simplistic categorical view to a more complex pluralistic view of career, career planning and decision making.

In order to insure a comprehensive understanding of undecidedness, programs specializing in the undecided student should assess the following:

1. reasons for indecision (Gordon, 1984; Hartman and Fuqua, 1982; Holland and Holland, 1977; Jones and Chenery, 1980).
2. career decision skills (Appel, Haak, and Witzke, 1970; Ware, 1980; Ware and Pogge, 1980).

3. degree of indecision (Ashby, Wall, and Osipow, 1966; Fuqua and Hartman, 1983; Goodstein, 1965; Hartman and Fuqua, 1983).

4. stage of vocational decision making (Crites, 1981; Harren, 1966; Tiedeman and O'Hara, 1963).

The following three assessment instruments, when used together, will meet the requirements listed above. Jones' (1988) Career Decision Profile is a recent revision of Jones and Chenery's (1980) Vocational Decision Scale. It assesses decidedness, the student's comfort with his level of decidedness, and five reasons for being undecided: Self-Clarity, which reflects a lack of a clear sense of one's interests, skills and abilities; Occupational-Educational Information, which indicates a need to gather information about careers and their requisite education; Matching Self With a Career, a subscale which suggests that subjects have difficulty relating information about themselves to what they know about particular careers; Choice-Work Salience, the degree to which an individual is motivated to relate his interests or abilities to an occupational field; and Decisiveness, which measures general indecisiveness. Osipow, Carney, and Barak's (1976) Career Decision Scale (Osipow et al., 1976; Osipow, 1987) reliably measures and identifies antecedents to educational-vocational indecision and distinguishes the career-decided from career-undecided.

The Student Development Task and Lifestyle Inventory (Winston and Miller, 1987) is a recent revision of the Student Development Task Inventory-2 (Winston, Miller, and Prince, 1979). It can be used rather effectively in measuring student developmental tasks (Mines,

(1982). It measures three of Chickering's (1969) seven developmental vectors: developing autonomy, developing mature interpersonal relationships and developing purpose.

CHAPTER 2

METHOD

Subjects

The population sample of 1,393 new students to The University of Arizona consisted of incoming students attending eight summer orientation sessions and the New Start and Summer Bridge Programs at The University of Arizona in June and July, 1988. The New Start and Summer Bridge Programs are special retention programs for minority students and for recipients of financial aid. Participants take courses at the university during the summer sessions prior to the first semester of their freshman year. The New Start and Summer Bridge students who were undecided in their major choice attended an orientation session set up especially for them. New Start and Summer Bridge participants who had decided on a major attended the sixth freshman orientation session.

Data were collected from all students attending each orientation session. Due to the voluntary nature of the information gathering, the limited time available, and the pressure to expedite registration for fall classes, only 697 assessment packets were usable. Visual inspection of the uncompleted protocols did not indicate that those subjects excluded from the study were different in any particular way from those that were included. However, a bias of some sort could have occurred within the sample of those students not completing their

packet of questionnaires. A post hoc analysis of variance was conducted to test for significant differences in high school grade point average, gender, ethnicity and level of decidedness between those subjects who completed the test packets and those who did not complete them.

Ages of subjects ranged from 17 to 24 years of age, with a mean age of 17.5 years. Of the participants who handed in usable data, 16 (2.3%) were transfer students. The remainder were first-time freshmen. There were 429 (61.5%) female subjects and 267 (38.3%) male subjects; there was no record of gender for one subject. Subjects identified themselves with the following ethnic designations: 44 (6.3%) Hispanic, 9 (1.3%) Black, 7 (1.0%) Native American, 22 (3.2%) Asian, 601 (86.2%) White, and 14 (2.0%) Unclassified. This sample is representative of the ethnic proportions of the university population as a whole (Godwin, 1988) (see Table 1 for comparison).

Table 1. Percentage Summary of New Minority Student Enrollment at The University of Arizona, Fall 1988*

	N	%
Caucasian and Others	6,229	84.5
Hispanic	671	9.1
Asian	210	2.9
Black	135	1.8
Native American	128	1.7

*From Godwin, 1988

Assessment Instruments

Subjects were given two assessment packets. Packet One contained an Initial Questionnaire, the Career Decision Scale (CDS) (Osipow et al., 1976), the Career Decision Profile (CDP) (Jones, 1988), a Student Questionnaire, and a green ten-choice answer sheet. Packet Two consisted of the 140-question Student Development Task and Lifestyle Inventory (SDTLI) (Winston, Miller, and Prince, 1979).

Assessment instruments are described below. Following a description of each is a review of reliability and validity data collected by the authors of each instrument. Reliability measures are expressed as Cronbach's (1951) coefficient alpha, an estimate of the correlation between two random samples of items taken from the same instrument. This is based on the assumption that each item with a given instrument measures the same concept.

Initial (Box) Questionnaire

The Initial Questionnaire contained questions of three sorts as described below (see Appendix A for further detail).

1. A grouping question (Titley and Titley, 1980) which was used to divide subjects into three experimental groups, (a) Undecided, (b) Tentatively Decided, and (c) Decided. Grouping was based on the response given to the question, "Which of the following statements comes closest to the degree of certainty you feel about your major selection?" Subjects selected one of the following answers.

- 1) I'm really totally decided.
- 2) I am not certain; I'm somewhat undecided.

- 3) I think this is what I want, but I might change.
- 4) Quite certain; doubt if I'll change.
- 5) Absolutely certain I'll graduate in this major.

Subjects who gave the "1" or "2" response were placed in the Undecided group (U); those who responded with "3" were placed in the Tentatively Decided group (T); and those responding with either "4" or "5" were placed in the Decided group (D).

2. Questions about their degree of certainty in their career choice and their reason for attending the university.

3. Questions about their perceptions of the likelihood that they will complete college successfully and find employment after college.

Career Decision Scale

The Career Decision Scale (Osipow et al., 1976) is an assessment instrument that assesses levels of career indecision. The scale presents 18 statements that people commonly make about their educational and occupational plans. Subjects were asked to indicate how closely each item described their thinking about their career choice (see Appendix B for further detail).

The Career Decision Scale yields two scale scores: The Certainty Scale and the Indecision Scale. High scores on the Certainty Scale indicate certainty of choice of career and academic major. High scores on the Indecision Scale indicate career indecision.

Two studies support the reliability of the Career Decision Scale by reporting test-retest correlations of individual items with

Indecision Scale scores. Osipow, Carney, and Barak (1976) reported .90 and .82 retest correlations on the Indecision Scale for two separate samples of college students ($n = 50$, $n = 59$, respectively). Slaney, Palko-Nonemaker, and Alexander (1981) reported item correlations from 0.19 to 0.70 on the Certainty and Indecision Scale items over a period of six weeks, with the total Career Decision Scale scores having a 0.70 correlation. These reliability coefficients bring into question the earlier reliability found by Osipow, Carney, and Barak (1976).

To substantiate the reliability of the Career Decision Scale, this investigator obtained alpha coefficients of the total instrument and of each scale. Alpha coefficients were as follows: Total ($\alpha = 0.78$); Certainty ($\alpha = 0.88$); Indecision ($\alpha = 0.85$).

Studies reporting the validity of the Career Decision Scale are numerous. Osipow (1987) reports the following validation support. (Each reference is a secondary source cited in Osipow, 1987.) Limburg (1980) found that the Career Decision Scale differentiated decided and undecided students. Older students have been reported to show greater decidedness on the Career Decision Scale in two studies (Niece and Bradley, 1979; Osipow, 1978). However, other studies failed to show age differences (Hartman, 1980; Limburg, 1980). Some studies have shown significant gender differences: males were less undecided (Gordon and Osipow, 1976a; Westbrook, Cutts, Madison, and Arcia, 1980); or females were less undecided (Taylor, 1979a). Other studies found no gender difference (Cellini, 1978; Limburg, 1980; Niece and Bradley, 1979; Osipow, Carney, and Barak, 1976; Sutura, 1977). One study found significant ethnic differences,

with blacks evidencing greater indecision than whites (Westbrook et al., 1980). Normative data for college students in terms of age, grade or gender differences in career decision are inconclusive (Osipow, 1987). A relationship between career decision and academic achievement in first-term freshmen was found for women and the total sample, but not males (Osipow and Waddell, 1980). No relationship has been found between achievement types and career decision scores (Osipow and Waddell, 1980), nor between indecision and aptitude (Rogers, 1980). However, a negative relationship was found in college students between level of indecision and high academic achievement (Ashby et al., 1966; Taylor, 1979b).

Career Decision Profile

The Career Decision Profile (Jones, 1988) is a revision of the Vocational Decision Scale (Jones, 1977) and includes changes designed to improve its ability to measure three dimensions of vocational decision (Jones and Chenery, 1980): level of undecidedness, subject's comfort level with undecidedness; and five dimensions of career decision needs: (a) matching self with a career, a dimension which suggests difficulty in relating characteristics about oneself to potential careers; (b) self-clarity, a dimension which indicates a need for clarification of interests, abilities, values and personality; (c) occupational-educational information, a dimension which indicates a need for information gathering in the areas of occupations and requisite education associated with certain occupations; (d) decisiveness, a scale on which high scores indicate a

person who is generally indecisive; and (e) choice-work salience, an indication of the relative unimportance of choosing and seeking information about an occupation at the time of assessment (see Appendix C for further detail). Jones (1988) provides the following reliability and validity data.

Decidedness Scale. The retest reliability for the Decidedness Scale (n = 111) was 0.66. The alpha coefficient (n = 221) was 0.85.

Concurrent validity is supported by a 0.77 correlation with the Vocational Decision Scale, which had previously correlated 0.61 with Harren's (1963, cited in Winston and Miller, 1987) Assessment of Career Decision Making; 0.44 with Holland, Gottfredson, and Natziger's (1975) identity scale; and, 0.45 with Greenhaus and Simon's (1977) Career Salience Questionnaire. Career Decision Profile was correlated -0.46 ($p < .0001$; n = 111) in the expected direction with Slaney's (1980) index of career indecision. In another test for validity, a statistically significant correlation (0.39; n = 111) was found between the Decidedness Scale and Greenhaus and Simon's (1977) Career Salience Questionnaire. In an effort to support the validity of the newly revised Career Decision Profile, concurrent validity estimates were taken on the CDP using the Career Decision Scale (Osipow, Carney, and Barak, 1976) as a criterion measure.

Comfort Dimension. Jones (1988) reported that the Comfort Scale was found to have a retest reliability of 0.76 (n = 111). The alpha coefficient for Comfort was 0.82 (n = 221). To verify

validity, the correlation between the Comfort Scale and the Vocational Decision Scale Comfort Scale was 0.80. The scale was correlated 0.65 with the Career Decision Profile in its entirety. It was also correlated 0.31 with Slaney's (1980) index of career indecision.

Reasons Dimension. Jones (1988) reports that five factors emerged from a factor analysis of items for the Reasons Dimension. Test-retest Pearson product-moment correlations and the alpha coefficients are given in parentheses, respectively: (a) Matching Self with a Career (0.71; $\alpha = .82$), (b) Self-Clarity (0.82; $\alpha = .75$), (c) Occupational-Educational Information (0.76; $\alpha = .74$), (d) Decisiveness (0.71; $\alpha = .79$), and (e) Choice-Work Salience (0.78; $\alpha = .73$). The sum of these items provides a Total Career Decision Profile score (0.86; $\alpha = .85$). The five reasons scales were relatively independent of each other, i.e., they had low intercorrelations. For the ten intercorrelations, six were 0.22 or less and two were 0.30.

Validation tests are as follows:

1. There are statistically significant correlations between trait anxiety (Spielberger et al., cited in Jones, 1988) and the Decidedness Scale (-0.24), Comfort (-0.53), Matching Self with Career (0.26), Self-Clarity (0.48), Occupational-Educational Information (0.22), Decisiveness (0.35), and the Total scale (0.37).

2. There are statistically significant correlations between Career Salience (Greenhaus and Simon, 1977) and Decidedness (0.39), Comfort (0.22), Occupational-Educational Information (-0.33), Choice-Work Salience (-0.45) and the Total scale (-0.32).

3. There are statistically significant correlations between Identity Achievement Status (Simmons, 1973, cited in Jones, 1988) and Decidedness (0.24), Comfort (0.29), Matching Self with Career (-0.25), Self-Clarity (-0.39), and the Total scale (-0.26).

Student Questionnaire

The Student Questionnaire examines the following information about a college student:

- Student's educational plans
- Student's ranking of The University of Arizona as their school of choice
- Parent's income
- Highest level of mother's education
- Highest level of father's education
- Student's academic goals
- Student's vocational goals
- Student's personal goals

(See Appendix D for further detail.)

Student Development Task and Lifestyle Inventory

The SDTLI assesses three of Chickering's (1969) seven developmental vectors: developing autonomy, developing mature interpersonal relationships, and developing purpose. Three basic developmental tasks and three scales are assessed by the SDTLI: Establishing and Clarifying Purpose Task (PUR), Developing Mature Interpersonal Relationships Task (MIR), Developing Academic Autonomy Task (AA), Salubrious Lifestyle Scale (SL), Intimacy Scale (INT), and Response Bias Scale (RB). Two developmental tasks are further subdivided into subtasks. PUR is the sum of the Educational Involvement (EI), Career Planning (CP), Lifestyle Planning (LP), Life Management (LM) and

Cultural Participation (CUP) Subtasks. MIR is the sum of Tolerance (TOL), Peer Relationships (PR) and Emotional Autonomy (EA) Subtasks. (See Appendix E for further detail; Appendix F gives the breakdown of questions by SDTLI scale and subscale.)

Test-retest reliability measures indicate (Winston and Miller, 1987) that product-moment correlations for all SDTLI scales and subscales ($n = 27$) ranged between 0.70 and 0.88 over a four-week period (all significant at the $p < .01$ level).

Internal consistency measurement yielded (Winston and Miller, 1987) alpha coefficients for a large group of students ($n = 1200$): 0.90 on the Purpose scale, 0.75 on the Educational Involvement subscale, 0.80 on the Career Planning subscale, 0.62 on the Lifestyle Planning subscale, 0.69 on the Life Management subscale, a low 0.45 on the Cultural Participation subscale, 0.76 on the Developing Mature Interpersonal Relationships scale, 0.75 on the Peer Relationships subscale, a low 0.55 on both the Tolerance and Emotional Autonomy subscales, 0.70 on both the Academic Autonomy and Intimacy scales, 0.71 on the Salubrious Lifestyle scale and a low 0.50 on the Response Bias scale. The alpha coefficient ($n = 954$) for the entire inventory was 0.93. The three subscales that yielded relatively low coefficients, Cultural Participation, Tolerance and Emotional Autonomy, suggest heterogeneous internal structures that render them inappropriate for research studies.

Winston and Miller (1987) report validation work on the various SDTLI scales and subscales. For the purposes of this study, the following correlations are appropriate.

Establishing and Clarifying Purpose Task and Its Subtasks. The Purpose scale correlated with two scales of the Super et al. (1981) Career Development Inventory: Career Planning Scale (0.70) and Career Exploration Scale (0.49). When compared to the Omnibus Personality Inventory (Heist and Yonge, 1968), Purpose moderately correlated with Social Extroversion (0.37), Thinking Introversion (0.34) and Anxiety Level (0.32). A relatively low, though statistically significant, correlation was found between Purpose and Theoretical Orientation (0.26), Personal Integration (0.29) and Autonomy (-0.23). Purpose is also moderately correlated (0.47) with Erwin's (1978-1979, cited in Winston and Miller, 1987) Confidence Scale.

High scores on the Purpose Scale seek in-depth educational experiences and practical experience related to potential future careers. They describe themselves as purposeful, goal-oriented, prudent risk takers, and good managers of their time and money. They carefully analyze their educational, career, and personal goals and have made at least tentative plans for realizing the kinds of futures they desire. They voluntarily participate in cultural activities and show an interest in supporting the academic community in which they live (Winston and Miller, 1987, pp. 27-28).

Establishing Validity Estimates for Mature Interpersonal Relationships Scale and Its Subtasks. The Mines-Jenson Interpersonal Relationships Inventory (Hood and Mines, 1986) is based on Chickering's (1969) developmental vectors and was designed to measure the same tasks as the Mature Interpersonal Relationships Scale of the SDTLI. Although MIR correlated 0.37 with Mines-Jenson, Winston and Miller (1987) suggest that they do not measure the same constructs. They do not, however, elaborate on this suggestion. Five individual

items were significantly correlated with MIR: (a) seek friends who are quite different from me (0.48), (b) accepting of differences in other people (0.39), (c) avoid associating with people from different races and/or cultures when I can (-0.33), (d) often depend on parent(s) to tell me what to do (-0.33), and (e) attending college only to get a diploma (-0.29).

MIR was correlated with Erwin's (1978-1979, cited in Winston and Miller, 1987) Confidence Scale (0.51) and with Peterson's (1968) Family Independence Scale (0.44). MIR was significantly correlated with nine scales from the Omnibus Personality Inventory (Heist and Yonge, 1986): (a) Practical Outlook (-0.47), (b) Autonomy (0.43), (c) Anxiety Level (0.43), (d) Personal Integration (0.42), (e) Social Extroversion (0.37), (f) Altruism (0.36), (g) Thinking Introversion (0.29), (h) Complexity (0.29), and (i) Theoretical Orientation (0.27).

High scorers on Developing Mature Interpersonal Relationships Scale describe themselves "as being emotionally independent of peers and parents, as being autonomous individuals who feel self-assured in their ability to manage their lives, as having low levels of anxiety, as accepting of cultural differences in others, and as being self-confident individuals" (Winston and Miller, 1987, p. 30).

Establishing Validity Estimates for Academic Autonomy. The Academic Autonomy Scale correlated with Erwin's (1978-1979, cited in Winston and Miller, 1987) Confidence Scale (0.49), Peterson's (1968) Study Habits Scale (0.49), and Jackson and Hood's (1986) Management of Time Scale (0.50). Three scales from the Omnibus Personality

Inventory were positively correlated with the Academic Autonomy Scale: Anxiety Level (0.52), Personal Integration (0.48), and Altruism (0.36). Of eight individual items correlated with Academic Autonomy, the following were positively correlated: (a) educationally motivated (0.43), (b) manage my time satisfactorily (0.43), (c) intellectually stimulated by college (0.34), (d) thoughtful, careful decision-makers (0.33), (e) committed to accomplishing goals (0.32), (f) seek in-depth educational experiences (0.32), (g) self-motivated (0.32), (h) in control of important areas of my life (0.30), and (i) assertive (0.28). Negatively correlated items included: (a) frequently tired (-0.53), (b) attending college only to get a diploma (-0.40), and (c) dislike attending college (-0.35).

High scorers on the Academic Autonomy Scale describe themselves "as being educationally motivated, thoughtful decision-makers, intellectually stimulated by college, committed to accomplishing goals, self-motivated and assertive. They also report having confidence in themselves and having good time-management skills and study habits" (Winston and Miller, 1987, p. 32).

Establishing Validity Estimates for the Salubrious Lifestyle Scale. Correlations were found between the Salubrious Lifestyle Scale and the following scales from the Omnibus Personality Inventory (Heist and Yonge, 1968): Social Extroversion (0.30), Personal Integration (0.37), and Anxiety Level (0.38). Erwin's (1978-1979, cited in Winston and Miller, 1987) Confidence Scale (0.38), Peterson's (1968) Study Habits Scale (0.33), and Jackson and Hood's (1986) Emotional

Independence-Parents Scale (0.34) were correlated with the Salubrious Lifestyle Scale.

On independent items given, the Salubrious Lifestyle Scale significantly correlated with the following items (a) physically fit (0.77), (b) pleased with the extent of past accomplishments (0.42), (c) am frequently tired (-0.42), (d) self-confident (0.41), (e) manage my time satisfactorily (0.40), (f) in control of important areas of my life (0.34), (g) like myself as a whole (0.34), (h) concerned about maintaining good health (0.29), and (i) assertive (0.29).

High scorers on the Salubrious Lifestyle Scale describe themselves as being "physically fit, self-confident, assertive, good managers of their time, self-responsible, in control of their lives, and as being satisfied with both their past accomplishments and current life as a whole" (Winston and Miller, 1987, p. 32).

Establishing Validity Estimates for the Intimacy Scale.

Limited data on the validity of the Intimacy Scale are available at this point. It must be considered an experimental scale at present (Winston and Miller, 1987); therefore, it has not been used in this study.

Establishing Validity Estimates for the Response Bias Scale.

The purpose of the Response Bias Scale is to identify subjects who try to "fake good" on the entire inventory. According to Winston and Miller (1987) approximately 3-5% of the students mark one to two response bias items. One percent marked three or more items in the

biased direction. In general, there is not a statistically significant difference between any SDTLI scale or subscale scores of persons who had a Response Bias raw score of 0 or 1. There were, however, statistically significant differences between groups who had scored 0 or 1, and groups who had scored between 2 and 5 on the Response Bias Scale. There were no statistically significant differences between groups who had scored 3, 4, or 5. In all cases subjects with a score of 2 or higher had higher T-scores on all SDTLI measures than did groups scoring 0 or 1. Winston and Miller (1987), therefore, suggest that researchers discard all inventories that have a Response Bias Scale of 3 or greater.

One source of bias, social desirability response set, was investigated using the Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe, 1960). Statistically significant correlations were found with the following SDTLI Scales: Developing Mature Interpersonal Relationships (-0.32), Academic Autonomy (-0.29), and Salubrious Lifestyle (-0.34). Of the SDTLI Subscales, Peer Relationships (-0.46) was the most affected by the social desirability response set. Correlations on all SDTLI scales and subscales are negative. Students who try to give what they perceive to be socially acceptable answers score lower on the SDTLI.

To address the issue of response bias in the present study, frequencies of response bias scores were gathered. A one-way analysis of variance was applied to all dependent measures to test for differences between those who evidenced response bias (those scoring 3, and

those scoring 4 or 5 according to Winston and Miller (1987) and those who did not, scoring 0, 1, or 2). Student-Newman-Keuls procedures were applied to variable means to determine which Response Bias levels were significantly different from each other.

It is important to note that validity coefficients, although statistically significant, were low for several validity estimates that Winston and Miller (1987) made on the SDTLI. When validation support for assessment instruments is low (e.g., less than 0.40) the ability of that scale or subscale to define a particular construct is poor. Validity coefficients reflect the degree to which a given scale or subscale is likely to be in error (Borg, 1987, cited in Winston and Miller, 1987). The square of a coefficient defines the proportion of the variable associated with the factor in question. For instance, a 0.39 validity coefficient between a test scale and a criterion measure means that only 15% of the time will the test scale be measuring the same construct as the criterion measure. Caution must be used in coming to definitive conclusions when using instruments of questionable validity.

Demographic and High School Information

The following demographic information was collected from The University of Arizona Student Information System on all subjects:

- Gender
- Ethnicity
- Age
- High school grade point average
- High school percentile

Procedures

Approximately 150 students attended each one-hour orientation session. They sat in theater seats with lap boards in a large auditorium. Packet One was handed out by student helpers. Appendix G gives the entire set of instructions. Briefly, students were told the purpose of the assessment and given instructions in filling out the Packet One (green) answer sheets. An overhead projector was used to demonstrate correct marking of the green answer sheet. Approximately one-half hour into the assessment period, student helpers handed out Packet Two and its blue answer sheet. Students were instructed to read the instructions on the instrument and to complete the entire questionnaire. Upon completion, students handed in both questionnaires and answer sheets. Student helpers checked each to make sure that subjects had written their Student Identification Numbers on test booklets and both answer sheets.

Since the assessment instruments were administered during summer orientation, students were anxious to complete the assessment and register for classes. However, many did not complete the SDTLI. Assessment packets were visually examined for completion of each section and for obviously repeated answers. Some individual packets were discarded for the following reasons:

- Failure to complete SDTLI
- Failure to complete the Student Questionnaire
- One too many answers, one too few answers or a skipped answer, suggesting out-of-sequence marking
- Combinations of the above
- Obvious repetitions in true or false answers on the SDTLI

Obvious patterns on answer sheets
Failure to supply parent's income or level of education
Failure to give a correct Student Identification Number
Subject demographic information not available

To assess whether there were significant differences between those students who finished the assessment and those whose packets were discarded, analysis of variance procedures were used on the following variables: gender, age, ethnicity, high school grade point average and percentile.

Data Analysis

Hypothesis testing. Discriminant function analysis procedures were used to determine the following:

1. if high school and demographic variables would identify level of decidedness;
2. if SDTLI scales or subscales could be used to identify a subject's level of decidedness;
3. which variables from the demographic, CDS, CDP, SDTLI and questionnaire variables would most accurately identify a subject's level of decidedness;
4. if combination of variables would identify gender.

Discriminant analysis is the statistical method of choice because it is designed specifically for identifying relationships between categorical grouping variables and continuous predictor variables. This study seeks to identify those variables which contribute most significantly to the prediction of membership in one of three levels of decidedness: undecided, tentatively decided, and decided.

Discriminant analysis will derive a discriminant function, i.e., a weighted combination of predictor variables, that will maximize the differences between the three criterion groups. In other words, the discriminant function will allow the prediction of group membership with the smallest number of classification errors.

CHAPTER 3

RESULTS

To establish the categories for the discriminant function analyses, subjects were asked to choose which designation best suited them. Their choices were

- 1) I'm really totally undecided.
- 2) I am not certain; I'm somewhat decided.
- 3) I think this is what I want, but I might change.
- 4) Quite certain; doubt if I'll change.
- 5) Absolutely certain I'll graduate in this major.

Students in the Undecided (U) group were those responding to choices "1" and "2" above. Subjects answering "1" comprised 17.5% (n = 122) of the sample. Subjects answering "2" comprised 25.4% (n = 177) of the sample. Those giving response "3" were placed in the Tentatively Decided (T) group (n = 215, 30.8%). Of those placed in the Decided (D) group (n = 182, 26.1%), 154 (22.0%) marked "4" and 28 (4.0%) responded "5." In other words, 42.9% of the sample are undecided, 30.8% are tentatively decided, and 26.1% of the sample are decided. The U, T, and D group designations were used as the discriminant variables in discriminant function analyses.

Hypothesis Testing

Hypothesis 1--It was hypothesized that the levels of decidedness cannot be differentiated from each other by demographics and

high school academic information alone. A discriminant function analysis was applied to level of decidedness using gender, ethnicity, high school grade point average and class rank. No significant discriminant function was found among these four factors that would classify students into undecided, tentatively decided and decided groups.

Hypothesis 2--It was hypothesized that the tentatively decided subjects would have lower high school grade point averages and class ranks than either those who were undecided or decided. Analysis of variance procedures were applied to the high school grade point average and class ranks of group members. No significant differences were found.

Hypothesis 3--It was hypothesized that no difference would be found between decided and undecided students in terms of developmental scales in the Student Development Task and Lifestyle Inventory. Discriminant analysis was applied to the SDTLI scales to determine their predictive ability. One discriminant function was significant (Wilks' lambda = .7738; $p < .0001$) and accounted for 96.9% of the variance (Eigenvalue = .2806). Only two variables significantly contributed to this function's identification of levels of decidedness: Purpose ($p < .0001$) and Academic Autonomy ($p < .01$). This function would correctly classify subjects into levels of decidedness 52.8% of the time. Undecided subjects could be classified correctly 67.2% of the time; Tentatively decided, 31.6% of the time, and Decideds, 54.4% of the time (see Table 2).

Table 2. Percentage of Correct Classification of Decidedness Level by Student Development Task and Lifestyle Inventory Major Scales

Actual Group	Number of Cases	Predicted Group Membership		
		U	T	D
Undecided	299	201 67.2%	49 16.4%	49 16.4%
Tentatively decided	215	72 33.5%	68 31.6%	75 34.9%
Decided	182	40 22.0%	43 23.6%	99 54.4%
Ungrouped cases	1	1 100.0%	0 0.0%	0 0.0%
Percent of "grouped" cases correctly classified			52.87%	

Discriminant analysis was applied to SDTLI scales and subscales to see if ability to identify levels of decidedness could be improved by the use of subscales instead of entire scales. A significant discriminant function (Wilks' lambda (20.9) = .6847; $p < .0001$) was found that included significant contributions from Educational Involvement subscale ($p < .0000$), Career Planning subscale ($p < .0000$), Lifestyle Planning subscale ($p < .0000$), Life Management subscale ($p < .0001$), Emotional Autonomy subscale ($p < .0003$), and Academic Autonomy scale ($p < .0027$). Table 3 gives the standardized discriminant function coefficients for the significant function. The SDTLI discriminant function accounts for 97.5% of the variance (Eigenvalue = .4438). Table 4 gives the pooled within-groups correlations between

Table 3. Standardized Discriminant Function Coefficients
for SDTLI Scale and Subscales as Classifiers
of Decidedness Level

SDTLI Scale/Subscale	Coefficients
Educational Involvement	0.66772
Career Planning	0.51716
Life Planning	0.10316
Salubrious Lifestyle	-0.04925
Life Management	-0.26234
Cultural Participation	-0.14650
Tolerance	-0.03011
Peer Relationships	0.03898
Emotional Autonomy	0.24978
Academic Autonomy	0.07068

Table 4. Pooled Within-groups Correlations between SDTLI
Scale and Subscale Variables and Function
Classifying Level of Decidedness

SDTLI Scale/Subscale	Pooled Within-groups Correlation
Educational Involvement	0.84232
Career Planning	0.77177
Life Planning	0.46284
Life Management	0.24390
Peer Relationships	0.12790
Tolerance	-0.04343
Academic Autonomy	0.17968
Emotional Autonomy	0.22635
Salubrious Lifestyle	0.06088
Cultural Participation	0.12186

discriminating variables and the discriminant function. The function allows correct classification 57.2% of the time. Undecided students may be correctly classified 71.9% of the time; tentatively decided, 34.4% of the time; and decided, 59.9% of the time (see Table 5 for further detail).

Table 5. Percentage of Correct Classification of Decidedness Level by SDTLI Scales and Subscales

Actual Group	Number of Cases	Predicted Group Membership		
		U	T	D
Undecided	299	215 71.9%	54 18.1%	30 10.0%
Tentatively Decided	215	59 27.4%	74 34.4%	82 38.1%
Decided	182	32 17.6%	41 22.5%	109 59.9%
Ungrouped cases	1	1 100.0%	0 0.0%	0 0.0%
Percent of "grouped cases correctly classified			57.18%	

A post hoc Scheffe test was applied to the Purpose and Academic Autonomy scales, and the Educational Involvement, Career Planning, Life Planning, Lifestyle Management, and Emotional Autonomy subscales to determine which group means for level of decidedness were significantly different. All three group means were found to be significantly different on the Purpose scale ($p < .01$). On the Educational

Involvement and Career Planning subscales, group means of all three groups were significantly different ($p < .01$). On the Academic Autonomy subscale, the decided group was significantly different than the undecided and tentatively decided groups at the .05 level; it was significantly differently from only the undecided at the .01 level. On the Life Planning subscale, at the .05 level, all three groups were significantly different; at the .01 level undecided students were significantly different from tentatively decided and decided. On the Life Management and Emotional Autonomy subscales, undecided students were significantly different from both tentatively decided and decided ($p < .01$).

Hypothesis 4--It was hypothesized that no significant difference would be found between male and female subjects on any areas assessed. Significant differences were found between males and female students on 39 of the 79 variables. No Career Decision Scale scales had gender differences; two Career Decision Profile subscales and ten SDTLI scales and subscales had gender differences. See Table 6 for significance levels and means for the significant variables.

Using discriminant analysis on all variables a significant discriminant function was calculated (Wilks' lambda = .6799; $p < .0001$). Table 7 lists the standardized discriminant function coefficients for the function. This function allows correct identification of gender 76.0% of the time; of female gender 74.9% of the time; and of male gender 77.7% of the time (see Table 8 for further detail).

Table 6. Significant Variables from One-Way Analysis of Variance on Gender Using All Variables

Variable	Female Mean	Male Mean	F Ratio	Significance Level	Degrees of Freedom	Standard Error Female	Standard Error Male
Rank	78.95	72.16	13.98	.0002	1 and 550	.97	1.69
High School GPA	3.30	3.24	15.31	.0001	1 and 693	.02	.03
Lasting Friendships*	2.71	2.58	7.48	.0064	1 and 675	.03	.04
Developing Social Skills*	2.29	2.13	6.84	.0091	1 and 694	.04	.05
Participating in Intramural Sports	1.36	1.79	30.22	.0000	1 and 694	.05	.06
Participating in Student Activities*	2.25	1.93	25.48	.0000	1 and 694	.04	.05
Participating in Intercollegiate Sports*	.96	1.15	6.21	.0130	1 and 694	.05	.06
Being Acquainted with Many*	2.53	2.29	19.28	.0000	1 and 694	.03	.05
Becoming a Leader*	2.23	2.17	5.52	.0191	1 and 694	.04	.05
Being Involved at College*	2.36	2.07	20.64	.0000	1 and 694	.04	.05
Getting Along with Others*	2.26	2.01	12.80	.0004	1 and 693	.04	.06
Improving Self-Confidence*	2.32	2.09	11.38	.0008	1 and 694	.04	.06
Exploring a Major*	2.32	2.12	8.80	.0031	1 and 695	.04	.06
First Job in Major Field*	2.28	2.06	11.05	.0009	1 and 694	.04	.05
Vocational Interests*	2.27	2.00	17.91	.0000	1 and 695	.04	.05
Cultural Activities*	2.01	1.57	42.22	.0000	1 and 694	.04	.06
Improving Communication*	2.69	2.47	18.67	.0000	1 and 695	.03	.04
Self-Directed Learning*	2.36	2.23	4.42	.0358	1 and 695	.04	.05
Importance of Studying Social Sciences*	2.28	2.03	15.62	.0001	1 and 694	.04	.05
Importance of Studying Humanities*	2.07	1.86	10.23	.0014	1 and 695	.04	.05
Importance of Studying Sciences*	1.28	1.70	24.32	.0000	1 and 695	.05	.07
Level of Degree Planned**	1.43	1.63	6.24	.0127	1 and 694	.05	.07
Importance of Being Satisfied with School***	.29	.47	16.20	.0001	1 and 693	.03	.03
Likelihood of Getting a Bachelor's Degree***	.16	.24	4.91	.0270	1 and 694	.02	.03
Likelihood of Graduating with Honors***	1.25	1.09	7.60	.0060	1 and 695	.04	.04
Likelihood of Changing Careers	1.08	1.23	4.21	.0405	1 and 695	.05	.06
Decidedness about Career#	1.65	1.86	4.45	.0353	1 and 694	.06	.08
Response Bias	.54	.89	22.38	.0000	1 and 695	.04	.06

Table 6, continued.

Variable	Female Mean	Male Mean	F Ratio	Significance Level	Degrees of Freedom	Standard Error Female	Standard Error ,a;e
Mature Relationships+	18.75	17.35	14.01	.0002	1 and 695	.23.	.30
Academic Autonomy+	5.43	5.02	4.91	.0270	1 and 695	.12	.14
Peer Relationships+	7.89	7.30	9.13	.0026	1 and 695	.12	.15
Tolerance+	6.38	5.53	34.32	.0000	1 and 695	.09	.12
Intimacy+	9.24	7.71	11.80	.0006	1 and 695	.29	.32
Cultural Participation+	3.52	3.28	4.29	.0387	1 and 695	.07	.09
Life Management+	8.61	8.06	5.47	.0196	1 and 695	.14	.19
Salubrious Lifestyle+	4.84	5.27	7.31	.0070	1 and 695	.10	.12
Career Planning+	6.01	6.76	5.53	.0189	1 and 695	.19	.25
Decisiveness++	10.82	9.74	6.73	.0097	1 and 695	.27	.31
Occupational-Educational Information+++	15.86	14.82	6.74	.0096	1 and 695	.25	.31

*Note. Means of variables are based on the following scale:

0 = Very good chance; 1 = Some chance; 2 = Very little chance; 3 = No chance

**Note. Means of variables are based on the following scale:

0 = Bachelor's degree; 1 = Master's degree; 2 = Professional degree (law, medicine); 3 = Doctoral degree

***Note. Means of variables are based on the following scale:

0 = Not important; 1 = Moderately important; 2 = Important; 3 = Very important

+Note. Higher score = Greater number of developmental tasks completed

++Note. Higher score = More indecisiveness

+++Note. Higher score = Needs more information

#Note. Means of variables are based on the following scale:

0 = I'm really totally undecided; 1 = Not certain, I'm somewhat undecided; 2 = I think I know what I want, but I might change; 3 = Quite certain, doubt if I'll change; 4 = Absolutely certain I'll pursue my present choice of careers

Table 7. Standardized Discriminant Function Coefficients
for Variables Classifying Gender

Variable	Coefficients
Matching Self with Career	-0.01495
Occupational/Educational Information	-0.03089
Decisiveness	0.11616
Career Planning	-0.16757
Salubrious Lifestyle	-0.29435
Life Management	0.24073
Intimacy	0.27184
Tolerance	0.59155
Peer Relationships	0.33416
Academic Autonomy	0.16517
Mature Relationships	-0.57938
Likelihood of Honors	0.34951
Likelihood of Completing Degree	-0.03529
Likelihood of Stopping Out	0.19897
Likelihood of Satisfaction with College	-0.23106
Marrying in One Year	-0.05578
Importance of Science	-0.26709
Importance of Humanities	-0.07583
Importance of Social Sciences	0.14211
Self-directed Learning	0.00979
Improving Communication	0.03449
Cultural Interests	0.27253
Vocational Interests	0.07398
First Job in Major Field	0.13344
Self-confidence	0.10886
Getting Along with Others	0.04338
Being Involved at College	0.23756
Becoming a Leader	-0.10859
Being Acquainted with Many	0.07043
Participating in Intercollegiate Sports	0.15975
Student Activities	0.24012
Intramural Sports	-0.48640
Developing Social Skills	-0.07969
Developing Lasting Friendships	-0.14954
High School GPA	0.31793

Table 8. Percentage of Correct Classification of Gender from Significant Variables

Actual Group	Number of Cases	Predicted Group Membership	
		Female	Male
Female	414	310 74.9%	104 25.1%
Male	256	57 22.3%	199 77.7%
Ungrouped cases	1	1 100.0%	0 0.0%
Percent of "grouped" cases correctly classified		75.97%	

Using discriminant analysis on the factors that had the highest significance, a discriminant function was calculated that was significant (Wilks' lambda = .7791; $p < .0001$). Table 9 gives the standardized discriminant function coefficients for the significant function. This function allows correct identification of gender 70.6% of the time; of female gender 69.6% of the time; and of male gender 72.2% of the time (see Table 10 for further detail).

Additional Discriminant Analysis

All variables except the CDS Certainty scale and the CDP Decidedness scale were used in discriminant analysis to determine a discriminant function that would identify the level of decidedness. Two significant functions were calculated (Function 1: Wilks' lambda = .4388, $p < .0001$; Function 2: Wilks' lambda = .8527, $p < .0059$).

Function 1 accounts for 84.5% of the variance (Eigenvalue = .9432); Function 2 accounts for 15.5% of the variance (Eigenvalue = .1728). Significant factors in group classification are listed in Table 11. Using these two functions group membership may be correctly identified 68.4% of the time. Undecided students may be classified correctly 74.1% of the time; tentatively decided, 55.9% of the time; and decided, 73.5% of the time (see Table 12 for further detail).

Several discriminant analyses were applied to combinations of significant variables. Two discriminant functions using nine variables were able to approximate the percentages of correct classification by the entire set of variables. These functions were significant (Function 1: Wilks' lambda = .5508, $p < .0001$; Function 2: Wilks' lambda = .9575, $p < .0002$). The first function accounted for 94.3% of the variance (Eigenvalue = .7385); Function 2 accounted for 5.7% of the variance (Eigenvalue = .0444). Table 13 shows the list of significant variables used in both abbreviated discriminant functions. Table 14 lists standardized discriminant function coefficients. The abbreviated function was able to identify correctly the level of decidedness 63.5% of the time. Undecided students were correctly classified 73.5% of the time; tentatively decided, 43.7% of the time; and decided students, 70.3% of the time (see Table 15 for further detail).

Adding five more variables to the function improved the ability to classify groups. Two significant functions were computed (Function 1: Wilks' lambda = .5154, $p < .0001$; Function 2: Wilks'

Table 9. Standardized Discriminant Function Coefficients for Several Good Classifiers of Gender

Variable	Coefficient
Tolerance	0.35220
Satisfaction with College	-0.21631
Importance of Studying Science	-0.43867
Importance of Studying Humanities	-0.07495
Improving Communication	0.07710
Cultural Activities	0.31581
Vocational Interests	0.17727
Becoming Involved on Campus	0.24263
Involved in Student Activities	0.23820
Participating in Intramural Sports	-0.51037
High School GPA	0.27440

Table 10. Percentage of Correct Classification of Gender by High School Grade Point Average and Several Significant Variables

Actual Group	Number of Cases	Predicted Group Membership	
		Female	Male
Female	428	298 69.6%	130 30.4%
Male	263	73 27.8%	190 72.2%
Percent of "grouped" cases correctly classified		70.62%	

Table 11. Significant Variables in Classification
of Level of Decidedness

Wilks' Lambda (U-Statistic) and Univariate F-Ratio with 2 and 651 Degrees of Freedom			
Variable	Wilks' Lambda	F	Significance
Indecision	0.82493	69.08	0.0000
Comfort	0.72468	123.70	0.0000
Matching Self with Career	0.85139	56.82	0.0000
Self-Clarity	0.87730	45.52	0.0000
Occupational-Educational Information	0.84608	59.22	0.0000
Decisiveness	0.94854	17.66	0.0000
Choice-Work Salience	0.87318	47.27	0.0000
Total CDP	0.79014	86.45	0.0000
Educational Involvement	0.76078	102.40	0.0000
Career Planning	0.79523	83.82	0.0000
Life Planning	0.90300	34.96	0.0000
Life Management	0.97197	9.387	0.0001
Cultural Participation	0.99062	3.083	0.0465
Purpose	0.80221	80.26	0.0000
Emotional Autonomy	0.97943	6.835	0.0012
Academic Autonomy	0.98244	5.817	0.0031
Likelihood of Failing Course	0.98538	4.829	0.0083
Likelihood of Graduating with Honors	0.98045	6.492	0.0016
Likelihood of B Average	0.98289	5.667	0.0036
Likelihood of Stopping Out	0.97737	7.535	0.0006
Likelihood of Transferring	0.98797	3.965	0.0194
Likelihood of Dropping Out	0.98969	3.392	0.0342
Satisfaction with College	0.98286	5.675	0.0036
First Job in Major Field	0.98911	3.584	0.0283
Level of Degree Planned	0.90767	33.11	0.0000
Level of Mother's Education	0.98092	6.332	0.0019
Importance of Studying Science	0.97527	8.253	0.0003
Importance of Studying Social Science	0.97810	7.287	0.0007
Importance of Getting High Grades	0.97569	8.111	0.0003

Table 12. Percentage of Correct Classification of Level of Decidedness by Significant Variables

Actual Group	Number of Cases	Predicted Group Membership		
		U	T	D
Undecided	282	209 74.1%	51 18.1%	22 7.8%
Tentatively Decided	202	48 23.8%	113 55.9%	41 20.3%
Decided	170	13 7.6%	32 18.8%	125 73.5%
Ungrouped Cases	1	1 100.0%	0 0.0%	0 0.0%
Percent of "grouped" cases correctly classified			68.35%	

Table 13. Significant Variables Which Classify Level of Decidedness from Abbreviated Discriminant Function

Wilks' Lambda (U-Statistic) and Univariate F-Ratio with 2 and 692 Degrees of Freedom

Variable	Wilks' Lambda	F	Significance
Indecision	0.83504	68.35	0.0000
Comfort	0.71393	138.60	0.0000
Decisiveness	0.95095	17.85	0.0000
Choice-Work Salience	0.86787	52.68	0.0000
Educational Involvement	0.76035	109.10	0.0000
Career Planning	0.79085	91.50	0.0000
Life Management	0.97474	8.965	0.0001
Degree Planned	0.91375	32.66	0.0000
Likelihood of High Grades	0.97319	9.530	0.0001

Table 14. Standardized Discriminant Function Coefficients for Two Abbreviated Functions Classifying Level of Decidedness

Scales/Subscales	Coefficients	
	Function 1	Function 2
Indecision	-0.21048	0.63952
Comfort	0.48216	-0.43308
Decisiveness	0.03388	-0.22025
Choice-Work Salience	-0.31743	-0.03020
Educational Involvement	0.45094	0.59177
Career Planning	0.17538	0.25955
Life Management	-0.21993	-0.11588
Degree Planned	0.24080	0.09737
Likelihood of High Grades	-0.15991	0.08831

Table 15. Percentage of Correct Classification of Level of Decidedness Using an Abbreviated List of Discriminant Variables

Actual Group	Number of Cases	Predicted Group Membership		
		U	T	D
Undecided	298	219 73.5%	50 16.8%	29 9.7%
Tentatively Decided	215	58 27.0%	94 43.7%	63 29.3%
Decided	182	10 5.5%	44 24.2%	128 70.3%
Ungrouped Cases	1	1 100.0%	0 0.0%	0 0.0%
Percent of "grouped" cases correctly classified			63.45%	

lambda = .9164, $p < .0001$). Function 1 accounted for 89.5% of the variance (Eigenvalue = .7780); whereas Function 2 accounted for 10.5% of the variance (Eigenvalue = .0912). Table 16 shows the list of significant variables. Table 17 gives the standardized discriminant function coefficients for the significant function. The overall ability to identify group membership correctly was increased to 66.4%; ability to classify undecided students dropped slightly to 72.7% of the time; tentatively decided increased to 50.0% of the time; and decided increased to 75.1% of the time (see Table 18 for more information).

Table 16. Variables Which Significantly Identify Level of Decidedness

Wilks' Lambda (U-Statistic) and Univariate F-Ratio with 2 and 687 Degrees of Freedom			
Variable	Wilks' Lambda	F	Significance
Indecision	0.83780	66.50	0.0000
Comfort	0.71579	136.40	0.0000
Decisiveness	0.95244	17.15	0.0000
Choice-Work Salience	0.86751	52.46	0.0000
Educational Involvement	0.76020	108.40	0.0000
Career Planning	0.79162	90.42	0.0000
Life Management	0.97397	9.184	0.0001
Degree Planned	0.91433	32.18	0.0000
Likelihood of High Grades	0.97300	9.531	0.0001
Level of Parents' Income	0.98240	6.154	0.0022
Level of Mother's Education	0.97953	7.180	0.0008
Academic Autonomy	0.98398	5.592	0.0039
Self-Clarity	0.87478	49.17	0.0000
Occupational-Educational Information	0.84959	50.81	0.0000
Likelihood of Failing Course	0.98448	5.414	0.0046

Table 17. Standardized Discriminant Function Coefficients for Best Discriminant Function in Classifying Levels of Decidedness

Variables	Coefficients	
	Function 1	Function 2
Indecision	-0.18653	0.30154
Comfort	0.42435	-0.08001
Decisiveness	0.08652	-0.35977
Choice-Work Salience	-0.27479	-0.19720
Educational Involvement	0.44834	0.45297
Career Planning	0.15215	0.20738
Life Management	-0.16962	-0.15723
Degree Planned	0.23975	0.11545
Likelihood of High Grades	-0.12842	-0.06822
Level of Parents' Income	-0.07960	0.22580
Level of Mother's Education	-0.09973	0.10631
Academic Autonomy	-0.00896	-0.08176
Self-Clarity	-0.00794	0.37943
Occupational-Educational Information	-0.20702	0.39178
Likelihood of Failing Course	-0.07393	0.39638

Table 18. Percentage of Correct Classification of Level of Decidedness Using Key Variables

Actual Group	Number of Cases	Predicted Group Membership		
		U	T	D
Undecided	297	216 72.7%	58 19.5%	23 7.7%
Tentatively Undecided	212	57 26.9%	106 50.0%	49 23.1%
Decided	181	12 6.6%	33 18.2%	136 75.1%
Ungrouped Cases	1	0 0.0%	0 0.0%	1 100.0%
Percent of "grouped" cases correctly classified			66.38%	

One last discriminant function analysis was conducted by removing Academic Autonomy. The percentage of correct classifications changed minimally. Finally, by adding the CDS Certainty scale and the CDP Decidedness scale, percentage of correct classifications was improved to an overall 70.6%; 74.1% for undecided; 59.9% for tentatively decided; and 77.3% for decided (see Table 19 for further detail).

Table 19. Percentage of Correct Classification of Level of Decidedness After Removing Academic Autonomy and Adding CDS Certainty Scale and CDP Decidedness Scale

Actual Group	Number of Cases	Predicted Group Membership		
		U	T	D
Undecided	297	220 74.1%	63 21.2%	14 4.7%
Tentatively Decided	212	36 17.0%	127 59.9%	49 23.1%
Decided	181	3 1.7%	38 21.0%	140 77.3%
Ungrouped Cases	1	0 0.0%	0 0.0%	1 100.0%
Percent of "grouped" cases correctly classified			70.58%	

Questionnaire Variables

Subjects were asked to report the highest degree they sought (see Table 20), whether The University of Arizona was their first, second, third or lower choice (see Table 21), their parents' combined income (see Table 22), the level of both mother's (see Table 23) and father's education (see Table 24), and their reason for attending the university (see Table 25). The primary reason for attending the university was "to prepare for an occupation" (62.3%); the secondary reason was "to become an educated person" (31.9%). See Appendix H for remaining results.

Table 20. Response Frequencies for Highest Degree Planned

Response	Value	Frequency	Percent	Cum Percent
Bachelor's Degree	0	134	19.2	19.3
Master's Degree	1	216	31.0	50.3
Professional (Law, Medicine)	2	205	29.4	79.7
Doctorate	3	141	20.2	100.0
		<u>1</u>	<u>.1</u>	
Total		697	100.0	

Table 21. Response Frequencies to University of Arizona as the College of Choice

Response	Value	Frequency	Percent	Cum Percent
First Choice	0	431	61.8	62.0
Second Choice	1	179	25.7	87.8
Third Choice	2	54	7.7	95.5
Less Than Third Choice	3	29	4.2	99.7
	6	1	.1	100.0
	7	1	.1	
		<u>2</u>	<u>.3</u>	
Total		697	100.0	

Table 22. Response Frequencies of Parents' Combined Income

Response	Value	Frequency	Percent	Cum Percent
Less than \$9999	0	15	2.2	2.2
\$10000-19999	1	28	4.0	6.2
\$20000-29999	2	50	7.2	13.4
\$30000-39999	3	89	12.8	26.2
\$40000-49999	4	66	9.5	35.7
\$50000-59999	5	87	12.5	48.3
\$60000-74999	6	112	16.1	64.4
\$75000-99999	7	91	13.1	77.5
\$100000-149999	8	70	10.0	87.6
\$150000 or more	9	86	12.3	100.0
		<u>3</u>	<u>.4</u>	
Total		697	100.0	

Table 23. Response Frequencies for Mother's Level of Education

Response	Value	Frequency	Percent	Cum Percent
Grammar School or Less	0	12	1.7	1.7
Some High School	1	12	1.7	3.4
High School Graduate	2	102	14.6	18.1
Postsecondary School	3	40	5.7	23.9
Some College	4	174	25.0	48.9
College Degree	5	180	25.8	74.7
Some Graduate School	6	50	7.2	81.9
Master's Degree	7	104	14.9	96.8
Doctoral Degree	8	22	3.2	100.0
		<u>1</u>	<u>.1</u>	
Total		697	100.0	

Table 24. Response Frequencies for Father's Level of Education

Response	Value	Frequency	Percent	Cum Percent
Grammar School or Less	0	10	1.4	1.4
Some High School	1	16	2.3	3.7
High School Graduate	2	63	9.0	12.8
Postsecondary School	3	19	2.7	15.6
Some College	4	101	14.5	30.1
College Degree	5	188	27.0	57.2
Some Graduate School	6	43	6.2	63.4
Master's Degree	7	145	20.8	84.3
Doctoral Degree	8	103	14.8	99.1
	9	6	.9	
		3	.4	
Total		697	100.0	

Table 25. Response Frequencies of Student's Reason for Attending the University

Response	Value	Frequency	Percent	Cum Percent
To Prepare for an Occupation	0	434	62.3	62.3
Become an Educated Person	1	222	31.9	94.1
Because My Parents Expect It	2	5	.7	94.8
For Social Opportunities	3	3	.4	95.3
Because My Friends Are	4	22	3.2	98.4
To Find Myself	5	9	1.3	99.7
Other	6	2	.3	100.0
Total		697	100.0	

Post Hoc Analyses

Orientation

A post hoc analysis of variance was conducted to determine if there were significant differences in high school grade point average, gender, ethnicity and level of decidedness between subjects who completed the assessment packets and those who did not. Significant difference was found in grade point averages ($F(1,1140) = 14.40$; $p < .0002$; see Table 26 for further detail). No significant differences were found in gender, ethnicity or level of decidedness.

Table 26. Mean Grade Point Averages Across Orientation Sessions

Session	Count	Mean	Standard Deviation
Orientation 1	88	3.2685	.4946
Orientation 2	66	3.3237	.4433
Orientation 3	79	3.3113	.5988
Orientation 4	110	3.3481	.5184
Orientation 5	85	3.2132	.5299
Orientation 6 (includes New Start/Summer Bridge)	88	3.1851	.4973
Orientation 7	81	3.1459	.5634
Orientation 8	69	3.1063	.4233
New Start/Summer Bridge Undecided	31	3.0534	.4272
Total	695	3.2339	.5156

Post hoc analysis of variance procedures were used to check for a significant difference between students attending each of the eight orientation sessions and the New Start/Summer Bridge Programs. No significant difference was found between orientation sessions and level of decidedness, gender or degree sought. A significant difference in high school grade point average was found across orientation sessions ($F(8,686) = 2.6584$; $p < .01$; see Table 26 for mean grade point averages per session). A significant difference was also found in the reported parental income ($F(8,864) = 8.864 = 3.409$; $p < .001$; see Table 27) and ethnicity ($F(5,694) = 11.89$; $p < .0001$; see Table 28). Since the different ethnic groups were coded, the means do not give information about ethnic distribution. See Table 29 for the distribution of ethnic groups across orientation sessions.

Table 27. Mean Parental Income Per Orientation Session

Session	Count	Mean	Standard Deviation
Orientation 1	86	6.2907	1.9992
Orientation 2	67	5.3433	2.2999
Orientation 3	79	5.2658	2.4375
Orientation 4	110	5.4455	2.3757
Orientation 5	84	5.4643	2.3513
Orientation 6 (includes New Start/Summer Bridge)	87	5.2644	2.5901
Orientation 7	80	5.0000	2.3760
Orientation 8	69	5.5507	2.5178
New Start/Summer Bridge Undecided	31	3.9032	2.7490
Total	693	5.3896	2.4230

Note: Means are calculated from the ordinal value assigned to each income level (see below). The value scale is not equal interval, therefore means are only useful as an approximation of income level.

<u>Assigned Income Value</u>	<u>Income Level</u>
0	Less than \$9999
1	\$10000-19999
2	\$20000-29999
3	\$30000-39999
4	\$40000-49999
5	\$50000-59999
6	\$60000-74999
7	\$75000-99999
8	\$100000-149999
9	\$150000 or more

Table 28. Results of Analysis of Variance Comparing Ethnic Distribution at Orientation Sessions

Analysis of Variance Orientation by Ethnicity					
Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	5	305.9453	61.1891	11.8917	.0000
Within Groups	689	3545.2691	5.1455		
Total	694	3851.2144			

Group	Count	Mean	Standard Deviation	Standard Error	
Asian	22	3.7273	2.1643	.4614	
Native American	7	6.5714	.9759	.3689	
White	601	3.4542	2.2836	.0932	
Black	9	6.5556	2.5550	.8517	
Hispanic	44	5.4773	2.3076	.3479	
Unclassified	12	3.5000	1.6787	.4846	
Total	695	3.6633	2.3557	.0894	

Table 29. Distribution of Ethnicity by Orientation Session

Session	Unclassified	Black	Hispanic	Native American	Oriental	White	Row Total
Orientation 1	1	1	1		2	81	86
Orientation 2	1		1		1	64	67
Orientation 3	2		5		3	69	79
Orientation 4	5		3		5	97	110
Orientation 5	1		1		3	80	85
Orientation 6			12	1	4	71	88
Orientation 7	4	1	3	2	1	70	81
Orientation 8		3	5	3	2	56	69
New Start/Summer Bridge Undecided		4	13	1	1	12	31
Column	14	9	44	7	22	600	696
Total	2.0	1.3	6.3	1.0	3.2	86.2	100.0

Response Bias

A one-way analysis of variance was applied to all variables using the SDTLI Response Bias scale as the dependent measure. Significant main effects were found on SDTLI scales and subscales. Single-question variables dealing with lasting friendships, verbal communication, cultural understanding, and intramural and inter-collegiate sports were significant. No evidence of response bias was found on either the CDP or the CDS scales or subscales. Table 30 gives the distribution of subjects on each of the Response Bias scores. See Table 31 for a summary of effects.

Table 30. Distribution of Subjects on Response Bias Scores

Response Bias Score	Frequency	Percent	Cum Percent
0	405	58.1	58.1
1	167	24.0	82.1
2	77	11.0	93.1
3	41	5.9	99.0
4	<u>7</u>	<u>1.0</u>	100.0
Total	697	100.0	

Table 31. Results of One-Way Analysis of Variance with Significant Single Question Variables Using Response Bias as the Dependent Measure

Variable	Mean Score on Variable When Response Bias Score is:					F Ratio	F Prob.	SNK* Significance Between
	0	1	2	3	4			
Lasting Friendships**	2.70	2.71	2.53	2.45	2.43	3.10	.0153	0 and 2, 3
Effective Communication**	2.65	2.62	2.43	2.44	2.43*	2.84	.0237	0 and 2
Cultural Understanding**	1.90	1.87	1.60	1.61*	2.00	2.68	.0309	0 and 2
Intramural Sports**	1.50	1.41	1.80	1.73	1.43	2.40	.0487	1 and 2
Intercollegiate Sports**	0.99	0.99	1.37	1.10	0.86	2.51	.0407	0, 1 and 2

*Note. The Student-Newman-Keuls Procedure takes into account unequal group count and the standard error for each group, therefore, equal means may or may not be significant.

**Note. Means of these variables are based on the following raw scores:

- 1 = Not important
- 2 = Moderately important
- 3 = Important
- 4 = Very important

A response bias effect was found on the SDTLI Purpose scale between subjects with a 0 Response Bias score and those with scores of 2 and 3 ($F(4,696) = 3.33$; $p < .01$). Accounting for the significant results on the Purpose scale were significant results on three of its five subscales: Educational Involvement ($F(4,696) = 2.81$; $p < .0246$), Career Planning ($F(4,696) = 7.73$; $p < .0001$) and Cultural Participation ($F(4,696) = 3.55$; $p < .0071$). On Educational Involvement significance was found between those scoring 2 on the Response Bias scale and those scoring 0 or 1 ($p < .05$). On Career Planning those who scored 2 or 3 were significantly different ($p < .05$) from those who scored 0 or 1. On Cultural Participation significance was found between those who scored 0 and those who scored 1.

The Mature Interpersonal Relationship scale also showed a significant response bias effect ($F(4,696) = 16.63$; $p < .0000$). Those who scored 0 were significantly different ($p < .05$) on the MIR scale than those who scored 1, 2, 3 or 4. Those who scored 1 on the Response Bias scale were significantly different ($p < .05$) than those whose scores were 2 or 3. Accounting for the response bias results on the MIR were significant results on its three subscales: Peer Relationships ($F(4,696) = 7.58$; $p < .0001$), Emotional Autonomy ($F(4,496) = 4.35$; $p < .0017$), and Tolerance ($F(4,696) = 24.84$; $p < .0000$). Significance ($p < .05$) was found on the Emotional Autonomy subscale between those who scored 0 and those who scored 1, 2, or 3 on the Response Bias scale. On the Peer Relationship subscale those who scored 0 were significantly different ($p < .05$) than those who scored 1, 2, 3 or 4;

those who scored 1 were different ($p < .05$) than those who scored 3. On the Tolerance subscale those who scored 0 were significantly different than those who scored 1, 2, 3 or 4; those with a score of 1 were different than those who scored 2, 3, or 4.

Validation Estimate

The Career Decision Scale was used as a criterion measure to support the validity of the Career Decision Profile. Validity coefficient between both measures was -0.24 ; between CDS Certainty and CDP Decidedness scales 0.64 ; between CDP Comfort subscale and CDS Indecision 0.49 ; between CDP Total and CDS Indecision 0.49 ; between CDP Comfort and CDS Certainty 0.54 ; between Decidedness and CDS Indecision -0.46 ; and between Decidedness and CDS Certainty 0.64 . See Table 32 for the correlation matrix between the CDP, CDS, and related SDTLI scales and subscales.

Additional validation support for the Career Decision Profile is provided by correlations with SDTLI scales and subscales. The CDP Decidedness scale correlates with Educational Involvement (0.45), with Career Planning (0.52), and with Purpose (0.47). The CDP Comfort scale correlates with Educational Involvement (0.45), Career Planning (0.47), and Purpose (0.47). The CDP Total scale correlates with Purpose (0.40).

Further support of CDP validity comes from correlations with four questions from the initial questionnaire: 1) the grouping question that asked subjects to choose the statement which came closest to the degree of certainty they felt about their major

Table 32. Correlation Matrix Showing Degree of Relationship of CDP to CDS and Related SDTLI Variables

Grouping Variable	Career Decision Profile Scales and Subscales*							
	Decid	Comfort	Matslf	+Sifclr	+ Occeu	+ Decisv	+Choicwk	= Total
Major	0.669	0.537	-0.375	-0.355	-0.368	-0.230	-0.381	-0.468
CDS								
Certainty	0.636	0.543	-0.412	-0.359	-0.383	-0.280	-0.394	-0.478
Indecision	-0.462	-0.486	0.480	0.344	0.411	0.307	0.253	0.488
SDTLI								
Purpose	0.447	0.448	-0.304	-0.316	-0.249	-0.266	-0.256	-0.374
Career Planning	0.520	0.474	-0.311	-0.262	-0.287	-0.276	-0.349	-0.372
Life Planning	0.342	0.362	-0.231	-0.280	-0.223	-0.270	-0.282	-0.342
Educational Involvement	0.447	0.448	-0.304	-0.316	-0.249	-0.266	-0.256	-0.374
Life Management	0.194	0.224	-0.121	-0.250	-0.096	-0.251	-0.148	-0.211

*Note. Key to abbreviations

Decid = Decidedness

Matslf = Matching Self with Career

Sifclr = Self-Clarity

Occeu = Occupational-Educational Information

Decisv = Decisiveness

Choicwk = Choice-Work Salience

Total = Matslf + Sifclr + Occeu + Decisv + Choicwk

selection; 2) a similar question about the degree of certainty they felt about their career selection; 3) the chance that they would change their major field; and 4) the chance that they would change their career choice (see Appendix A, questions 1, 2, 4 and 5, respectively). Table 33 gives the correlations between CDP scales and these questions.

Table 33. Correlation between CDP and Three Questions

	Decid	Comfort	Career Decision Profile Scales and Subscales					Total
			Matslf	Slfclr	Occedu	Decisv	Choicwk	
Career*	0.746	0.617	-0.412	-0.330	-0.401	-0.229	-0.459	-0.485
Changing Major	0.601	0.555	-0.400	-0.340	-0.412	-0.249	-0.339	-0.474
Changing Career	0.661	0.605	-0.430	-0.349	-0.432	-0.267	-0.406	00.521

*Note. Career = How decided are you about your career choice?
 Major = How likely are you to change your major?
 Change = How likely are you to change your career?

**Note. Key to abbreviations
 Decid = Decidedness
 Matslf = Matching Self with Career
 Slfclr = Self-Clarity
 Occedu = Occupational-Educational Information
 Decisv = Decisiveness
 Choicwk = Choice-Work Salience
 Total = Matslf + Slfclr + Occedu + Decisv + Choicwk

CHAPTER 4

DISCUSSION

Summary of Hypothesis Testing

Hypothesis 1--Levels of decidedness could not be differentiated by demographics and high school academic information.

Hypothesis 2--Tentatively decided subjects did not have lower high school grade point averages and class ranks than those who are either decided or undecided. This study, therefore, fails to support the finding of Ashby, Wall, and Osipow (1966) that decided students had higher higher school grades than either undecided or tentatively decided students. In the present study, no differences were found among all three groups.

Hypothesis 3--Decided and undecided students are significantly different on certain Student Development Task and Lifestyle Inventory scales. A discriminant function was calculated from SDTLI scales and subscales which correctly identified the level of decidedness of 52.8% of the subjects.

Hypothesis 4--Differences were found between male and female subjects on many of the areas assessed.

The Relationship of Student Development
to Level of Decidedness

Statistical significance of variables is important in calculating discriminant functions for the purpose of identifying group

differences, however, caution must be exercised in the interpretation of these functions. Percentage of correct classification is the best indicator of the ability of variables in a function to make predictions. A 52.8% rate of correct classification does not give the researcher much confidence in a function's ability to identify students who are decided, undecided or tentatively decided.

Winston and Miller (1987) have described high scorers on each of the SDTLI scales as students who have progressed toward completion of certain developmental tasks. It is very important not to count freshmen as high scorers. The SDTLI was designed to measure student development from approximately 17 to 23 years of age. The majority of students who participated in this study were 17 and 18 years old. Therefore, scores on the SDTLI scales and subscales must be examined in relationship to the subjects' age. Even if decided students score higher than the tentatively decided or the undecided students, their level of development is still that of freshmen.

Winston and Miller (1987) have collected normative data on each of the SDTLI scales and subscales. Table 34 shows normative mean scores for freshmen on the SDTLI scales that are significant in this study as compared to the mean scores of the undecided, tentatively decided and decided subjects in this study. Table 35 shows graphically how each group of subjects compares to freshman norms. First, Winston and Miller do not report at what time during the freshman year they collected the data from which the norms were determined. For some students freshman orientation takes place prior to high school

Table 34. Comparison of Student Development Task and Lifestyle Inventory Normative Means for Freshmen to Means of Significant Scales/Subscales for Three Levels of Decidedness

STDLI Scale	Freshman Norm	Undecided	Tentatively Decided	Decided
Purpose	32.41	24.77	32.55	35.77
Educational Involvement	7.72	4.92	7.73	8.70
Career Planning	8.12	4.25	7.25	8.57
Life Planning	5.80	4.47	5.47	6.12
Life Management	7.60	7.84	8.74	8.91
Emotional Autonomy	4.07	4.20	4.71	4.74
Academic Autonomy	4.59	5.00	5.26	5.77

Table 35. Comparison of Significant Standardized SDTLI Scores for Three Levels of Decidedness with Standardized Freshmen Norms

	20	30	40	50	60	70	80
Purpose			.	x			
				o+			
Educational Involvement			.	o	x+		
Career Planning			.	x	o+		
Life Planning			.	x	o+		
Life Management					o.		
Emotional Autonomy					o.		
Academic Autonomy					o.	x+	

Mean = 50

Standard Deviation = 10

Note. 0 = Freshman Norm
 . = Undecided
 x = Tentatively Decided
 + = Decided

graduation. It is very possible that a great deal of development takes place between freshman orientation and the middle of first semester. The profile of undecided students presented here is most likely very temporary. Results would be entirely altered if data were collected midway through the freshman year. Second, Winston and Miller's normative data represents an average of the pooled results of all levels of decidedness in their sample.

In an attempt to create a discriminant function that could improve ability to identify level of decidedness and, therefore, indicate the variables that most accurately explain the differences between undecided, tentatively decided and decided students, a post hoc discriminant analysis was applied to all collected variables except CDS Certainty and CDP Decidedness. These scales were omitted because they naturally identified level of decidedness and gave no information about the subject other than the fact that they were decided or undecided. Of sixty-eight variables entered into the analysis, thirty-one made a significant contribution to a discriminant function. The final function was calculated by including the CDS Certainty scale. Table 19 shows that the percentage of correct classification of tentatively decided students was increased substantially by its inclusion.

Winston and Miller (1987) reported validity estimates of the SDTLI as moderate to low on most scales and subscales. Validity for the Purpose scale and Educational Involvement and Career Planning subscales in this study is moderately supported by the validity

coefficients reported in Table 36. The results of this study indicate substantial consistency among students at each level of decidedness on items included on the significant subscales (see Appendix F for questions included in each subscale). It must be stressed that in making definitive judgments about undecided, tentatively decided and decided students, there is a great deal of room for error.

Single-question variables from the Initial and Student Questionnaires contributed to the discriminant function's ability to classify levels of decidedness. Table 37 gives the variables, the means and which levels of decidedness they distinguish. Consideration of the relationships of these variables to levels of decidedness may supply valuable information for understanding students at various levels of decidedness.

Developmental Profiles

It would be simple to say that decided students are further along in their development than undecided or tentatively decided students by stratifying them into levels of maturity. Levels of decidedness need to be seen not as three separate categories, but as places on a developmental continuum.

The basic assumptions of developmental theory are that individual development is continual and cumulative, a continuum that moves from simple to complex thinking, behavior and attitudes. This continuum is assumed to be orderly and stage-related, both intellectually and psychosocially. It fits reality more accurately when understood as a spiral rather than a linear configuration. As they

Table 36. Correlations between CDP Scales, CDS, STDLI and Initial Questionnaire Responses

	CDP Decidedness	CDP Comfort	CDP Total	CDS Certainty	CDS Indecision
CDS Certainty	0.636	0.543	-0.478	1.000	-0.470
CDS Indecision	-0.462	-0.486	0.488	-0.470	1.000
SDTLI Scales/Subscales					
Educational Involvement	0.447	0.448	-0.374	-0.484	-0.294
Career Planning	0.520	0.474	-0.372	0.532	-0.291
Life Planning	0.342	0.362	-0.342	0.370	-0.233
Life Management	0.194	0.224	-0.211	0.222	-0.139
Purpose	0.472	0.474	-0.404	0.504	-0.295
How Certain about Major?	0.669	0.537	-0.468	0.669	-0.389
How Certain about Career?	0.746	0.617	-0.485	0.629	-0.434
Likelihood to Change Major	0.601	0.555	-0.474	0.623	-0.449
Likelihood to Change Career	0.661	0.605	-0.521	0.603	-0.462

Table 37. Results of One-Way Analysis of Variance on Significant Single-Question Variables Using Level of Decidedness as Dependent Measure

Variables	U	Means T	D	Significant Difference between Groups					
				.01 Level			.05 Level		
				UT	UD	TD	UT	UD	TD
How Decided about Major?	0.59	2.00	3.15	X	X	X	X	X	X
How Decided about Career?	0.88	1.94	2.88	X	X	X	X	X	X
Likelihood to Change Major	0.37	1.07	2.07	X	X	X	X	X	X
Likelihood to Change Career	0.60	1.18	1.96	X	X	X	X	X	X
Likelihood to Graduate with Honors	1.30	1.16	1.05		X		X	X	
Likelihood of Getting B Average	0.48	0.38	0.32		X		X	X	
Likelihood of Stopping Out	2.37	2.56	2.59	X	X		X	X	
Likelihood of Transferring	1.61	1.67	1.84	Not significant				X	X
Likelihood of Dropping Out	2.79	2.87	2.88	Not significant			X	X	
Likelihood of Satis- faction with College	0.43	0.35	0.25		X			X	

Table 37, continued

Variables	U	Means T	D	Significant Difference between Groups					
				.01 Level			.05 Level		
				UT	UD	TD	UT	UD	TD
Likelihood of Getting Job in Field	0.36	0.32	0.23	Not significant					X
Importance of Studying Science	1.24	1.57	1.62	X	X		X	X	
Importance of Studying Social Sciences	2.05	2.30	2.28	X	X		X	X	
Importance of Getting High Grades	2.15	2.40	2.49	X	X		X	X	
Importance of Exploring Majors	2.46	2.27	1.85		X	X	X	X	X
Importance of Social/ Political Involvement	1.10	1.33	1.27	Not significant			X		

*Note. Means of variables are based on the following scale:

- 0 = Very good chance
- 1 = Some chance
- 2 = Very little chance
- 3 = No chance

**Note. Means of variables are based on the following scale:

- 0 = Not important
- 1 = Moderately important
- 2 = Important
- 3 = Very important

complete developmental tasks and move through stages, individuals circle back on themselves. They sometimes seem to repeat tasks or regress, but the order, if analyzed, is in the direction of greater complexity and finer discrimination. When levels of development are assessed, and linear functions are derived to classify those levels, development is easily perceived as a linear process. It is difficult to speak of development in other than linear terms; e.g., "decided students scored higher than undecided students." For this reason the terms "dimensions" and "vectors" of development may describe the forward progress along the developmental continuum better than the term "stages." When individuals are assumed to be multidimensional creatures with the potential for development along each of many continua, the complexity of development is more realistically expressed. With this in mind, three developmental profiles emerging from this study will be defined.

The Undecided Student. The writer's overall impressions from the data collected are that students who have described themselves as "totally" or "somewhat" undecided do not have a clear personal direction. Their educational plans are not defined, and they do not know how or where to seek information that would facilitate making their plans. Education seems to be something that happens to them, that is supplied by a university, more than something they can become actively involved in and direct for themselves. These students do not know themselves very well; they have not engaged in the self-evaluation that would allow them to outline their interests, likes, dislikes,

talents, skills, strengths and weaknesses. These qualifiers are the essential parts of self-knowledge that allow students to evaluate potential major and career choices. Undecided students know very little about the content of a few academic majors. They know less about career fields and the job market. They do not know where or how, nor are they particularly motivated, to seek this information. They often do not acknowledge the need to make a decision. They are not aware that there is a career planning process. For the most part, they believe they simply "choose" a major and a career. The data show that they seem to know little about what is required in majors they may be interested in or how to prepare for future employment. They are, however, relatively confident in their ability to get a job in their career field upon graduation.

The assessment of students' life management skills indicates that undecided students have not learned to manage their time, money or energy. They have not learned how to assess academic requirements, nor plan means to fulfill the requirements. Their ability to make decisions is rudimentary, and they seem to have a bi-dimensional view of decision-making; yes-no or this-that. For the most part, undecided students do not plan recreation, schoolwork, major or career exploration, class selection, finances or health.

Undecided students are perhaps more emotionally dependent upon their parents than their peers who are decided. They look to parents or older adults in most decision-making situations. They do not have confidence in their own abilities to reason, think, or

choose. In extreme instances, they perceive themselves as quite helpless. Undecided students want sure, easy solutions to major and career decisions that involve minimal risk. They avoid difficult people, situations, and choices.

Self-discipline is not a typical characteristic for undecided students. They seem to be incapable of monitoring and controlling themselves for academic success. They learn passively and easily become bored.

Undecided students can be indecisive, i.e., have difficulty making decisions even when there is sufficient information available. They often become discouraged about their uncertainty. They often see parental, educational, and financial barriers to choices that they might make, and are unable or unwilling to question the reality of the barriers or, if a barrier actually exists, to search for alternative solutions.

Since undecided students show little evidence of having goals and plans, they also have low academic aspirations. For the most part they seek a bachelor's degree, seldom a master's degree. Receiving high grades is not particularly important to them. In fact, academic performance, in general, is not of great importance to the undecided student. This attitude is often accompanied by the lack of confidence in their ability to perform well in coursework. Many fear the possibility of failing at least one course.

Undecided students at the point of entering college, on the average, tend to come from solid socio-economic backgrounds where the

pressure to finish college in four years is minimal. Their mothers in particular, on the average, tend to have college degrees. Their commitment to their chosen university is not solid, and many entertain the idea of transferring to other schools at some point. Many undecided students consider the possibility of some type of hiatus in their college career, although they do not consider dropping out permanently.

The Decided Student. According to the data collected in this study, students who have chosen majors prior to entering the university seem to have an idea of the direction they would like to pursue in their education and life. They have named that direction and have begun taking steps in that direction. They indicate that they have a rudimentary plan and purpose for their educational pursuits. They have begun seeking educational resources, and they exercise initiative in setting up experiences that will help them toward their present goal. They essentially "own" their direction and are in the process of defining goals by discovering requisite skills and qualifications necessary for their achievement.

Decided students report that they have initiated a career planning process and have begun inquiries into the world of work. They have discovered some interests, are aware of some skills, abilities and talents, and have set themselves the task of inquiring into career fields that might match those known skills, interests, talents and abilities. They are sufficiently aware of the existence of a current job market to know that certain steps must be taken to prepare oneself eventually to seek employment. They seem motivated to take those steps.

Decided students have initiated the process of becoming self-aware. They have begun to formulate life plans in the context of their own individual beliefs, values and attitudes, and to differentiate themselves from parents, siblings and peers.

In the area of life management, decided students have begun to take responsibility for their own finances, time, and energy. They balance their time between study, work and play and tend to be self-directed and goal-oriented. They are able to work independently, and make plans to accomplish short- and long-term goals.

Personally, decided students are in the process of getting to know themselves from the standpoint of defining their interests, skills, abilities, likes and dislikes. They are more self-confident and tend to trust their own ideas and feelings. They are willing to take some risks and enter into novel experiences. They are in the process of extracting themselves from the need to have parental approval and help in decision making. They feel confident in their own ability to make choices and to design academic and career plans.

Academically, decided students are self-directed and disciplined. They have taken responsibility for their academic achievement. They understand the requirements for success, realistically plan the tasks and activities that will result in the fulfilling of those requirements, and monitor their own progress as they proceed toward their goals. For the most part, they have higher academic aspirations than students who have not yet committed to a major. They are, for the most part, committed to their education and their school, and

entertain little possibility of changing schools or interrupting their studies for any reason.

The Tentatively Decided Student. Those students who have chosen a major, but are unsure about their choice, seem to share characteristics of both decided and undecided. In many ways, students who are tentatively decided may be viewed as being in a transitional phase between two points on the developmental continuum, indecision and decision. At the time of assessment, they were caught at a point in time midway between two states of being. In other ways, when comparison is made to undecided and decided students, the tentatively decided seem more closely to resemble the undecided student, as if the major decision were premature. This is not always the case. On many characteristics they resemble decided students, i.e., they are in the process of unfolding or building their sense of self, their direction, and their life plan.

Tentatively decided students resemble undecided students because they do not have a strong sense of their educational goals and are not aware of academic resources available to them. This may be a reason for their tentativeness; i.e., the process of self-examination is incomplete and, therefore, the major they have chosen does not fit within a context of self-defined goals. This holds true for their choice of major within the context of career development. If a chosen major does not have a clear career path, then requisite steps in the career planning process may also be unclear. Often, tentatively decided students are heard to remark, "I think I know what I want to

major in, but I don't know what to do with it." The discomfort caused by the conflict of knowing yet not knowing would seem to motivate inquiry and initiate at least rudimentary career planning. They indicate that making an immediate career choice is very important, yet they are not motivated to seek actively information about their major or careers. They may perceive educational, personal or parental barriers that might prevent the successful completion of the major they have selected. They are not particularly comfortable with their level of decision, yet they are not as worried about their indecision as are undecided students. After all, they have a major!

Personally, tentatively decided students resemble undecided students in their lack of self-clarity. They do not know themselves very well and cannot clearly enumerate their likes and dislikes, their interests, skills or abilities.

Academically, tentatively decided students are not particularly self-disciplined or self-directed. They require help in defining academic goals and do not show much initiative in seeking out information about fulfilling academic requirements. They do not plan their study time well, have short attention spans and are easily bored with their studies. Although tentatively decided students indicate that academic performance is very important to them, they do not trust their ability to be academically successful. They reported a greater likelihood than either the decided or undecided students that they would fail one or more classes; yet their high school achievement in terms of grade point average did not support this. At the same time,

they reported that it was important for them to achieve high grades. This could possibly be a genuine conflict between desire and perceived ability. These students may, because of their lack of self-knowledge, be unable to draw on experiences that would build self-confidence.

Tentatively decided students were like the undecided students in their level of combined parental income and mother's education. This may be a factor in removing the motivation to seek actively information to set and achieve educational and career goals. Likewise, although they report satisfaction with their choice of university, they do entertain the possibility of transferring or "stopping out" for a period of time.

Like decided students, the tentatively decided students are in the process of clarifying their direction and their level of self-awareness. They are in the process of designing life plans in the context of their own beliefs, values and attitudes. They tend to be self-directed and independent, and have taken responsibility for the management of their own personal resources.

Personally, the tentatively decided are more self-confident than undecided students, trust their own feelings, and are willing to take risks and try new experiences. They are moving away from reliance on their parents for approval or help in decision making.

The Incorrect Classifications. The profiles of decided, undecided and tentatively decided students are descriptions of students who have or have not chosen majors, and those who are uncertain about their choice. These represent 29.42% of the total subject pool. What

descriptions can be made of the incorrect classifications? For instance, 21.2% of the students had not yet chosen a major, yet were classified by the discriminant function as tentatively decided, and 21.0% of the students that had chosen majors were classified as tentatively decided students.

Many students who have not chosen majors have the same characteristics as those students classified as decided in this study. They have a clear sense of personal direction, educational plans and goals, and a good, solid sense of their own identity, skills, values and abilities. They simply have not chosen a field of study or a career direction. Many of these "undecided" students have completed more developmental tasks than "decided" students. For many undecided students the lack of decision results from an "approach-approach" conflict, i.e., there are too many interesting choices, too many alternatives. The process of major selection takes time as the student explores and systematically eliminates choices.

Often, "decided" students have selected majors without having requisite information to make an educated decision. They do not know much about themselves or about the major or career opportunities available to them at graduation. They may have selected the major for any number of reasons: parents may have insisted upon a "practical" major; the major "sounds" interesting to them; there are many "good" jobs available in a particular field; certain majors have reputations for being "easy"; or for no other reason other than "I just picked one." These students are really undecided. They have no personal

goals or direction. They do not know how to pursue major exploration, and they will postpone choosing as long as they "have" a major. These students have many developmental tasks to complete.

The terms "undecided," "decided," and "tentatively decided" are actually technical terms for whether or not a student has officially selected a major; and, in the case of the tentatively decided student, whether the choice has a degree of uncertainty accompanying it. In this study, these terms were treated as constructs and have been operationally defined through discriminant analysis by a discriminant function. Variables included in the function can be used to explain various measurable dimensions of the constructs. The quantification of a construct should not be mistaken for the quantification of a human being: "A student is undecided, therefore she is" In its attempts to generalize to populations, research is prone to box up individuals in operationally defined packages "for the sake of science." This is neither the aim nor the intent of the present study. Rather, this study was designed to serve as a heuristic for researchers in developmental theory, for academic advisors and for academic and student personnel administrators who design policy and support programs for freshman-level college students.

Implications for Academic Advising

Today's college student finds herself in a complex, changing, pressure-filled environment called a college campus. She must select courses, a major and a career, knowing very little about herself, available majors, career opportunities or the job market. One major

support structure for students at college should be the academic advising system. On many campuses academic advising consists of little more than degree program planning and course selection. The student is merely a participant in a degree program who must meet specific requirements before a degree is awarded.

The present study emphasizes the importance of providing students with programs, services and advising that encourage students' participation in their own developmental processes. To support students effectively, an advising system should address the various dimensions of human development. Advisors should be equipped to help students sort out complexes of conflicting values, ideas and attitudes in the midst of parental, familial, socio-economic and emotional pressures. Academic advising should emphasize the development of academic and emotional autonomy, educational involvement, lifestyle planning and management, and the development of solid career goals. Advisors must be trained in developmental theory, student development and developmental approaches to academic advising. They must be familiar with the developmental needs of decided, undecided and tentatively decided students on campus. They must offer students information, guidance and training in self-, major and career exploration. Students' discomfort with undecidedness or uncertainty in their major choice cannot be ignored. The sources and expressions of anxiety and indecisiveness must be addressed and remedies provided by the advising system. Resources must be available that offer major and career information, tutoring in decision-making skills, and

information gathering, goal setting, and life management techniques. Finally, the advising system must have in place a method of assessing student development.

Students will develop. This is a given. However, if they are taught in which areas they may expect to change and what the nature of that change will be, they are much more likely to benefit from the intellectual richness that college environments offer them than if they remain blind to their growth processes. The analogy of a trip is perhaps useful here. When setting out on a cross-country trip, people who have a map outlining the route and indicating the various landmarks, obstacles, crossroads, etc. will be much more expeditious in reaching their destination.

As a type of developmental "map," the Student Development and Lifestyle Inventory was designed to aid students in college environments in becoming "active participants in their own learning and developmental processes" (Winston and Miller, 1987, p. 35). It offers a means of assessing a student's progress along several of Chickering's (1969) developmental vectors. The assessment measure may be self-administered and self-scored. Miller and Winston (1983, cited in Winston and Miller, 1987) have developed a Student Profile and Assessment Record (SPAR) which acquaints students with their developmental processes and gives valuable information that they can use to guide their educational planning and decision-making process. Winston and Miller (1987) recommend its use during orientation because it combines initiation into campus life with a fundamental understanding that the education about to be undertaken is not only an

intellectual pursuit, but a venture which affects the student on many dimensions.

Implications for Higher Education

Many college administrators pay rhetorical lip service to the concept of total student development. That is, after all, what education is all about. Somehow the meaning of this concept is lost in its translation into direct and indirect student services.

Sufficient administrative funding is often not provided to staff services and programs with well qualified, trained personnel and support staff (Noel, 1985; Smith, Lippitt, and Sprandel, 1985; DeCoster, 1988). Academic and student services often must scrape for funding to offer minimal services to students. Student development is not a priority, and the students and service personnel know it. Nevertheless, college and university mission statements continue to espouse policies of support for "total student development."

College curricula is often designed and handsomely funded to meet the total "intellectual" needs of the student. However, funding is administered by officials who are not aware that intellectual development is only part of the total student development.

Generally, curriculum designs preclude major exploration during the first two years of study. Degree programs are so filled with required courses that students who are unsure of their interests and abilities must suffer setbacks in time, feelings of failure and indecisiveness, and lack of confidence in their ability to make sound choices, if they select a major which is inappropriate for them.

Given more time and encouragement to explore majors via coursework and in an atmosphere fostering inquiry into various alternatives, students could accomplish a thorough "education" without suffering blows to their self-esteem. An "exploratory curriculum" and accompanying developmental advising would teach students the necessity of exploring majors and career options that are suitable to their needs, interests, abilities and socio-economic aspirations.

An alternative to an "exploratory curriculum" would be the requirement of a "University 101"-type freshman experience course. Such a course would specifically teach students the aspects of their developmental processes and the ways and means to accomplish their developmental tasks, as well as major and career exploration. This type of experiential education has been extraordinarily successful on many college campuses. However, its proposal still meets strong resistance on many large, supposedly progressive campuses by proponents of the "sink or swim" approach.

Academic programs often are designed philosophically around the "sink or swim" approach. They demand a set curriculum, with no opportunity for exploring the program through introductory coursework. They have tight academic entrance and exit requirements. "Decided" students who enter a program of this nature, according to the results of this study, will often voluntarily exit the program via academic disqualification as "undecided" students. Had these students been part of a system which assessed and apprised students of their level of development, they could have taken various paths toward

investigating the appropriateness of their major without experiencing a devastating failure.

Titley and Titley (1980) have suggested that the student's inability to choose a major from a vast array of choices because they are developmentally unready to do so may be an important factor in attrition. Some programs are funded on the belief that if students are required to choose majors, the attrition rate will be lower. The logic of this argument is based on retention studies which show that students with majors are retained to graduation with greater frequency than those without majors. The present study suggests that progress along several developmental vectors, not the actual selection of a major, prevents student attrition. If there is a direct relationship between student developmental levels and retention, then decided students will be more successful than undecided students in the completion of their educational goals. This study suggests that such a relationship exists.

This study leads to the recommendation that if institutions of higher education want to increase retention, they must produce successful students, not decided students. Successful students, as this study suggests, are in the process of discovering themselves, learning successful life management skills, being involved in their own educational processes, setting life and career goals and learning ways to accomplish those goals. Therefore, long- and short-term follow-up studies should be conducted on the subjects of this study to lend research support to the notion that the developmental level

and degree of certainty in the choice of major are significant factors in student retention.

Student development, like core curriculum, is a subject that every student should be familiar with. It is the responsibility of educators to provide students with the ways and means of gaining that knowledge. Titley and Titley (1980) suggest that there are numerous factors which operate in unintentional opposition to developmental needs of students: parents unwittingly place undue pressure upon students to decide upon a major out of fear for their future success and, more specifically, because of the financial obligations incurred if students must extend the length of their college careers because of major and career indecision.

Some faculty members, who are responsible for the intellectual development of students, do not see themselves from the perspective of their own personal development. Many seem to have forgotten that there was once a tentativeness or uncertainty about certain major decisions they had to make. This is the irony of development: unless an individual's eyes are open to their own development while they are engaged in its processes, they will not be aware of the changes that are taking place. Consequently, they will not remember the experiences of development or, in fact, having developed at all. Titley and Titley (1980) maintain that administrators tend to view the indecision of undeclared students and major changers as either academic ineptness or negative indecisiveness, rather than normal developmental progression. They suggest that it is the responsibility of college personnel to provide parents, faculty and administrators with sound, understandable

explanations of the data on student development, the phenomenon of major change, the degree of tentativeness among undergraduates, and the relationship of uncertainty to retention and attrition.

Gender Differences

Male and female subjects were significantly different from one another on many variables in this study. Table 6 shows mean scores on each significant scale, subscale or question. Direction of questions on the scale must be taken into account to evaluate which gender had the higher score. Rating scales for the items are listed to the right of the scores to which they apply. Based on the results certain suggestions may be made about differences between male and female students in the College of Arts and Sciences as they prepare to enter college. A summary of the findings on gender differences is divided into six topical areas.

Knowledge of Self

Compared to male students, female students who are about to enter a college atmosphere for the first time, on the average, are more indecisive, more aware of their need to build self-confidence, more satisfied with their college choice, more tolerant of individual differences, and more organized in terms of life management skills. Males on the other hand, are more content with their physical appearance and are very interested in physical exercise and stress reduction.

Academic Achievement

Compared to male students, female students, on the average, get better grades and believe more in their ability to achieve a bachelor's degree and honors. They report that learning is important and that they have the skills to meet their academic goals. Male degree goals, however, are, on the average, higher than females'. More men than women have chosen to pursue professional or doctorate degrees. Males attribute less importance to learning and, on the average, report that they are not as self-disciplined or organized as females in their study habits.

Career Development

Women are more tentative in their career choices than men, and they report that they are more likely than men to change their careers. Major and career exploration, as well as vocational interests, are more important to females than males. However, their first job is of less importance to them than it is to males; they also report a greater likelihood of marrying within one year after college graduation than males. Females report that they need more information about occupations and their requisite education than males, yet they are further along in their career planning than males.

Friends

Females at this age, on the average, are capable of more mature interpersonal relationships and desire more intimacy in personal relationships than males of the same age. They report, in comparison

to males, that acquaintances, peer relationships, community participation, social activities, getting along with others, and friends have greater importance to them.

Extra-curricular Involvement

More importance is placed on involvement in campus life, activities, and leadership by females at the freshman level than by freshman males.

Areas of Interest

Females place more importance on cultural interests, and participation in the humanities and social sciences than males. Males, on the other hand, are more interested, as expected, in science and both participatory and spectator sports.

The gender differences reported in the study suggest that the tasks of student development are approached differently by males than by females. A unidimensional approach to student development that assumes male and female uniformity of interests, developmental processes and abilities would not serve the needs of either gender.

The original assumption that there would be no gender differences was based on a narrow vision that students develop. Faint suggestions of male/female developmental differences fell on deaf ears. This study should have included a review of gender issues involving adolescents and college students. The results show many traditional gender differences. How can these differences be seen in developmental, social, interpersonal and academic contexts? The results as

they have been reported are interesting, but they do not fit an empirical context that would give them meaning with regard to the academic advising of undecided students.

Post Hoc Analyses

Orientation

Subjects who completed assessment packets for this study were found to be significantly different in grade point average than students who failed to complete the packets. Mean grade point average for those completing the packets was 0.11 point higher than those who did not ($n = 1141$). Although statistically significant, this is not sufficient evidence to claim that participants and non-participants were from different populations. This may be simply a case of "everything is significant if the N is large enough."

Subjects across the eight orientation sessions and one session for undecided New Start and Summer Bridge participants did not differ in level of decidedness, gender or the level of degree sought. Significant differences were found in mean grade point average, self-reported parental income and ethnicity. Table 26 gives mean grade point averages per orientation session. The first four sessions have students with the highest mean averages; after Session 4, mean averages steadily decline.

Two simple explanations may account for the higher grade point averages in the earlier orientation sessions. First, academically successful students, in general, tend to be organized, plan ahead, and attend orientation sessions. It seems reasonable to assume that, since

orientation reservations are made on a first-come, first-serve basis, the better students would simply make reservations for the earlier sessions.

Secondly, grade point averages were, on the average, lower for Session 6 and for undecided New Start/Summer Bridge participants. The purpose of the two programs is to support the retention of previously identified at-risk populations. They would, therefore, tend to have lower grade point averages.

Parental income differed significantly between orientation sessions. Table 27 lists income means by orientation session. The parents of students who came to the first orientation session had by far the highest mean income of all the sessions. A possible explanation might be found in the percentage of out-of-state students attending the first orientation as compared to other sessions. Unfortunately, data on out-of-state students are unavailable. Differences were not significant over other sessions except Session 6 and the New Start/Summer Bridge session for undecided students. One requirement for eligibility for the Summer Bridge Program is that the students be recipients of financial aid.

Response Bias

Winston and Miller (1987) recommended that researchers discard SDTLI inventories with a Response Bias score of three or greater. Table 30 gives the frequencies of each possible Response Bias score. They based this suggestion on the rationale that they had found significant differences on SDTLI scale and subscale scores:

1) between subjects who scored 2 through 5 on the Response Bias scale and those who scored 0 or 1; and 2) among subjects who scored 3, 4 or 5 on the Response Bias scale. Subjects scoring high on this scale were "attempting to project an inflated or unrealistically favorable self-portrait" (Winston and Miller, 1987, p. 10). In other words, they were attempting to "fake good."

In the present study inventories of subjects who scored 3, 4 or 5 were not omitted because of the possibility of other explanations for their scores than response bias. Two questions must be addressed in the justification of the inclusion of high "response bias" instruments: 1) Does inclusion of these instruments (6.9% of the total number of instruments) bias the results?, and 2) Are there other possible explanations for the relationship between the Response Bias scale and the significant variables?

To address the first question, out of sixty-eight variables, significance was found on two of the SDTLI scales, and, consequently, six of the subscales. No significant difference was found between response bias scores and either the CDP or CDP scales or subscales. Several single-question variables showed significant difference on Response Bias scores (see Table 31 for details).

Winston and Miller (1987) reported that 3-5% of their subjects scored 1 or 2 on the Response Bias scale and only 1% scored 3 or higher. Table 30 shows that in the present study 35.0% scored 1 or 2 and 6.9% scored 3 or higher. Since the present study yielded high Response Bias scores for a large number of subjects, the question arises, are the test results of the present study biased. Clearly,

there is a bias of some sort. They are not biased, however, by the fact that the Response Bias scores indicate bias according to Winston and Miller (1987). They are biased because students in this study are expressing a developmental bias which seeks to impress others, to convince themselves that they are mature and competent individuals, to put themselves forth in a favorable light so that they will be liked by others, approved of by others, and, most of all, so that they can approve of themselves.

The second question may be addressed in several ways. First, the validity coefficient for the Response Bias scale was the lowest (.50) of all SDTLI subscales, with the exception of Cultural Participation (.45). Therefore, classification of response bias is correct only 25% of the time. There is, therefore, some question that the Response Bias questions are actually measuring response bias. On the merit of face validity, the scale seems to be beyond question.

Secondly, it is important to note that many students, who are beginning their "young adult" stage of development, are dualistic thinkers (Perry, 1970). The Response Bias questions are as follows:

5. I never make errors in classwork.
73. I like everyone I know.
99. I never get angry.
129. I never say things I shouldn't.
137. I never lie.

Absolute statements such as these are not uncommon in students between the ages of 17 and 23 (Perry, 1970). It is plausible that many students could pick two or three of these responses. When examining

differences between SDTLI scores and Response Bias scores, it is interesting to note that, in this study, significance was found more often between subjects who had a Response Bias score of 2 than those who scored 3 or higher. To interpret absolute responses as "faking good" takes into account neither the cognitive developmental stage of the respondents, nor the fact that students at this age may very well be putting themselves forth in the best possible light as they search for and clarify their own identity.

Thirdly, of the scales and subscales that demonstrated significant differences on the Response Bias scores (see Table 32), there is an interesting split in the direction of the scale and subscale scores. This brings into question the notion that high Response Bias scores mean that students are "faking good." Means on the Purpose scale steadily increase, with the exception of those who score 0 and 1, as the Response Bias scores increase. This increase is reflected in the three significant Purpose subscales: Educational Involvement, Career Planning and Cultural Participation. The students with high Response Bias scores are putting themselves forth in a good light. They want to appear, either consciously or unconsciously, as if they know what they are doing, have a strong sense of direction, are involved in their own education and have made progress in their career planning. This need to "look good" is indeed a bias. They may truly believe they are confident, self-assured, mature, knowledgeable and cultured.

The real story, the "why," is found in the second set of significant results. The Mature Interpersonal Relationship scale,

and its three subscales, have means in the reverse direction of those who would be trying to "fake good." The MIR subscales that showed an effect of response bias were Peer Relationships, Emotional Autonomy and Tolerance.

Subjects with scores of 3, 4, or 5 score lower on Peer Relationships than those who score 0, 1, or 2. Low scorers indicate that it is important to be liked by everyone; that they are not always honest with friends; that it is important that others accept their point of view; that relationships with close friends are not as important as a year ago; that they are afraid of hurting people's feelings; that they have difficulty dealing with people in authority; and that they avoid people with whom they have had strong disagreements. One interpretation of low scorers on the Peer Relationship scale might be that they are pleasers, that they want to "look good" to themselves and others (Drum, 1980).

Students with higher Response Bias scores had lower Emotional Autonomy scores, which reflects a need to seek and follow parental direction. These students are admitting that they are unsure of themselves, afraid of getting poor grades, and wary of disapproval and unknown outcomes. They seem to seek out certainty, agreement, and solid, known solutions. This profile of the low scorer on Emotional Autonomy indicates that those who got the higher Response Bias scores were at a lower developmental level than those who had the lower Response Bias scores.

In the same vein, Response Bias high scorers scored lower on the SDTLI Tolerance subscale. They are for the most part more

intolerant of others; they are annoyed by people speaking languages they don't understand; they avoid situations where they would be outnumbered by other ethnic groups; they make racial or cultural slurs; and they want to room with someone who is of their own race or ethnicity. Dualistic thinkers also tend to be very intolerant of individual differences and people that are unlike themselves (Drum, 1980; Perry, 1970).

The Response Bias score is more than likely driven more by the developmental level and dualistic thinking processes of the adolescent/young adult than by actual experimental response bias. Students are not faking, but since they are unclear in terms of their identity, they may have "inflated" their knowledge of themselves and the world of majors and careers. They may actually believe they are well-developed. The clue to their level of development is their need for approval, their dependence on others and their external locus of control. Omitting instruments of students with high response bias scores or attributing their responses to "faking" may remove valuable information about this early stage of young adult development.

Titley and Titley (1980), when discussing level of decidedness in college students, suggested that investigators would be wise to differentiate behavioral decidedness from subjective decidedness, i.e., what students do to show they are decided as opposed to how they feel. Level of development is another dimension that lends itself to a behavioral/subjective differentiation. What students report that they do or know (behavior) may be quite different from how they

actually feel about themselves (subjective). They may "make all the right noises" about being autonomous, self-assured, mature; they even may have accomplished certain developmental tasks to show that they are; but they still need support and approval. This transition between doing and feeling may have been exposed by the Response Bias scores. Further research is needed.

Career Decision Profile Validation Estimates

Validity estimates given in Tables 32 and 33 offer some substantial support for Jones' (1988) Career Decision Profile. Osipow, Carney, and Barak's (1976) Career Decision Scale is a substantially validated career indecision instrument and may be used in this study as a criterion measure for validation of the CDP. The overall validation coefficient of .286 between CDP and CDS may not be fair, as it is a comparison of total scores on both instruments. Neither instrument was designed to be summed. The most convincing support for CDP is the validation coefficient between CDP Decidedness scale and CDS certainty (.63), as it should be. These two instruments ask approximately identical questions. The Comfort scale also gains support from the CDS Certainty scale (.54), as it should, because of the use of the word "comfort" in the Certainty scale questions. Appendix H shows the wording of the questions on the three scales. The Decidedness and Comfort scales also highly correlate with other questions that indicate level of decidedness about majors and careers (see Table 33).

The validity of the Reasons dimension (Total scale) of the CDP finds moderate support (0.49) when compared to the CDS Indecision scale. The CDP subscales have moderate to low correlations with the Indecision scale. As measures of relationship, the coefficients are statistically significant. However, as validation coefficients, the highest percentage of variance accounted for is 24% by the Total CDP scale. Close examination of the items on the CDP as compared to the CDS suggests that they are not measuring the same constructs. The subscales that most closely approximate CDS questions about career indecision are Matching Self with a Career (-0.41) and Occupational-Educational Information (-0.38); and they have the highest overall correlations with the CDS of the subscales.

Validation support for the CDP is inconclusive. Some support has been demonstrated, although the present study was not designed as a validation study. Instruments and variables were not chosen with validation in mind. The match between CDP scales and subscales is not accurate enough to condemn it on grounds of lack of validation support. It has potential as a strong instrument for investigating major and career indecision in college students. It addresses six areas that are significant factors in advising undecided students. The strongest support that this study can offer for the validation of the Career Decision Profile is that five of its subscales (Comfort, Decisiveness, Choice-Work Importance, Self-Clarity and Occupational-Educational Information) were significant predictors of levels of decidedness in real, live college students!

Limitations of the Study

The study has several limitations having to do with sampling procedures, collection of data, response bias, experimental procedures, validity and reliability of assessment instruments, and generalizability.

Sampling

Three issues of the sampling procedures call into question the ability to generalize results to the population of all college students. First, the data were collected from college students participating in summer orientation programs. The results of this study may or may not be generalizable to non-participants in orientation. Secondly, 50% of all orientation participants attended orientation in August. In general, August participants are late applicants to the university; June and July participants applied before April. It has been suggested that there may be fundamental differences in high school aptitude and achievement between students who wait until August to attend orientation and those who participate early in the summer.

Third, as has been mentioned earlier, students at a summer orientation may more closely resemble high school students than students who are living on campus and have begun college classwork. Ideally, the SDTLI should be given to freshmen at about the eighth to tenth week of classes in the fall semester. It should be given to all students; those who participated in orientation and those who did not.

Collection of Data

During summer orientation students are allowed to register for fall classes. There was general concern among study subjects that participation in the hour-long assessment might delay their registration process. It is possible that those who failed to complete the SDTLI were from a different population of students than those who persevered to the end. To test the possibility of this effect, a one-way analysis of variance checked for differences between the groups of those who did and did not persevere in finishing the SDTLI.

The two sets of assessment packets made the data collection too lengthy. Students tired of filling in answers. The collection of data for three assessment instruments was too ambitious and the information gathered was not totally useful. A reorganization of the data sought would include the SDTLI and the CDP, since they contain the most useful subscales for the classification of levels of decidedness. Only a few significant single-question variables would be used. Data collection would not be scheduled during fall orientation, but arrangements would be made for data collection in core general education classes in the fall. Students are much more likely to participate in a study when they can miss class rather than when they are worried about class selection. Ideally, if student development were truly administratively supported, assessment of level of development and the accompanying developmental advising would be deemed as important as placement tests, and would, therefore, be required of all students.

Procedures

Assessment instruments were uniformly arranged in Packet One. The possibility of an order effect is a weakness in the study and could have been avoided by randomly organizing the instruments.

One limitation of the study is that several variables, particularly parents' income and level of mother's and father's education, were self-reported. Accuracy of the report cannot be verified, and any effects involving these two variables are, therefore, inconclusive.

Reliability and Validity of Instruments

The Career Decision Profile is a newly revised assessment measure that has specious validation corroboration. Jones (1988) primarily tested the validity of the new CDP with the Vocational Decision Scale and based his conclusions on the former validation results of the VDS. This is something akin to saying that a grapefruit must taste like a lemon because it is yellow.

During the writing of the concluding chapter, Dr. Lawrence K. Jones sent the investigator of this study a newly revised and published version of the Career Decision Profile. His editors also addressed his approach to validation, and, after additional studies, the validity of the new instrument is consistent with the earlier, unpublished study.

Jones (1988) notes that the test-retest correlation for the Decidedness scale of the CDP was undesirably low (0.66). He suggests that the construct of career indecision is not stable, and that low test-retest correlations may be more of a reflection of the instability of the construct than the invalidity of the measurement instrument.

Since none of the instruments measuring decidedness were given in a test-retest context, this study can neither support nor refute Jones' suggestion. Interpretation of results must, however, take into account the possibility that low correlations between undecidedness measures may be a reflection of the instability of the construct even within a single-setting assessment situation.

To test for stability of the construct decidedness within the present study, correlations were examined for each of three decidedness measures given in the following order: 1) the grouping question; 2) the CDS Certainty scale; and 3) the CDP Decidedness scale. Table 32 gives the correlation matrix of these three variables. For the purpose of this study, based on the correlations, the construct is considered stable, and the decidedness measures reliable and valid. But experience and research confirm that several hours, days or weeks might yield very different results to the question, "Are you decided or undecided?"

Items on the Initial and the Student Questionnaires have no validation history. Their correlation with other variables, scales and subscales must be interpreted solely on the basis of the face validity of each individual item.

Generalizability

Two questions arise if results of this study are to be generalized to all college freshmen. First, it is believed that the mean grade point average for students who attend June orientations is higher than that of the entire entering freshman class. Do the students in the study who have a higher mean grade point average yield

different results than a group of students who have lower grade point averages? In future studies, this would bear investigation.

The second question is raised by orientation personnel and academic advisors who work closely with students at the June and August orientations. They suggest that freshmen may be categorized into three specific groups: those who attend June orientation sessions, those who attend orientation in August, and those who do not attend orientation. A general perception is that many of the better students attend orientations in June, while students who are not completely committed to college, who chose to apply late, who have not planned ahead, or who do not have solid educational goals attend in August. The latter students may be lower scorers on many of the SDTLI Purpose scale, indicating a lower level of development for the group as a whole. These students may be poorer students academically and attrition risks. Since the cost of the August orientation is considerably lower than the one in June, lower income students, which would include a larger minority representation, would attend in August. There are no perceptions about non-attenders. There is no current research comparing these three groups. Some very important information could be gleaned from looking at these groups of students from the standpoint of differences in developmental level, differences in retention, and, most importantly, the relationship between development and retention.

Conclusions

The following conclusions may be drawn from this study:

1. An essential consideration in moving a student toward a major or career choice is the student's level of development as expressed by the completion of certain developmental tasks.
2. Since a relationship between decidedness and retention has been clearly demonstrated in the literature, the relationship shown in this study between decidedness and development strongly suggests a relationship between development and retention.
3. Self-reported level of decidedness is not a reliable indicator of the degree to which a student has completed important developmental tasks. Therefore, undecided students should not be assumed to be underdeveloped; neither should decided students be assumed to be developmentally mature.

Recommendations

Vincent Tinto, in Leaving College (1987), suggests many actions that could be taken by institutions of higher education to retain more students. However, the actual programs were not the important factors in student retention; rather, it was the underlying principles that inspired the programs. According to Tinto (1987, p. 187), the two most important principles of successful retention programs were "a concern for the education of students and their integration as full members in the social and intellectual life of the institution."

If institutions are to be successful in retaining students, certain actions must take place to testify that the above principles

are in reality practiced (Tinto, 1987). The importance of four of these institutional actions are reinforced by the results of the present study.

1. "Institutions should start as early as possible to retain students" (Tinto, 1987, p. 139).

This study indicates that before entering college, many students fear failure and entertain the possibility of transferring or "stopping out" for a period of time. Many lack the know-how to become involved in their own education, and their lack of life management skills increases the risk of academic failure. Tinto (1987) marks the first semester of freshman year as a very critical period because the incidence of withdrawal is highest during this semester.

Many universities are reporting exceptional success in student retention by instituting a required freshman experience course (Fidler, et al., 1978; Fidler, 1987; Hopson, 1978; Smitheram, 1986). A "University 101"-type course is designed to offer entering freshmen a set of experiences that acquaint them with their own developmental processes, teach life and college survival skills, and aid them in completing certain developmental tasks. The success of such a course is testimony to the commitment of those institutions to total student development.

2. "Institutions should ensure that new students enter with or have the opportunity to acquire the skills needed for academic success" (Tinto, 1987, p. 138).

Students who are admitted to the university may or may not have the skills to insure academic success. Generally, the referent

"skills" are mathematics, reading and writing. If an institution is committed to total student development, the "concern for the education of students" should extend beyond the three R's. This study has demonstrated the diverse levels and abilities of students--male and female, decided and undecided--prior to entering the university. The acquisition of "skills needed for academic success" must include many of the developmental tasks assessed in this study. Therefore, this study strongly recommends future investigation into the relationship between level of student development, as measured by completion of developmental tasks, and student retention.

3. "Institutions should reach out to make personal contact with students beyond the formal domains of academic life" (Tinto, 1987, p. 139).

This study shows the necessity of making personal contact with students within the formal domains of academic life. One of the strongest and most helpful contacts that the institution can make with its students is through the services of developmental advising. An advisor who is trained in developmental theory and the processes of student development educates students by teaching them the steps of their development, encourages the completion of developmental tasks and facilitates the information-gathering process necessary for major and career exploration. Virginia Gordon (1988) divided students' advising needs into two useful categories: need for information and need for personal support. The developmental advisor provides both. Therefore, this study strongly recommends instituting developmental

advising at both college and department levels. If students are to complete their college careers successfully, there must be a collaborative effort between student and advisor wherein both work toward the "education" and well-being of the student--to meet not just the "intellectual," but the total needs of the student.

4. "Education, not retention, should be the goal of institutional retention programs" (Tinto, 1987, p. 140).

The findings of this study lead the writer to recommend that full-scale research be conducted in the area of student development. How can an institution truly say that it educates its students if it knows little or nothing about students? Student development research would serve two important purposes: a) it would offer empirical data on students' developmental processes at the college level, and b) it would promote student development.

This study has shown a direct relationship between levels of development and decidedness. Since, according to past retention studies (Chase and Keene, 1981; Foote, 1980; Titley and Titley, 1980; Titley, et al., 1976), decided students are more likely to be retained than undecided students, it follows that there is an important relationship between level of development and retention. By taking a developmental approach to all student programs and services, universities will retain more students.

Since a student's self-classification into a level of decidedness is inaccurate at least 29% of the time, this study recommends that assessment of students' developmental level be required.

University personnel trained in student developmental theory and methods should advise students. Programs that foster understanding and completion of developmental tasks should be provided at all levels of student life.

The purpose of this study was to provide research into the relationship between level of decidedness and development in college freshmen. Through discriminant function analysis, variables were identified that can be used in the classification of college students into three levels of decidedness: undecided, tentatively decided and decided. These levels of decidedness are constructs that have been defined by this study in such a way that classification of students is correct 70% of the time.

The aim of the study was not classification, but increased understanding of the nature of students' developmental processes in relationship to their having chosen or not chosen an academic major. This aim has been successful. The body of empirical research into the development of the young adult college student has been increased. More is known about the construct "undecidedness" and more factual information has been gathered on gender differences among incoming freshmen. However, the most significant revelation of this study is the unquestionable necessity of working within the context of student development when "educating" college freshmen in any capacity. It is the hope of this study's investigator that the recommendations provided by this study will not fall on deaf ears.

APPENDIX A

INITIAL (BOX) QUESTIONNAIRE

Name	_____
SID #	_____
Check appropriate box:	
<input type="checkbox"/>	I have a Major _____ (fill in)
<input type="checkbox"/>	I am Undecided
<input type="checkbox"/>	I am a Pre-med Undecided

If appropriate, check one of the following:

___ I am participating in Summer Bridge.

___ I am participating in New Start.

Check which one of the following statements comes closest to the degree of certainty you feel about your major selection:

- a) I'm really totally undecided
- b) Not certain; I'm somewhat undecided
- c) I think this is what I want, but I might change
- d) Quite certain; doubt if I'll change
- e) Absolutely certain I'll graduate in this major

Check which one of the following statements comes closest to the degree of certainty you feel about your career choice:

- a) I'm really totally undecided
- b) Not certain; I'm somewhat undecided
- c) I think I know what I want, but I might change
- d) Quite certain; doubt if I'll change
- e) Absolutely certain I'll pursue my present choice of careers.

Why are you attending the university? (Check the one which most applies to you)

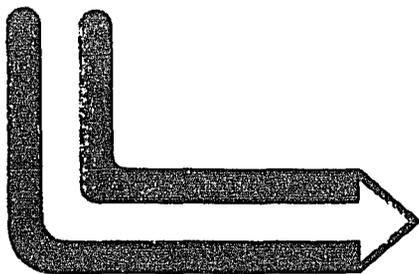
- a) To prepare for an occupation
 - b) To become an educated person
 - c) Because my parents expect it
 - d) Because of the social opportunities
 - e) Because my friends are
 - f) To find myself
 - g) Other (please specify) _____
-

Mark one for each item:

- a) Very good chance
- b) Some chance
- c) Very little chance
- d) No chance

- | a | b | c | d | |
|-----|-----|-----|-----|---|
| [] | [] | [] | [] | --Change your major field? |
| [] | [] | [] | [] | --Change your career choice? |
| [] | [] | [] | [] | --Fail one or more courses? |
| [] | [] | [] | [] | --Graduate with honors? |
| [] | [] | [] | [] | --Make at least a "B" average? |
| [] | [] | [] | [] | --Have to work at an outside job while in school? |
| [] | [] | [] | [] | --Get a bachelor's degree (B.A., B.S. etc.) |
| [] | [] | [] | [] | --Drop out of college temporarily (excluding transferring)? |
| [] | [] | [] | [] | --Transfer to another college? |
| [] | [] | [] | [] | --Drop out permanently? |
| [] | [] | [] | [] | --Be satisfied with your college? |
| [] | [] | [] | [] | --Find a job after college in the field for which you were trained? |
| [] | [] | [] | [] | --Get married while in college? (Skip if married) |
| [] | [] | [] | [] | --Get married within a year after college? (Skip if married) |

APPENDIX B
CAREER DECISION SCALE



CAREER DECISION SCALE

THIRD REVISION (1976)

by Samuel H. Osipow, Clarke G. Carney, Jane Winer,
Barbara Yanico, and Maryanne Koschier

NAME _____

DATE OF BIRTH _____ AGE _____

CLASS/GRADE _____ SEX _____

This questionnaire contains some statements that people commonly make about their educational and occupational plans. Some of the statements may apply to you; others may not. Please read through them and indicate how closely each item describes you in your thinking about a career or an educational choice by *circling* the appropriate number on the answer sheet. An example is given below:

	Exactly like me	Very much like me	Only slightly like me	Not at all like me
I am excited about graduating and going to work.	4	3	2	1

If you are excited about going to work and feel no hesitation about it you would circle "4" to indicate that the description is exactly the way you feel. If the item is very close, but not exactly the way you feel — for example, you're generally excited about going to work after you graduate, but are experiencing some minor concerns about it — you would circle the number "3." You would circle "2" if the item describes you in some ways, but in general it is more unlike than like your feelings; for example, if you are generally more concerned than excited about work after graduation. Finally, you would circle "1" if the item does not describe your feelings at all; that is, you are experiencing a great deal of concern and no excitement about graduation and work.

Please be sure to give only *one* response to each item and answer *every* item.

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1 2 3 4 5 6 7 8 9

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REMEMBER — 4 is *exactly like me*, 3 is *very much like me*, 2 is *only slightly like me*, and 1 is *not at all like me*.

	CIRCLE ANSWER			
	Like Me		Not Like Me	
1. I have decided on a career and feel comfortable with it. I also know how to go about implementing my choice.	4	3	2	1
2. I have decided on a major and feel comfortable with it. I also know how to go about implementing my choice.	4	3	2	1
3. If I had the skills or the opportunity, I know I would be a _____ but this choice is really not possible for me. I haven't given much consideration to any other alternatives, however.	4	3	2	1
4. Several careers have equal appeal to me. I'm having a difficult time deciding among them.	4	3	2	1
5. I know I will have to go to work eventually, but none of the careers I know about appeal to me.	4	3	2	1
6. I'd like to be a _____, but I'd be going against the wishes of someone who is important to me if I did so. Because of this, it's difficult for me to make a career decision right now. I hope I can find a way to please them and myself.	4	3	2	1
7. Until now, I haven't given much thought to choosing a career. I feel lost when I think about it because I haven't had many experiences in making decisions on my own and I don't have enough information to make a career decision right now.	4	3	2	1
8. I feel discouraged because everything about choosing a career seems so "ifly" and uncertain; I feel discouraged, so much so that I'd like to put off making a decision for the time being.	4	3	2	1
9. I thought I knew what I wanted for a career, but recently I found out that it wouldn't be possible for me to pursue it. Now I've got to start looking for other possible careers.	4	3	2	1
10. I want to be absolutely certain that my career choice is the "right" one, but none of the careers I know about seem ideal for me.	4	3	2	1
11. Having to make a career decision bothers me. I'd like to make a decision quickly and get it over with. I wish I could take a test that would tell me what kind of career I should pursue.	4	3	2	1
12. I know what I'd like to major in, but I don't know what careers it can lead to that would satisfy me.	4	3	2	1

REMEMBER — 4 is *exactly like me*, 3 is *very much like me*, 2 is *only slightly like me*, and 1 is *not at all like me*.

- | | CIRCLE ANSWER | | | |
|--|---------------|-------------|---|---|
| | Like Me | Not Like Me | | |
| 13. I can't make a career choice right now because I don't know what my abilities are. | 4 | 3 | 2 | 1 |
| 14. I don't know what my interests are. A few things "turn me on" but I'm not certain that they are related in any way to my career possibilities. | 4 | 3 | 2 | 1 |
| 15. So many things interest me and I know I have the ability to do well regardless of what career I choose. It's hard for me to find just one thing that I would want as a career. | 4 | 3 | 2 | 1 |
| 16. I have decided on a career, but I'm not certain how to go about implementing my choice. What do I need to become a _____ anyway? | 4 | 3 | 2 | 1 |
| 17. I need more information about what different occupations are like before I can make a career decision. | 4 | 3 | 2 | 1 |
| 18. I think I know what to major in, but I feel I need some additional support for it as a choice for myself. | 4 | 3 | 2 | 1 |

19. None of the above items describe me. The following would describe me better: (write your response below).

	Total 1-2	Total 3-18	Normative Group	% ile
Cer				
Ind				

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APPENDIX C

CAREER DECISION PROFILE

Career Decision Profile

Name _____ Date _____

Directions: This inventory is designed to help you think about your career choice. You will consider:

- a. How decided you are,
- b. How comfortable you are with your decision, and
- c. Your career decision needs.

There are no right or wrong answers. Just give the answer that best fits you. Do not spend too much time on each statement.

Decidedness

Have you decided on an occupation? How certain are you? Think about it for a moment.

Now indicate with a check mark (✓) below, how much you agree with the following statements:

1. I have an occupational field in mind that I want to work in (for example, medicine, agriculture, management, or the performing arts).
 Strongly Disagree $\frac{\quad}{1}$: $\frac{\quad}{2}$: $\frac{\quad}{3}$: $\frac{\quad}{4}$: $\frac{\quad}{5}$: $\frac{\quad}{6}$: $\frac{\quad}{7}$: $\frac{\quad}{8}$ Strongly Agree _____
2. I have decided on the occupation I want to enter (for example, electrical engineer, nurse, or cook).
 Strongly Disagree $\frac{\quad}{1}$: $\frac{\quad}{2}$: $\frac{\quad}{3}$: $\frac{\quad}{4}$: $\frac{\quad}{5}$: $\frac{\quad}{6}$: $\frac{\quad}{7}$: $\frac{\quad}{8}$ Strongly Agree _____

Comfort

Now that you have indicated how decided you are, how do you *feel* about where you are in the process of making a choice?

3. I feel at ease and comfortable with where I am in making a vocational decision.
 Strongly Disagree $\frac{\quad}{1}$: $\frac{\quad}{2}$: $\frac{\quad}{3}$: $\frac{\quad}{4}$: $\frac{\quad}{5}$: $\frac{\quad}{6}$: $\frac{\quad}{7}$: $\frac{\quad}{8}$ Strongly Agree _____
4. I'm not worried about my career choice.
 Strongly Disagree $\frac{\quad}{1}$: $\frac{\quad}{2}$: $\frac{\quad}{3}$: $\frac{\quad}{4}$: $\frac{\quad}{5}$: $\frac{\quad}{6}$: $\frac{\quad}{7}$: $\frac{\quad}{8}$ Strongly Agree _____

When you have finished, please turn the page.

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Decisiveness

14. I feel relieved if someone else makes a decision for me.

Strongly Disagree : : : : : : : Strongly Agree
 1 2 3 4 5 6 7 8

15. I am an indecisive person; I delay deciding and have difficulty making up my mind.

Strongly Disagree : : : : : : : Strongly Agree
 1 2 3 4 5 6 7 8

16. I frequently have difficulty making decisions.

Strongly Disagree : : : : : : : Strongly Agree
 1 2 3 4 5 6 7 8



Choice-Work Importance

17. I don't need to make a vocational choice at this time.

Strongly Disagree : : : : : : : Strongly Agree
 1 2 3 4 5 6 7 8

18. My future work or career is not that important to me right now.

Strongly Disagree : : : : : : : Strongly Agree
 1 2 3 4 5 6 7 8



19. I don't have strong interests in any occupational field.

Strongly Disagree : : : : : : : Strongly Agree
 1 2 3 4 5 6 7 8

Other Factors

Are there any other factors that are important in understanding your situation? Please write them here:

When you are finished, please turn to the next page.

Scoring

Now go back to the first page, to the section called "Decidedness." Find statement #1 and write the number beneath your check mark on the line in the right hand margin. An example is shown below:

Strongly Disagree $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ $\frac{\quad}{8}$ Strongly Agree

Do the same thing for the other statement in this section, statement #2. Then, add the numbers for these statements together, and write the sum in the small box you see in the right hand margin.

In the same way, carefully score the "Comfort" section. Then, score the remaining sections on pages 2 and 3. And, finally, write down your scores for each section in the boxes below:

Decidedness

Your scores may range from 2 to 16. The higher your score the more decided you are about your career choice.

Comfort

Your scores may range from 2 to 16. The higher your score the more comfortable you are about your progress in making a career choice.

Career Decision Needs:

Your scores may vary from 3 to 24 for each area. The higher your score, the greater your need for assistance in that area.

*Matching Self
with a Career*

Self-Clarity

*Occupational-
Educational
Information*

Decisiveness

*Choice-Work
Importance*

APPENDIX D
STUDENT QUESTIONNAIRE

8. Is this college your: (Check one)

- First choice?
 Second choice?
 Third choice?
 Less than third choice?

9. What is your best estimate of your parents' total income last year?
 Consider income from all sources before taxes. (Check one)

- | | |
|---|--|
| <input type="checkbox"/> Less than \$6000 | <input type="checkbox"/> \$35,000-39,999 |
| <input type="checkbox"/> \$6,000-9,999 | <input type="checkbox"/> \$40,000-49,999 |
| <input type="checkbox"/> \$10,000-14,999 | <input type="checkbox"/> \$50,000-59,999 |
| <input type="checkbox"/> \$15,000-19,999 | <input type="checkbox"/> \$60,000-74,999 |
| <input type="checkbox"/> \$20,000-24,999 | <input type="checkbox"/> \$75,000-99,999 |
| <input type="checkbox"/> \$25,000-29,999 | <input type="checkbox"/> 100,000-149,999 |
| <input type="checkbox"/> \$30,000-39,999 | <input type="checkbox"/> 150,000 or more |

10. What is the highest level of formal education obtained by your parents? (Check one in each column)

	Mother	Father
Grammar school or less	[]	[]
Some high school	[]	[]
High school graduate	[]	[]
Postsecondary school other than college	[]	[]
Some college	[]	[]
College degree	[]	[]
Some graduate school	[]	[]
Master's degree	[]	[]
Doctoral degree	[]	[]

11. Are you receiving financial aid? Please check appropriate types.

- Scholarship
 Student loan
 Grant
 Work study

Student Goals Section

12. Listed below are several possible educational goals you may have for yourself to achieve during college. Please indicate how important each of these are to you by checking the appropriate space for each item.

Academic goals

How important is it to you....

a. To complete courses necessary to transfer to another college

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
not	moderately	important	very
important	important		important

b. To understand the nature of the natural and physical sciences (e.g., botany, ecology, chemistry, physics)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
not	moderately	important	very
important	important		important

c. To understand humanities (e.g., history, philosophy, art, languages, literature)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
not	moderately	important	very
important	important		important

d. To understand the social sciences (e.g., economics, political sciences, psychology, sociology)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
not	moderately	important	very
important	important		important

e. To acquire skills for self-directed learning (be able to learn about a subject on my own)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
not	moderately	important	very
important	important		important

How important is it to you... (cont.)

- | | | | | |
|---|------------------|-------------------------|-----------|-------------------|
| f. To develop effective verbal communication | not
important | moderately
important | important | very
important |
| g. To develop an understanding for cultural things (art, music, drama, literature) | not
important | moderately
important | important | very
important |
| h. To get high grades to get into medical school, law school, graduate school, etc. | not
important | moderately
important | important | very
important |

Vocational goals

How important is it to you....

- | | | | | |
|--|------------------|-------------------------|-----------|-------------------|
| i. To discover my vocational interests | not
important | moderately
important | important | very
important |
| j. To prepare for a first time job | not
important | moderately
important | important | very
important |
| k. To improve my knowledge and skills required in my present job | not
important | moderately
important | important | very
important |
| l. To increase my chances for promotion and/or raise at my present job | not
important | moderately
important | important | very
important |
| m. To explore career opportunities | not
important | moderately
important | important | very
important |

Personal goals

How important is it to you....

n. To improve my self-confidence	not important	moderately important	important	very important
o. To improve my ability to get along with people	not important	moderately important	important	very important
p. To become actively involved in student life and campus activities	not important	moderately important	important	very important
q. To improve my leadership skills	not important	moderately important	important	very important
r. To get well acquainted with other students	not important	moderately important	important	very important
s. To participate in inter- collegiate athletics	not important	moderately important	important	very important
t. To become involved in one or more student activities	not important	moderately important	important	very important
u. To be involved in intramural athletics	not important	moderately important	important	very important
v. To develop social skills for interpersonal relationships	not important	moderately important	important	very important
w. To participate in political or social reform or change movements	not important	moderately important	important	very important

How important is it to you.... (cont.)

x. To develop lasting friendships

not
important
 moderately
important
 important
 very
important

13. From the above list of goals (a-x), select the three most important goals and write those letters in the space provided below.

Most important goal _____

2nd most important goal _____

3rd most important goal _____

Special Education Assistance and Needs Section

14. This section presents areas where you may need assistance.

Please indicate those areas you need help in or are interested in by checking the "yes" space.

If you are not interested in these activities, check the "no" space.

	Yes	No
a) I need help deciding on my educational plans	[]	[]
b) I need help deciding on my occupational plans	[]	[]
c) I need help in improving my reading speed and comprehension	[]	[]
d) I need help in expressing my ideas in writing	[]	[]
e) I need help in improving my study skills	[]	[]
f) I need help in improving my mathematical skills	[]	[]
g) I would like help with personal concerns	[]	[]
h) I need help in expressing my ideas by speaking	[]	[]
i) I need help in reducing my anxiety before/during exam	[]	[]

15. What kind of help would benefit you most in deciding on a major or occupation? (Check as many as apply to you)

- [] a) Information sessions with faculty about various majors
- [] b) Information sessions with workers about various careers
- [] c) Career-planning classes to help me explore various options
- [] d) Tests to help me find out what I'm interested in
- [] e) Information sessions on employment opportunities
- [] f) Talking with a career counselor
- [] g) Actual field experience in a career area
- [] h) Other (please specify) _____

APPENDIX E

STUDENT DEVELOPMENTAL TASK
AND LIFESTYLE INVENTORY

FORM W-87

Student Developmental Task and Lifestyle Inventory

Roger B. Winston, Jr., Ph. D.
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About the Student Developmental Task and Lifestyle Inventory

The *Student Developmental Task and Lifestyle Inventory* (SDTLI) is composed of statements shown to be typical of many students and is designed to collect information concerning college students' activities, feelings, attitudes, aspirations, and relationships. Do not be concerned, however, if there are some statements about activities in which you do not participate, or feelings which are not descriptive of you. This Inventory's purposes are to help students learn more about themselves and to help colleges assist students more effectively. The SDTLI's usefulness depends entirely on the honesty, candor, and care with which you answer the questions.

It will require only about 25 to 35 minutes for you to complete this Inventory.

DIRECTIONS

1. Do not mark in this booklet. Mark all answers on the separate answer sheet provided.
2. In this Inventory "college" is used in a general sense to apply to both two- and four-year colleges, as well as universities (that is, all kinds of post-secondary institutions).
3. Consider each statement carefully, but do not spend a great deal of time deliberating on a single statement.
4. Read each statement (beginning on page 1) and decide whether the statement is **true** (usually true) of you, or **false** (not usually true) of you. If *true*, circle the T; if *false*, circle the F. In a few instances in Section 1 there is a third alternative "O"; for those items **only**, you may circle the "O" response if it describes you better than either a true or false response would.
5. If you wish to *change an answer* after having marked it, do not attempt to erase it. Instead, with your pen or pencil completely darken the circle made around the T, F or O [whichever had been *mistakenly* circled], then draw a circle around the response that best describes you.

EXAMPLES

141. T F O *Student selected the true response as being most descriptive of him or her.*
141. T F O *Student made a mistake and wants to record a false response instead of true response as being the most descriptive of him or her.*
141. T F O *Student selected the "other" response as best describing him or her.*
6. Please begin by writing your name and the name of the college or university you are attending at the top of the answer sheet and then answer the demographic questions under it. After answering the demographic questions, begin the Inventory on page 2.

Student Developmental Task and Lifestyle Inventory

SECTION 1. EDUCATION, CAREER, AND LIFESTYLE. From the alternatives provided select the one response that **best** describes you. Mark your responses on the separate answer sheet provided.

Circle **T** if the statement is *true* or usually true of you, or **F** if the statement is *false* or usually not true of you. For some statements there will be a third alternative, when that is possible the **O** alternative will be listed after the statement. Circle the **O** alternative only if it is listed after the statement and it best describes you.

Before beginning, be sure that you have read and understand the instructions about how to change a response (should you need to do so) once it is marked. The directions for changing a response are in the **Directions** section on the previous page.

1. I have declared my academic major/ field of academic concentration.
2. I am familiar with three or more college majors and their requirements in terms of required courses and their accompanying academic skills.
3. I know where to find information about the prospects for employment in any occupational field.
4. Within the past six months, I have asked relatives, faculty members, or others to describe or discuss positions available in the fields in which they are working.
5. I never make errors in classwork.
6. I have carefully thought through *and* decided the extent to which I am involved in regular, organized religious activities.
7. I have one or more effective techniques (not involving alcohol or drugs) that I use to help me relieve stress.
8. Within the past year I have met my responsibilities to my parents to my own personal satisfaction.
9. I don't hesitate to seek help in dealing with the pressures of college life.
10. I keep accurate records of the money I spend.
11. I know all the basic requirements for graduating with a degree in my academic major/ academic concentration.
O = I have yet to decide on an academic major.
12. When I don't think I am learning what I should in a course, I take the initiative to do something about it.
13. I have identified some jobs within the career area I have selected which I know I would *not like* doing.
O = I have yet to decide on a postcollege career area.
14. Recently I examined the current labor market demands for people with a degree in the career area(s) I am considering.
O = I have yet to decide on a postcollege career area and/or academic major.
15. In the past year I have discussed my career goals with at least two professionals in the field that interests me most.
16. I have identified the steps that are necessary for me to take now in order to have the kind of life I want five years after college.
17. I have plenty of energy.
18. I set aside time each day to deal with schoolwork and assignments.
19. I organize my time well enough for me to get everything that needs to be done completed.
20. I make time in my schedule for my hobbies.
O = I have no hobbies.
21. I take advantage of opportunities to enter into class discussions.
22. I have taken the initiative to set up conferences with an academic advisor within the past twelve months.
23. I know at least five requirements necessary for the occupation(s) I am thinking about entering.
O = I have yet to identify an occupation in which I would like to work.
24. I have practical experience in the career area I plan to pursue after college.
O = I have yet to decide on a postcollege career area.
25. I am a member of at least one club or organization that is specifically related to my chosen occupational field.
O = I have yet to decide on a postcollege career area.
26. I have made a decision about the number of children (including none) I plan to have.
27. I am generally satisfied with my physical appearance.
28. I initiated an activity in the past month designed to help me achieve something important in my life.
29. I plan my activities to make sure that I have adequate time for sleep.
30. In my leisure time I regularly read novels or magazines.
31. I have a mature working relationship with one or more members of the academic community (faculty member, student affairs staff member, administrator).
32. Within the past twelve months I have attended a lecture or program dealing with a serious intellectual subject which was not required for any of my courses.
33. I can name two or more beginning-level positions in business, industry, government, or education for which I would be eligible when I graduate.

T = True

F = False

34. I have listed a number of specific personal abilities and limitations which I can use as guidelines for narrowing the number of career areas I wish to explore.
35. I have formulated a clear plan for getting a job after college.
36. I am currently involved in one or more activities that I have identified as being of help in determining what I will do with the rest of my life.
37. I maintain an appropriate weight for my height and frame.
38. I have joined with several people in achieving solution to a mutual problem within the past month.
39. I keep a calendar or make a "To Do" list of what needs to be done each day.
40. I am actively involved in two or more different organized activities in addition to my academic studies.
41. I have formed a personal relationship (friendly acquaintanceship) with one or more professors.
42. I have identified acceptable alternatives to my present educational plans.
43. Within the past month I have read an article or book that deals with some aspect of a career I am considering or have decided upon.
44. I have established a specific plan for gaining practical experience in the career area I plan to pursue after college.
O = I have yet to decide on a postcollege career area.
45. I have prepared my employment placement credentials and resume.
46. I have identified at least three people, other than family members, whom I am confident will be influential in my postcollege future.
47. I usually eat well-balanced meals.
48. I have been active on at least one committee at college or in one or more college groups within the past six months.
49. I manage my spending money well.
50. I have attended a play or classical music concert within the past year when not required for a class.
51. Within the past three months I have had a serious discussion with a faculty member concerning something of importance to me.
52. I have decided whether or not I will seek admission to a graduate or professional school.
53. I am acquainted with three or more persons who are actively involved in the kind of work I visualize for myself in the future.
O = I have yet to decide on a postcollege occupational area.
54. While in college I have gained practical experience directly related to my educational goals through an internship, part-time work, summer job, or similar employment.
O = I have yet to establish any specific educational goals.
55. I have one or more goals that I am committed to accomplishing and have been working on for over a year.
56. The importance I place on things like new cars, large houses, and expensive clothes is reflected in my current career plans.
57. I make sure that I get enough exercise to feel good.
58. I have identified and can list at least three ways I can be an asset to the community.
59. I followed a systematic plan in making an important decision within the past thirty days.
60. Within the past twelve months I have visited a museum or an art exhibit when not required for a class.
61. I carefully investigated the intellectual abilities and necessary academic background needed to be successful in my chosen academic major.
O = I have yet to decide on an academic major.
62. Within the past three months I have read one or more non-required publications related to my major field of study.
O = I have yet to decide on an academic major/field of study.
63. I often have trouble visualizing day-to-day work in the career area I have selected.
O = I have yet to decide on a career area.
64. I have sought out leisure time activities for the purpose of helping me obtain an indication of my career interests.
65. An outside, objective observer could readily identify the ethical values that guide my daily life.
66. I have clearly decided upon the place of marriage and children in my future.
67. I exercise vigorously for twenty minutes or more at least three times a week.
68. I have successfully completed an extended trip on my own.
69. Within the past six months I have undertaken either an independent study or service project on my own.
70. Over the past year I have participated in cultural activities on a regular basis (several times a month).
71. I have developed a financial plan for achieving my educational goals.
72. Within the past twelve months I have discussed, *in depth*, my educational objectives or plans with an academic advisor.

GO TO PAGE 4

T = True

F = False

- | | |
|--|---|
| <p>73. I like everyone I know.</p> <p>74. While in college I have visited a career center or library to get information about possible careers or detailed information about a career area I have chosen.</p> <p>75. I have followed through on nearly all my plans made during the past year.</p> | <p>76. I can state clearly my <i>plan</i> for achieving the goals I have established for the next ten years.</p> <p>77. I plan my week to make sure that I have sufficient time for physical exercise.</p> <p>78. I have made a positive contribution to my community (campus, neighborhood, or hometown) within the past three months.</p> |
|--|---|

SECTION 2. INTIMATE RELATIONSHIPS. In this section "partner" refers to *one* person with whom you now have (or have had) an intimate relationship, whether a **dating partner, spouse, or a friend with whom you are (have been) romantically involved.** Please read the following instructions carefully before responding to statements in this section.

- If you are now involved in an intimate relationship, respond to the following statements in terms of that relationship.
- If you are not currently involved in an intimate relationship, but have had one or more within the past twelve months, then respond to the statements in this section in terms of the *single most significant* of those relationships. Remember, respond in terms of the **same** relationship throughout this section.
- If you do not have a "partner" currently and have not been involved in an intimate relationship during the past twelve months, please skip this section and go to Section 3 and continue responding to statements, beginning with number 98.

T = True

F = False

- | | |
|--|---|
| <p>79. My partner and I regularly discuss or make plans on how we will spend our time together.</p> <p>80. I sometimes treat the relationship with my partner as if it were a game.</p> <p>81. Within the past twelve months I have successfully resolved a major disagreement with my partner.</p> <p>82. It is difficult for me to see my partner socialize with others who could be rivals with me for my partner's affections.</p> <p>83. I occasionally feel threatened by my partner's outside friendships (that is, with persons who are not in my circle of friends).</p> <p>84. I have helped my partner achieve a personal goal that she/he had established.</p> <p>85. I have been unable to find a partner with whom I have maintained a satisfying intimate relationship for a period of more than three months.</p> <p>86. I frequently feel as if my partner's successes are also my successes.</p> <p>87. My partner and I frequently talk about what each of us is seeking from our relationship.</p> | <p>88. I often wonder where I stand in the eyes of my partner.</p> <p>89. Almost everyday I tell my partner things that I don't tell anyone else.</p> <p>90. I am usually on guard about what I say and do around my partner in order to avoid upsetting or displeasing him/her.</p> <p>91. I expect my partner to always meet my personal needs.</p> <p>92. Sharing my innermost thoughts with my partner is the thing I value most in our relationship.</p> <p>93. There is nothing about myself that is "too bad" to tell my partner.</p> <p>94. I have little trouble relating intimately to a person when I don't care deeply about him/her.</p> <p>95. My partner and I have agreed upon the limits to be placed on our physical relationship.</p> <p>96. I tell my partner about my sexual needs and desires.</p> <p>97. My partner and I often play games with each other, such as "Mr. Cool" or "Ms. Hard-to-get."</p> |
|--|---|

SECTION 3. RELATIONSHIPS AND THE ACADEMIC ENVIRONMENT. Decide whether each of the following statements is **True** (usually true of you) or **False** (not usually true of you).

T = True

F = False

- | | |
|--|--|
| <p>98. There are some topics that should never be discussed in college classrooms.</p> <p>99. I never get angry.</p> <p>100. It sometimes bothers me if my leisure time activities are different from those of my friends.</p> | <p>101. It is important to me that I be liked by everyone.</p> <p>102. I sometimes hold back my true feelings for a friend because I'm afraid I might embarrass myself.</p> <p>103. I seldom express my opinion in groups if I think they will be controversial or different from what others believe.</p> |
|--|--|

T = True

F = False

104. I need to feel sure of the outcome before attempting something new or different.
105. I have a difficult time in courses when the instructor doesn't regularly check up on completion of assignments.
106. I frequently don't perform as well in class as I could.
107. I sometimes use phrases or words such as "Blacks have rhythm," or "Honkie," or "people on welfare are only looking for a free ride."
108. I would prefer not to room with someone who is from a different culture or race.
109. I find relationships with my close friends not as important to me as they were a year ago.
110. It is important to me that others accept my point of view.
111. Within the past year there have been a number of occasions when I was mistaken about the closeness of a relationship.
112. Before making decisions I ask my parents what I should do.
113. I am usually more concerned about the grade I will receive than about the subject matter or what I am learning.
114. It is hard for me to work intently on something for more than a short time.
115. Recently I made a poor grade in class due to my neglect or lack of prior planning.
116. I find it annoying when I hear people speaking in a language I don't understand.
117. I avoid groups where I would be of the minority race.
118. It is important to me that I meet the standards of behavior set by my friends.
119. When I want to be alone I have difficulty letting my friends know in a way that doesn't hurt their feelings.
120. Each of my *close* friends holds at least one view of life or set of personal values which I can't accept for myself.
121. I seldom bounce ideas off other people in order to obtain their views of my thinking.
122. I feel guilty when I don't obey my parents' wishes.
123. My grades are not as good as they could be because I don't like asking for help.
124. Within the past month at school or work, another person and I solved an important mutual problem.
125. I think most women tend to respond to situations emotionally, while men respond by thinking.
126. I deal with students who are different from me (for example, of another race or who speak a different language) by being polite and staying away from them as much as possible.
127. I find it hard to deal openly with college administrators and others in authority.
128. After having strong disagreements with a person, I usually try to avoid her/him as much as possible thereafter.
129. I never say things I shouldn't.
130. Sometimes I conceal some of my talents or skills so I will not be asked to contribute to a group's effort.
131. Most of the time I get bored and quit studying after working on an assignment for a short time.
132. I have difficulty disciplining myself to study when I should.
133. I generally keep my beliefs to myself in order to avoid offending others.
134. I become annoyed with people who frequently try to change the rules.
135. I try to keep my friends from knowing about my shortcomings and failures.
136. Because of my friends' urgings I sometimes get involved in things that are not in my best interest.
137. I never lie.
138. Decisions about important matters are largely based on what my parent(s) think and believe.
139. My study time often seems rushed because I fail to estimate realistically the amount of time required.
140. Within the past month I have found myself worrying about unimportant matters, which interfered with the things I wanted to do.

END OF INVENTORY

Additional copies can be obtained from



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APPENDIX F

SDTLI QUESTIONS DIVIDED
INTO SCALES AND SUBSCALES

Educational Involvement

1. I have declared my academic major/field of academic concentration.
2. I am familiar with three or more college majors and their requirements in terms of required courses and their accompanying academic skills.
11. I know all the basic requirements for graduating with a degree in my academic major/academic concentration.
12. When I don't think I am learning what I should in a course, I take the initiative to do something about it.
21. I take advantage of opportunities to enter into class discussions.
22. I have taken the initiative to set up conferences with an academic advisor within the past twelve months.
41. I have formed a personal relationship (friendly acquaintanceship) with one or more professors.
42. I have identified acceptable alternatives in my present educational plans.
51. Within the past three months I have had a serious discussion with a faculty member concerning something of importance to me.
52. I have decided whether or not I will seek admission to a graduate or professional school.
61. I carefully investigated the intellectual abilities and necessary academic background needed to be successful in my chosen academic major.
62. Within the past three months I have read one or more non-required publications related to my major field of study.
71. I have developed a financial plan for achieving my educational goals.

72. Within the past twelve months I have discussed, in depth, my educational objectives or plans with an academic advisor.

Career Planning

3. I know where to find information about the prospects for employment in any occupational field.
4. Within the past six months, I have asked relatives, faculty members, or others to describe or discuss positions available in the fields in which they are working.
13. I have identified some jobs within the career area I have selected which I know I would not like doing.
14. Recently I examined the current labor market demands for people with a degree in the career area(s) I am considering.
15. In the past year I have discussed my career goals with at least two professionals in the field that interests me most.
23. I know at least five requirements necessary for the occupation(s) I am thinking about entering.
24. I have practical experience in the career area I plan to pursue after college.
25. I am a member of at least one club or organization that is specifically related to my chosen occupational field.
34. I have listed a number of specific personal abilities and limitations which I can use as guidelines for narrowing the number of career areas I wish to explore.
35. I have formulated a clear plan for getting a job after college.
43. Within the past month I have read an article or book that deals with some aspect of a career I am considering or have decided upon.
44. I have established a specific plan for gaining practical experience in the career area I plan to pursue after college.
45. I have prepared my employment placement credentials and resume.
53. I am acquainted with three or more persons who are actively involved in the kind of work I visualize for myself in the future.
54. While in college I have gained practical experience directly related to my educational goals through an internship, part-time work, summer job, or similar employment.

63. I often have trouble visualizing day-to-day work in the career area I have selected.
64. I have sought out leisure time activities for the purpose of helping me obtain an indication of my career interests.
74. While in college I have visited a career center or library to get information about possible careers or detailed information about a career area I have chosen.

Lifestyle Planning

6. I have carefully thought through and decided the extent to which I am involved in regular, organized religious activities.
16. I have identified the steps that are necessary for me to take now in order to have the kind of life I want five years after college.
26. I have made a decision about the number of children (including none) I plan to have.
36. I am currently involved in one or more activities that I have identified as being of help in determining what I will do with the rest of my life.
46. I have identified at least three people, other than family members, whom I am confident will be influential in my post-college future.
55. I have one or more goals that I am committed to accomplishing and have been working on for over a year.
65. An outside, objective observer could readily identify the ethical values that guide my daily life.
75. I have followed through on nearly all of my plans made during the past year.
76. I can state clearly my plan for achieving the goals I have established for the next ten years.

Life Management

8. Within the past year I have met my responsibilities to my parents to my own personal satisfaction.
9. I don't hesitate to seek help in dealing with the pressures of college life.

10. I keep accurate records of the money I spend.
18. I set aside time each day to deal with schoolwork and assignments.
19. I organize my time well enough for me to get everything that needs to be done completed.
28. I initiated an activity in the past month designed to help me achieve something important in my life.
29. I plan my activities to make sure that I have adequate time for sleep.
30. In my leisure time I regularly read novels or magazines.
38. I have joined with several people in achieving solutions to a mutual problem within the past month.
39. I keep a calendar or make a "To Do" list of what needs to be done each day.
48. I have been active on at least one committee at college or in one or more college groups within the past six months.
49. I manage my spending money well.
58. I have identified and can list as least three ways I can be an asset to the community.
59. I followed a systematic plan in making an important decision within the past thirty days.
68. I have successfully completed an extended trip on my own.
69. Within the past six months I have undertaken either an independent study or service project on my own.
78. I have made a positive contribution to my community (campus, neighborhood, or hometown) within the past three months.

Cultural Participation

20. I make time in my schedule for my hobbies.
30. In my leisure time I regularly read novels or magazines.
31. I have a mature working relationship with one or more members of the academic community (faculty member, student affairs staff member, administrator).

32. Within the past twelve months I have attended lecture or program dealing with a serious intellectual subject which was not required for any of my courses.
40. I am actively involved in two or more different organized activities in addition to my academic studies.
50. I have attended a play or classical music concert within the past year when not required for a class.
60. Within the past twelve months I have visited a museum or an art exhibit when not required for a class.
70. Over the past year I have participated in cultural activities on a regular basis (several times a month).

Tolerance

98. There are some topics that should never be discussed in college classrooms.
107. I sometimes use phrases or words such as "Blacks have rhythm," or "Honkie," or "people on welfare are only looking for a free ride."
108. I would prefer not to room with someone who is from a different culture or race.
116. I find it annoying when I hear people speaking in a language I don't understand.
117. I avoid groups where I would be of the minority race.
125. I think most women tend to respond to situations emotionally, while men respond by thinking.
126. I deal with students who are different from me (for example, of another race or who speak a different language) by being polite and staying away from them as much as possible.
133. I generally keep my beliefs to myself in order to avoid offending others.
134. I become annoyed with people who frequently try to change the rules.

Salubrious Lifestyle

7. I have one or more effective techniques (not involving alcohol or drugs) that I use to help me relieve stress.
17. I have plenty of energy.
27. I am generally satisfied with my physical appearance.
37. I maintain an appropriate weight for my height and frame.
47. I usually eat well-balanced meals.
57. I make sure that I get enough exercise to feel good.
67. I exercise vigorously for twenty minutes or more at least three times a week.
77. I plan my week to make sure that I have sufficient time for physical exercise.

Response Bias

5. I never make errors in classwork.
73. I like everyone I know.
99. I never get angry.
129. I never say things I shouldn't.
137. I never lie.

Peer Relationships

100. It sometimes bothers me if my leisure time activities are different from those of my friends.
101. It is important to me that I be liked by everyone.
102. I sometimes hold back my true feelings for a friend because I'm afraid I might embarrass myself.
109. I find relationships with my close friends not as important to me as they were a year ago.
110. It is important to me that others accept my point of view.
111. Within the past year there have been a number of occasions when I was mistaken about the closeness of a relationship.

118. It is important to me that I meet the standards of behavior set by my friends.
119. When I want to be alone I have difficulty letting my friends know in a way that doesn't hurt their feelings.
120. Each of my close friends holds at least one view of life or set of personal values which I can't accept for myself.
127. I find it hard to deal openly with college administrators and others in authority.
128. After having strong disagreements with a person, I usually try to avoid him/her as much as possible thereafter.
135. I try to keep my friends from knowing about my shortcomings and failures.
136. Because of my friends urgings I sometimes get involved in things that are not in my best interest.

Emotional Autonomy

103. I seldom express my opinion in groups if I think they will be controversial or different from what others believe.
104. I need to feel sure of the outcome before attempting something new or different.
112. Before making decisions I ask my parents what I should do.
113. I am usually more concerned about the grade I will receive than about the subject matter or what I am learning.
121. I seldom bounce ideas off other people in order to obtain their views of my thinking.
122. I feel guilty when I don't obey my parents' wishes.
130. Sometimes I conceal some of my talents or skills so I will not be asked to contribute to a group's efforts.
138. Decisions about important matters are largely based on what my parent(s) think and believe.

Academic Autonomy

105. I have a difficult time in courses when the instructor doesn't regularly check up on completion of assignments.
114. It is hard for me to work intently on something for more than a short time.
115. Recently I made a poor grade in class due to my neglect or lack of prior planning.
123. My grades are not as good as they could be because I don't like asking for help.
124. Within the past month at school or work, another person and I solved an important mutual problem.
131. Most of the time I get bored and quit studying after working on an assignment for a short time.
132. I have difficulty disciplining myself to study when I should.
139. My study time often seems rushed because I fail to estimate realistically the amount of time required.
140. Within the past month I have found myself worrying about unimportant matters, which interfered with the things I wanted to do.

APPENDIX G

ASSESSMENT INSTRUCTIONS

1. The University and the College of Arts and Sciences is very concerned with how well it is able to serve you. We want to make improvements in our orientation program, in our advising systems and in the help we provide throughout the next four years. We can't do that if we don't have a good understanding of what you need and want. We also need to understand where you are in your thinking as far careers, majors go.

We need your help for this. We have designed a set of questionnaires and psychological tests that will give us the answers we need to make substantial changes in our programs and services that we now offer you.

Although this is a required part of your college orientation, I want to let you know how very much we appreciate your taking the time and effort to answer the questions.

It's very important that you complete ALL parts of the tests. If you leave any parts blank we will be unable to use your entire packet.

The tests and questionnaires will be kept entirely confidential. There is no material in them that will ever be used with your name on it. Please be assured of that. We will ask you to put your student ID on them purely to keep the questionnaires together.

There is one part of a test which deals with sensitive questions. Do your best to answer it as accurately as possible. Please know that your answers are confidential.

Thank you again.

2. PLEASE CLEAR YOUR LAP OF ALL YOUR PAPERS.
 TAKE A LAP BOARD OUT FROM UNDER YOUR SEAT.
 WE WILL HAND OUT TWO QUESTIONNAIRES: ONE NOW AND ONE AFTER
 YOU HAVE BEGUN WORKING. WE DON'T WANT TO CONFUSE YOU.

Now we will pass out two things:

- a. a packet with a box on the front, and
 - b. a green answer sheet.
 - c. Use only a #2 pencil
- a. To be announced while passing out the forms:
- PLEASE FILL OUT ONLY THE BOX ON THE COVER OF THE PACKET.
- DO NOT FILL OUT ANYTHING ELSE UNTIL I GIVE YOU FURTHER
 INSTRUCTIONS
- b. On the answer sheet you must fill in two things only at
 this time:
 1. Your name, and
 2. Your student ID number. Note: There will be one
 space too many. Please begin in space A.
 - c. You will write NOTHING in the "birth date" or in the
 "special codes."
 - d. BOX PACKET is made up of four different questionnaires:
 1. The Box questionnaire
 2. A gray and green questionnaire--called the Career
 Decision Scale
 3. A questionnaire called the Career Decision Profile
 4. A Student Questionnaire

GREEN ANSWER SHEET

Please write on the first page of each questionnaire what number
 on the green answer sheet that you will start answering each question-
 naire. This will remind you where to go on the answer sheet when you
 start a new section. DO NOT WRITE ON THE ANSWER SHEET. ANSWER SHEET
 SHOULD ONLY HAVE MARKS IN THE CIRCLES AND THE BOXES FOR THE NAME AND
 STUDENT ID NUMBER.

The questions on the ----- will be filled in in space --- to ---
 on the green answer sheet.

1. The Box questionnaire 1-17
2. The Career Decision Scale 31-48

Note: THE NUMBERS OF THE QUESTIONS GO IN DESCENDING ORDER:

4, 3, 2, 1

PLEASE INDICATE AT THE TOP OF THE QUESTIONNAIRE THAT NUMBERS ON THE QUESTIONNAIRE CORRESPOND TO THE NUMBERS IN THE BUBBLES OR CIRCLES ON THE ANSWER SHEET:

4 = 4

3 = 3

2 = 2

1 = 1

3. The Career Decision Profile--side 2 61-79
4. Student Questionnaire
 - a. Questions 1-11 should be filled out ON THE QUESTIONNAIRE ITSELF
 - b. Question 12 (a-x) should be filled out on the GREEN ANSWER SHEET-- 91-114. We have numbered them for you to correspond with the numbers on the green answer sheet.

not important = 1 very important = 4
 - c. Questions 13-15 ON THE LAST PAGE should be filled out ON THE QUESTIONNAIRE ITSELF.

WRITE ON HERE

The ORDER that you complete the questionnaires is VERY IMPORTANT.

YOU MUST BEGIN WITH THE BOX QUESTIONNAIRE--question 1.

Work through all four questionnaires in the Box packet first. In a few minutes we will hand out the second questionnaire.

When we pass out the longer questionnaire, there will be no instructions. Simply read the directions and answer the questions as indicated on the answer sheet.

APPENDIX H

WORDING OF THE QUESTIONS
ON THE THREE SCALES

Career Decision Scale Certainty Scale Questions:

1. I have decided on a career and feel comfortable with it. I also know how to go about implementing my choice.
2. I have decided on a major and feel comfortable with it. I also know how to go about implementing my choice.

Answers: Like Me Not Like Me

4 3 2 1

Career Decision Profile Decidedness Scale Questions:

1. I have an occupational field in mind that I want to work in (for example, medicine, agriculture, management, or the performing arts).
2. I have decided on the occupation I want to enter (for example, electrical engineer, nurse, or cook).

Answers: Strongly Strongly

Disagree 1 2 3 4 5 6 7 8 Agree

Career Decision Profile Comfort Scale Questions:

3. I feel at ease and comfortable with where I am in making a vocational decision.
4. I'm not worried about my career choice.

Answers: Strongly Strongly

Disagree 1 2 3 4 5 6 7 8 Agree

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