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COGNITIVE INTELLECTUAL AND PSYCHOSOCIAL DEVELOPMENT
OF MALE STUDENTS AT A SMALL PRIVATE COLLEGE
AND A LARGE PUBLIC UNIVERSITY

DISSERTATION

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

By
Donald Joseph Omahan, A.B., M.A.

****

The Ohio State University
1982

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TO MOM, DAD, AND VIV
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CHAPTER I

INTRODUCTION

A review of the literature in higher education and student development indicates that the effect or "impact" which institutions of higher education have on students is neither fully understood nor fully studied. The term "impact" was employed by Feldman and Newcomb (1969), and is similarly used in this research study, to emphasize the underlying theme of change or development or adaptation. After a comprehensive review of impact studies, Feldman and Newcomb (1969) concluded that several characteristics of college students, such as authoritarianism and sensitivity to aesthetic experiences, do change across various kinds of institutions. They noted, however, that studies of changes in developmental variables of college students had not been emphasized.

Simultaneous with Feldman and Newcomb's review, Chickering (1969), Perry (1970), and Heath (1968) began
to report on their investigations of developmental changes in students at liberal arts colleges. Chickering studied men and women at thirteen small, liberal arts colleges. His results led to the formulation of a theory of psychosocial development during the college years (ages 18-25). Chickering's results suggested that if there is a developmental fit between the student and the college environment, students do change developmentally at similar rates and in the same general directions. Within this context, fit implied the existence of an appropriate source of challenge and support for the student within the environment. These appropriate sources of challenge and support were defined differently for different types of students at different types of institutions. Chickering went on to report that where this fit was not present students tended to drop out or fail.

Perry and his colleagues studied men and women at Harvard University and proposed a cognitive structural theory of intellectual development. They, like Chickering, found developmental change in students as a result of their college experiences. Perry stressed, however, that "educators can support, facilitate, and
encourage development, but cannot "impact" or "get" students to develop" (Perry, 1982).

Heath studied men at Haverford College. His results also led to the formulation of a comprehensive theory of development. Similar to Chickering, Heath found that the college environment could facilitate growth toward psychological maturity along five dimensions (Increasing Symbolization, Allocentrism, Integration, Stability, and Autonomy) which are discussed relative to four personality sectors or self systems (Cognitive Skills, Self-concept, Values, and Personal Relations).

Building upon these early investigations and theoretical formulations, several instruments which measure aspects of Chickering's Theory (Prince, Miller, and Winston, 1974; Erwin, 1978; Mines-Jensen, 1978; Barratt, 1978) and Perry's Theory (King, 1977; Kitchner, 1977; Knefelkamp and Widick, 1974) were developed. The use of these new instruments, especially those associated with Chickering's Theory, in impact studies and with populations from different kinds of institutions has been limited.
This study was designed to address the issue of the developmental effect of college and to use recently constructed instruments to assess developmental change in college students. Specifically, this study used a simple cross-sectional design to examine the developmental levels of freshman and senior students at Kenyon College and in the Arts and Sciences Curriculum at The Ohio State University on several dimensions relating to the theories of Chickering and Perry. The investigation focused on determining the cognitive structural development (Perry, 1970) and the psychosocial development (Chickering, 1969) of male students at these institutions using the instruments of Knefelkamp and Widick (1974), Barratt (1978), Mines and Jensen (1978) and Ervin (1978). Cognizant of Chickering's concerns about the effect of and importance of student-environment fit, the environment of the respective institutions was also investigated using a perceptual assessment instrument developed by Pace (1969).

Kenyon College is a small, coeducational, liberal arts institution located in Gambier, Ohio. A highly selective, private, undergraduate institution, Kenyon
enrolls approximately 1,450 students. The Ohio State University is a large, coeducational, state-supported, general university located in Columbus, Ohio. Within the Arts and Sciences Curriculum, there are presently approximately 5,000 undergraduate students enrolled.

Thus, the purpose of this study is to investigate the effect or impact of the college experience on students. This project gathered and compared information on the developmental levels of freshman and senior students enrolled at Kenyon College and in the Arts and Sciences Curriculum at The Ohio State University. The developmental levels of freshmen and seniors at the two institutions were measured and compared on three dimensions of Chickering's Theory of psychosocial development (Establishing Identity, Freeing Interpersonal Relationships, and Developing Purpose) and on Perry's positions of cognitive intellectual development. An environmental assessment survey was also administered in order to describe differential environmental perceptions.

The following research questions were examined:

1. What are the developmental levels of freshmen and seniors at each of the institutions in terms of their cognitive intellectual development?
2. How do freshmen and seniors compare within each institution and between institutions in terms of their cognitive intellectual development?

3. What are the developmental levels of freshmen and seniors at each of the institutions in terms of the resolution of Establishing Identity, Freeing Interpersonal Relationships, and Developing Purpose?

4. How do freshmen and seniors compare within each institution and between institutions in terms of the resolution of Establishing Identity, Freeing Interpersonal Relationships, and Developing Purpose?

5. How do freshmen and seniors at each of the institutions perceive their college environment?

6. How do freshmen and seniors compare within each institution and between institutions in terms of their perceptions of their college environment?

7. Given the nature of the perceived environment at the respective institutions, what inferences can be made as to the direction and amount of developmental change experienced by students at Kenyon College and Arts and Sciences Curriculum students at The Ohio State University?
This study is the first in a series of projected cross-sectional and longitudinal investigations of the developmental effect of different college experiences on students. Potential exists that the results of this work will serve to expand the body of knowledge concerning student development and the impact of higher education environments. In addition, this study will seek to provide information relative to the research paradigm and to the appropriateness of the several instruments employed for future research of a similar nature. In terms of more specific results, persons at The Ohio State University and Kenyon College may find the results of this study useful in establishing goals and designing programs on either an institution wide or more narrowly defined basis to better meet the developmental needs of students attending the respective institutions.
CHAPTER II

REVIEW OF LITERATURE

Historical Perspective

Research on the impact of college on students has grown considerably in the past twenty years. The questions asked in the various studies often concern issues of how students change as a result of their college experience. Most of these investigations, however, have focused on changes in characteristics and attitudes. In contrast, few research efforts concerning changes in students have considered psychosocial development, cognitive development, and environmental assessment.

The first significant compendium to systematically address the issues of the impact of higher education on students was Changing Values In College by Jacob (1957). In a comprehensive review of research conducted prior to 1957, Jacob concluded that colleges
and universities had minimal effect on the attitudes and values of their students. He further stated that the impetus for change which does occur "did not come primarily from the formal educational process," and that there was actually "more homogeneity and consistency of values" among seniors than among freshmen. The major college impact appeared to be one of socialization rather than one of change or the liberalization of values (Jacob, 1957). Those few colleges where changes in basic attitudes and values did occur were homogeneous liberal arts colleges.

The few institutions judged by Jacob (1967) to have influence on student values had their own prevailing atmosphere where teachers with strong value commitments were accessible to and sensitive to the students, and where value-laden personal experiences of students were integrated with the general educational program.

(Chickering, 1959, p. 160)

Jacob's contention that little change in attitudes and values result from college attendance provoked much comment, criticism, and debate. His work highlighted significant research questions; it served as a major stimulus to the development of new theoretical perspectives and instruments, and to the undertaking of more rigorous studies focusing on the interaction of the student and the college or university environment.
Eddy (1959) studied the influence of college on character development at twenty diverse institutions across the United States. He defined "character" as "intelligent direction and purposeful control of conduct by definite moral principles" (Eddy, 1959, p. 2). The major conclusion of his study was that the conditions in a college or university which contribute to the development of character are often the same conditions which contribute to good teaching and sound learning. He indicated that both character development and intellectual development are the result of six elements or influences: level of expectancy, the effect of the environment, the concept of teaching, the organization of the curriculum, the degree of student responsibility, and the opportunity for religious understanding and practice. He concluded:

...the most substantial modification of character cannot be achieved until the college promotes all six. In balance, the extent to which the college actually does affect a change in the attitudes and values of its students may well hinge on the degree to which it gives genuine support to this type of program.

(Eddy, 1959, p. 178)

Approximately ten years after Jacob's work, Dressel and Lehman (1965) concluded that earlier
studies concerning college impact and student development added only marginally to the body of knowledge concerning student change as a result of attending college. In their book, The Impact of College on Students, Feldman and Newcomb (1969) presented an exhaustive review of over 1,500 studies of the effect of college on students undertaken during the preceding forty years. They noted that the volume of research in the area during the ten year period following Jacob's compendium was probably greater than that undertaken in all years prior to the publication of his book. They stressed, however, that there were few genuinely comparable studies; results were either limited in scope or inconsistent. The lack of rigor in design was a common flaw; often the studies did not use theoretical perspectives in formulating research questions. Nonetheless, the conclusions which Feldman and Newcomb reached were more optimistic than Jacob's summary. Feldman and Newcomb stated:

There are conditions under which colleges have had (and, we assume, will continue to have) impacts upon their students, and not the least upon students' values. Moreover, the consequences of these impacts often persist after the college years.

(Feldman and Newcomb, 1969, p. 4)
Feldman and Newcomb went on to offer a number of propositions or impressions concerning developmental change in students as a result of their college experiences. They offered the caveat that these propositions or impressions "apply to most colleges of certain kinds, to most students affected by certain aspects of college environments, or to most students who have certain characteristics on entering college..." (Feldman and Newcomb, 1969, p. 325). Their propositions stated:

Freshman-to-senior changes in several characteristics have been occurring with considerable uniformity in most American colleges and universities, in recent decades. (Feldman and Newcomb, 1969, p. 326)

The degree and nature of different colleges' impacts vary with their student inputs - that is, entering students' characteristics, which differ among types of colleges in patterned ways. (Feldman and Newcomb, 1969, p. 327)

Within the same college, experiences associated with the pursuit of different academic majors typically have effects over and beyond those that can be accounted for by initial selection into those major fields. (Feldman and Newcomb, 1969, p. 329)

The maintenance of existing values or attitudes which, apart from certain kinds of college experience, might have been weakened or reversed, is an important kind of impact. (Feldman and Newcomb, 1969, p. 329)
Though faculty members are often individually influential, particularly in respect to career decisions, college faculties do not appear to be responsible for campus-wide impact except in settings where the influence of student peers and of faculty compliment and reinforce one another.

(Feldman and Newcomb, 1969, p. 330)

The conditions for campus-wide impacts appear to have been most frequently provided in small, residential, four-year colleges. These conditions probably include relative homogeneity of both faculty and student body together with opportunity for continuing interaction, not exclusively formal, among students and between students and faculty.

(Feldman and Newcomb, 1969, p. 331)

In addition to the effects of campus-wide influences and the pressures of subenvironments, college impacts are conditioned by the background and personality of the student.

(Feldman and Newcomb, 1969, p. 332)

Attitudes held by students on leaving college tend to persist thereafter, particularly as a consequence of living in post-college environments that support those attitudes. Within-college changes, especially if accompanied by a general stance of openness to change, may be still further extended in response to new social and technological conditions.

(Feldman and Newcomb, 1969, p. 332)

Whatever the characteristics of an individual that selectively propel him toward particular educational settings—going to college, selecting a particular one, choosing a certain academic major, acquiring membership in a particular group of peers—those same characteristics are apt to be reinforced and extended by the experiences incurred in those selected settings.

(Feldman and Newcomb, 1969, p. 333)
Feldman and Newcomb noted that numerous conditions or variables act or interact in bringing about changes in college students. Many of these mediating variables are situated outside of the academic program per se. Changes are often attributable to campus specific conditions such as peer group influence, degrees of homogeneity of students and faculty, initial selection criteria, entering student characteristics, and specific experiences to which students are exposed.

In recent years, a number of studies have focused specifically upon the development of the college student (Chickering, 1969; Heath, D., 1965, 1968, 1977; Perry, 1970; Sanford, 1963, 1967). Conclusions from these investigations, while somewhat general, support the contention that significant changes in modes of reasoning, values, attitudes, and resolution of psychosocial developmental tasks do take place in persons who experience college. Additional studies (Hedsker, 1968; Plant, 1958, 1965; Plant and Telford, 1966) provide evidence that college attendance vs. non-attendance is related to different rates of development in such areas as dogmatism, ethnocentricity, tolerance, intellectual disposition, and autonomy.
Sanford, writing in 1963 and 1967, suggested that personality change can be facilitated by an environment which engenders an appropriate amount of challenge and support for the individual. D. Heath (1965, 1968, 1977) similarly argued as a result of his investigation of various growth determinants that the college environment can facilitate student development and psychological maturation. His work included cross-sectional, longitudinal, and cross-cultural designs, all of which offer support for his maturation model.

Chickering (1969) likewise postulated that both the amount and direction of student development during the college years is at least in part a function of the interaction between the student and the college or university. He defined the developmental vectors of the 17 to 25 year old student, and outlined general environmental variables which may be important in considering this interaction. Chickering reported that in educational institutions where there existed a "fit" between the student and the environment in terms of the challenges and supports present, students grew in the same directions and in the same amounts as a result of their college experience. That is, "the areas of
change, the directions of change, and even the amounts of change were very similar..." (Chickering, 1971, p. 50). He added that "the most productive educational outcomes for individuals...take place...where the proportions of misfits are high and where they are recognized and helped" (Chickering, 1971, p. 54).

Perry (1970) in his Harvard studies focused on the cognitive-structural aspects of development. More specifically, he studied the question of how one reasons or makes meaning of the challenges of college. A number of researchers (King, 1977; Kitchner, 1977; Knefelkamp, 1974; Widick, 1975) have developed instruments which attempt to measure progress on Perry's scheme. Their works suggest that students' modes of reasoning change during the college years.

In summary, during the past two decades, research focusing on the impact of the college experience on students has taken new directions. There has been a movement away from studies on changes in values, attitudes, and personality characteristics, with recent work focusing on the developmental results of attending college. Psychosocial and cognitive structural developmental changes do seem to occur for college
students; in addition, a number of both classroom and non-classroom variables appear to interact with the students in order to bring about these changes. Within this context, Perry's work on the intellectual development of college students, Chickering's work on the psychosocial development of college students, and environmental assessment as it relates to higher education are emphasized in this study.

**Perry's Theory of Cognitive Development**

Having major referents in the work of Piaget (e.g., 1950, 1965), Perry's Theory (1970) is a cognitive developmental approach to intellectual and ethical development. The basic element of this approach is a "cognitive structure," that is, a set of assumptions which an individual uses in perceiving, organizing, and evaluating his or her experience.

Perry's scheme or model is comprised of nine stages or positions. Each position is defined by a structure which persons use in interpreting (i.e., perceiving, organizing, and evaluating) their experiences with questions of knowledge and valuation. The positions were initially defined as the result of
four-year longitudinal observations of two samples of Harvard University undergraduates in the 1950's and 1960's. These studies indicated that the manner in which students in Perry's studies reasoned, thought, and made meaning of their experiences developed from simple structures characterized by few distinctions and relationships, toward more complex structures displaying increased differentiation and integration.

Perry shares the thinking of a number of other developmental theorists (e.g., Kohlberg, 1968; Loevinger, 1976) in defining "stage" or "structure" as a relatively stable form of reasoning. He chooses to use the term "position" rather than "stage," although the meanings of these two terms are virtually synonymous. Positions have the following characteristics:

1. Positions are **sequential**. Each is experienced in an individual and **invariant order**. That is, it is impossible to move from Position 2 to Position 4 without experiencing Position 3. This does not mean to imply that each individual develops at the same rate or to the same extent; the rate and end result of development varies
from person to person. That is, not all individuals develop cognitively to the same level of complexity, nor do they achieve a given level at a specified age.

2. Positions are **hierarchical in nature.** As such, the structure at each successive position includes and integrates aspects of preceding positions into a more complex structure. For example, a student at Position 4 comprehends reasoning at Position 2 and Position 3. However, the converse is not true. A student at Position 2 does not understand reasoning at Positions 3 or 4.

3. Each position is **qualitatively different.** Each successive position is an individual whole not merely an addition to the previous positions. There is a move from one way of thinking or making meaning of experience to another which is more complex and integrative.

The **process** of cognition rather than the **content** is the focus of cognitive developmental theory. For example, two individuals might hold opposing positions on a particular issue or problem—the "what" of the
situation. However, the structure of their thinking—the "how"—may be the same. As Rodgers points out, "The 'what' is different, but the 'how' is similar. Cognitive developmental theories are concerned only with the 'how' not the 'what'" (Rodgers, 1980, p. 15).

One further point relative to cognitive developmental theory has not been fully explored. This is the concept of the universality of stages. Kohlberg (1969) suggests that cognitive developmental theory is universal in nature. That is to say, the invariant nature of positions is not culture-bound. This contention has not been investigated by Perry.

Developmental change takes place when an individual encounters cognitive conflict. If a student's way of thinking or experiencing the world is challenged, then there is potential for cognitive development. As the student becomes aware of cognitive conflict and the inadequacy of his or her way of making meaning of experience, he or she experiences disequilibrium and endeavors to re-establish a balance or equilibrium between his or her internal thinking processes and the way he or she is perceiving the
world. This process is known as **equilibration**. As Rodgers points out:

> Development, as cognitive developmental theorists see it, is continually directed toward increasing equilibrium, and each stage in a sequence is a more equilibrated stage of functioning than the previous one. This means each successive stage differentiates and relates more and different categories than the previous one and does so with greater internal consistency and greater adequacy for understanding and resolving conflicts with the environment.  
> (Rodgers, 1980, p. 16)

Therefore, when an individual's way of thinking is in disequilibrium with external stimuli, he/she searches for a means to restore a state of balance. This condition may lead to assimilating or accommodating behavior.

**Assimilation** takes place when an individual attempts to restore equilibrium by bringing the press of the environment in concert with his/her existing position (stage) of reasoning. In other words, the existing structure of thinking is not changed; rather the cognitive conflict is interpreted or filtered into the current manner of reasoning. The following scenario offers an example: A professor offers a number of reasons as to why Jews were persecuted by the Nazis, but offers no clear cut "right" answers. This
may cause a student who assumes that there is a "right" answer to be confused; cognitive conflict results. In order to compensate for this situation, the student may see the professor as being a "bad" instructor because he did not give the correct answer.

An alternate way of resolving cognitive conflict and its associated confusion is through changing one's way of perceiving the world. This move toward a new way of thinking or reasoning is referred to as accommodation. A new structure or position is achieved. It may not now be as important to find the "right" answer. The student may actually see a number of legitimate perspectives to the situation or problem. Again using the previous example: The accommodating student may state, "Now that I more fully understand the Holocaust, I see that there were a number of racial, political, and economic reasons as to why Jews in Europe were persecuted by Nazis. But not all the reasons had the same impact or importance." The student has made an accommodation to a new way of thinking.

As Perry points out, "We do depend heavily on... particular concepts of assimilation of an experience to
an extant structure (or more broadly 'schema') and of accommodation of structure by transformations and recombinations which can result in new and more differentiated structuring of experience" (Perry, 1970, p. 204). Thus, to summarize, change and development take place when a condition of cognitive conflict is present. That conflict is between one's present mode of reasoning and the press of external stimuli. Initially one tends to assimilate cognitive conflicts into his/her current stage or position of reasoning; later he/she may accommodate a new way of thinking into an entirely new structure.

Perry's scheme is particularly relevant to this study in that it focuses on cognitive intellectual development during the traditional college years. Robert White in the Forward to Perry's (1970) book states, "College teachers who believe they know their business, and developmental psychologists who believe they know theirs, both stand to learn more about their business from the research described in this book. The college years...have not, oddly enough, received basic research as a stage of intellectual growth" (Perry, 1970, p. v).
As noted above, Perry theorizes nine positions or stages of intellectual development. These positions can be viewed as falling into four groups: dualism, multiplicity, relativism, and commitment. This study focuses primarily on the position groupings of dualism, multiplicity, and relativism. As Rodgers (1980) points out, the positions in commitment are more qualitative than structural, and tend to be developed in individuals beyond the college years. Perry graphically describes his scheme in *Forms of Intellectual and Ethical Development In The College Years* (1970), and further elaborates on his work in a chapter titled "Cognitive And Ethical Growth: The Making Of Meaning" in Chickering's 1981 book, *The Modern American College*. Perry's developmental framework is summarized in the following paragraphs.

The basic assumption of the three positions in dualism is that all questions of knowledge and valuation have single, absolute, right and wrong answers. There is nothing that can not be put into one of these groupings. Any question that does not appear to fall in one of these two absolute categories must be accounted for in some way. The perception of
uncertainty and the various ways in which such uncertainty is explained differentiate the positions in dualism.

In Position 1, Basic Duality, everything can be accounted for absolutely. There is only right and wrong; no uncertainty exists. From this Position's perspective, as Perry points out, "...division is between the familiar world of Authority-right-we, as against the alien world of illegitimate-wrong-others" (Perry, 1970, p. 59).

At Position 2, Multiplicity Prelegitimate, "two world" thinking still exists. Elements of uncertainty are perceived; however, they are attributed to error committed by authorities, i.e., teachers, etc. Nonetheless, a new element of reasoning has been encountered. Complexity and uncertainty, though not legitimized, are acknowledged to exist. According to Perry, "Multiplicity has of course not yet attained the status of epistemological legitimacy; the Absolute remains secure and close at hand. The concession, however, has opened a path toward doubt" (Perry, 1970, p. 87).
Information at Position 3, multiplicity subordinate, continues to be perceived as either right or wrong. Uncertainty is acceptable, however, with the understanding that it will eventually show itself as right or wrong. The individual begins to consider alternatives as "temporarily" legitimate.

One can see that while the basic assumptions of dualism persist through Positions 1, 2, and 3, qualitative differences do exist.

Multiplicity is defined as pervasive uncertainty by Perry. It exists at Position 4. In this position the individual often reasons in a manner which is exemplified by extreme confusion. No one right answer exists. Truth is still assumed in a few limited areas, but diversity and uncertainty exist in most cases. "Non-absolute evidence or standards for judgment within context are not yet integrated into the structure" (Rodgers, 1980, p. 32). An individual at this position might be heard to say, "anyone has a right to his own opinion" (Perry, 1970). No differentiation among opinions, however, is implied or acceptable.

Positions 5 and 6 are relativistic or contextual in nature. A differentiation is made with multiplistic
reasoning in that internal structure is present; discriminations are made but in a non-absolute manner.

At Position 5, Relativism, an individual becomes increasingly aware that there are criteria for making decisions. The criteria are not absolute; they generate from the assumptions and rules of evidence of various contexts. Characterizations such as "better" or "worse" are more accurate and relevant than "right" or "wrong." Perry (1970) suggests that this realization may lead to reactions such as eagerness, ambivalence, or turmoil. This is seen as a "drastic revolution" in reasoning. Thinking in absolute terms tends to become the exception rather than the rule.

Position 6, Commitment Foreseen, signals the dawn of commitment in relativism. As Perry notes, this position is characterized by, "(1) Discovery; (2) Areas: studies, vocation, moral values, and religion; (3) Stylistic balances; and (4) The phenomenon of Commitment to Commitment" (Perry, 1970, p. 137). Relativistic reasoning is focused on oneself, and commitments are foreseen; action on commitments, however, is not yet made.
Commitment continues to evolve and become more clearly defined through one's values, reasoning, and action in Position 7 (Initial Commitment), Position 8 (Orientation In Implications Of Commitment), and Position 9 (Developing Commitments). Perry suggests that the changes in these positions are less structural, and directed more toward clarification and the formulation of one's identity. Commitment is:

A process of affirmation, choice, or decision (career, values, politics, personal relationship) made in awareness of Relativism (distinct from lower-case c of commitments never questioned). Agency is experienced as within the individual.

(Perry, 1982)

As noted earlier, the primary research for Perry's Theory was accomplished with undergraduates at Harvard University. Initial studies consisted of extensive unstructured interviews by trained personnel; the interviews sought to ascertain the subjects' modes of reasoning or ways of making meaning from their experience. In order to validate and extend Perry's Theory and to assist in the determination of how cognitive change takes place, a number of researchers have conducted additional studies at a variety of other higher education institutions across the country (see
For example, in the studies by Rodgers (1977), Rodgers et al. (1978), and Widick (1977), the great majority of freshmen (60% to 96%) at four different higher education institutions were found to be in Perry Positions 1 through 3 (defined by these researchers as dualism). A moderately sized minority (8% to 35%) of the freshmen in these studies were in transition between Perry Positions 3 and 4 (defined by the researchers as multiplicity), and a very small minority (0% to 5%) were in Positions 4 through 6 (relativism).

Other research has focused on the process of and conditions for developmental change as it pertains to Perry's theoretical formulations (see Knefelkamp and Slepitza, 1975, 1976; Widick, Knefelkamp, and Parker, 1975). As succinctly summarized by Rodgers:

...dualistic students are seen as being challenged by environments which introduce moderate diversity, require analysis of conflicting viewpoints, and emphasize experiential learning. Dualistic thinking students are supported by environments which are highly structured and which have limited degrees of freedom and warm personal atmosphere. Relativistic thinking students are challenged by encounters with extensive diversity; requirements to narrow toward commitment; and indirect, vicarious learning experiences. They are supported in
environments with extensive degrees of freedom, less structure, and genuine, warm, interpersonal relationships. (Bodgers, 1980, pp. 32-33)

Projects and research involving the translation of Perry's Theory into practice in the areas of teaching and student services programs are reported in the work of Knefelkamp, Widick, and Parker, 1978; Parker, 1977, 1978; Bodgers and Widick, 1978; Simpson, 1976; Touchton, 1978; and Widick and Simpson, 1978.

Finally, a number of researchers (see King, 1977; Kitchner, 1977; Knefelkamp, 1974; Widick, 1975) have focused efforts on the development of instruments to economically assess the levels of students' thinking along the Perry continuum. The Perry Instrument (Knefelkamp, 1974; Widick, 1975), now referred to as the Knefelkamp-Widick Sentence Stem And Essay Test, seeks to obtain a sample of a person's thinking structure through the use of five sentence completion stems and two essay questions. The Reflective Judgment scoring system developed by King (1977) and Kitchner (1977) presents subjects with reflective judgment dilemmas and a follow-up structured interview. Practical limitations to both scoring procedures are the availability of trained judges and the amount of
time required to score subjects' responses. Nonetheless, the instruments appear useful as tools of assessment, research, and evaluation. The Perry Instrument was used in the study reported here due to the availability of trained raters; the researchers' familiarity with the instrument's history, content, and scoring procedures; and a continued research interest in the instrument on the part of persons at Ohio State.

The research cited above relating to the Perry scheme is presented to provide an indication of the direction and focus of the extensive research and commentary on Perry's Theory in the dozen years since its publication. As noted by Perry:

> It has...remained for other researchers to show that the scheme provides a useful description of students' development of meaning in other settings, to refine the scheme further, to design more economical measurements, and to illustrate its power for the improvement of teaching and counseling in higher education.

(Perry, 1981, p. 98)

Within this context, Perry (1981, 1982) reports a growing bibliography of over two hundred entries citing articles and commentary relating to his theory and its constructs. The bibliography is the result of efforts of a loosely structured network of practitioners,
educators, and researchers directed by Laurence Copes (Institute for Studies in Educational Mathematics, St. Paul, Minnesota). The reader is referred to this lengthy bibliography for references to additional articles and research on Perry's Theory.

**Chickering's Theory of Psychosocial Development**

Since the writings of White (1958) and Erikson (1968), "identity" has become a commonly used, if not entirely understood, concept in higher education. Postulating seven major dimensions of development that occur in persons during the college years—developing competence, managing emotions, developing autonomy, establishing identity, freeing interpersonal relationships, developing purpose, and developing integrity—Chickering (1969) attempts to elaborate on earlier notions of identity, especially those of Erikson. In his writings, Chickering seeks to move from hazy abstractions concerning this concept toward greater specificity and concreteness.

Although his theoretical formulations have their roots in the psychosocial or ego identity theories of Erikson, Chickering emphasizes the concept of
adolescence (the 18-25 year old period) as a cultural phenomena. Within this context, his 1969 benchmark work, *Education and Identity*, "offers a point of view based on relevant research and theory, in an effort to move research findings closer to application and action" (Chickering, 1969, p. 5). This point of view strives to:

1. explicate the developmental tasks facing the 18-25 year old, especially as these tasks pertain to college students.
2. show that college can make a difference—that is, it can affect the rate and direction of an individual's development.
3. examine the college environment—i.e., what facilitates or hinders development.

In addressing these concerns, Chickering's Theory describes seven major dimensions or vectors of human development and considers these vectors in relation to six major aspects of the college environment. "Vector of development" is the name given by Chickering to refer to any one of the seven major constellations or areas of development which occur during adolescence and early adulthood. This concept closely parallels
formulations advanced by other theorists such as "developmental tasks," "needs," etc. Chickering argues that each dimension of development has direction and magnitude, hence his borrowing of the term "vector" from mathematics and the physical sciences.

The seven vectors of development, and the issues of concern within each vector are:

1. Developing Competence
   a) Intellectual competence.
   b) Physical or manual skills competence.
   c) Social and interpersonal competence.

2. Managing Emotions
   a) Developing an awareness of one's emotions, especially of aggressive impulses toward authority figures and sexual feelings.
   b) Integration of emotions within the stream of ongoing decisions and behavior--i.e., achieving new and more useful patterns of expression and control of one's emotions, especially in the areas of aggression and sex.
3. Developing Autonomy

a) Emotional and instrumental independence.
b) Recognition of one's interdependencies.

These first three vectors tend to be ascendant or of primary concern simultaneously. Chickering would argue that in an institution of higher education whose students are representative of the "normal college-age population," these three vectors would typically be the focus of a student's development during the freshman and sophomore years. Progress on these three dimensions would constitute a prerequisite for successfully attending to the fourth factor:

4. Establishing Identity

a) Acceptance of and coming to terms with one's body and appearance.
b) Clarification of sexual identity.
c) Knowing the kinds, frequencies, and intensities of experiences which one prefers.
d) Perceiving one's self on these dimensions in the same way as others perceive us.

Once achieved, a solid sense of identity fosters change or provides a framework for development in the remaining three vectors. These last three vectors are
typically ascendant, or of primary concern, during the student's junior, senior, and graduate years in college.

5. **Freeing of Interpersonal Relationships**
   a) Developing tolerance.
   b) Shift in the quality and depth of intimate relationships with friends and significant others.

6. **Clarifying or Developing Purpose**
   A commitment to and an integration of:
   a) Avocational and recreational interests.
   b) Vocational plans and aspirations.
   c) General life style considerations.

7. **Developing Integrity**
   a) Humanizing of values.
   b) Personalizing of values.
   c) Developing congruence between values and behavior.

The six major sources of environmental influence on development which Chickering discusses are:

1. Clarity of institutional objectives and internal consistency.
2. Institutional size.
3. Curriculum, teaching, and evaluation.

4. Residence hall arrangements.

5. Faculty and administration.

6. Friends, groups, and student culture.

Chickering thus argues the following:

The thesis is not that all students change along all seven vectors, nor that the environmental conditions operate with equal force for all students at all institutions, but that such changes do occur for some students and they can more frequently occur for others. Environmental conditions at some institutions do foster or inhibit such changes, and systematic modification can increase the frequency of valued development. (Chickering, 1969, p. 5)

Within this framework, two basic concepts guide Chickering's view of the process of development:

1. Development occurs through cycles of differentiation and integration.

   Increased differentiation occurs when one comes to see the interacting parts of something formerly seen as unitary, when one distinguishes among concepts formerly seen as similar, when actions are more finely responsive to purposes or to outside conditions, when interests become more varied, tastes more diverse, reactions more subtle. In short as we become more complex human beings....

   But increasing differentiation must be accompanied by increasing integration.... Relationships among
parts must be perceived or constructed so more complex wholes result. Concepts from different disciplines must be brought to bear on one another and connected in ways appropriate to varied tasks and problems. Consistencies between word and word, word and deed, and deed and deed, must be achieved. Impulse and emotion must pull together with conscience and reason. Short-run hedonism must coordinate with long-run purposes. (Chickering, 1969, p. 292)

Hence, according to Chickering, development takes place when a person meets a challenge which necessitates new responses. These challenges and responses are often associated with states of dissonance and anxiety and the individual's attempts to reduce the effects of such disequilibrium. Thus, a number of pairs of phrases serve to define the process of a person's development: differentiation and integration, challenge and response, developmental dissonance and anxiety reduction, disequilibrium and equilibrium.

2. The impact of an experience depends upon the characteristics of the person who encounters it. Chickering argues that although students differ in significant ways that affect their responses
to their particular college or university, educational policy and practice often minimize or totally ignore such differences. Chickering was led to conclude:

So students differ in significant and fundamental ways, and the impact of experiences encountered in college will be substantially influenced by those differences. But to act on this basic law, we must remember one other major consideration—timing—and take it into account.... Erikson (1950, 1963) and many others emphasize the importance of an "epigenetic principle," according to which development unfolds and is elaborated, where not only organic growth, but personality development occur in steps predetermined by both an inner program and outside forces. If rate or sequences are seriously disturbed, harmony among parts may be lost through under- or overdevelopment, to the detriment of function, stability, satisfaction....

Most of us have known students who have been damaged by the too-hot breath of premature experiences. And we know others for whom the warmth required for them to break through their cocoons comes too late. (Chickering, 1969, pp. 306-307)

In developing his theoretical formulations, Chickering relied on the writing of other researchers and theorists, as well as on extensive data gathered on the students and the environment at thirteen private
liberal arts colleges. In gathering data on the students and their institutions, Chickering employed a wide variety of data gathering techniques. These included questionnaires (biographical, socio-economic, attitudinal); personality inventories (traits, values, and interests) such as the Omnibus Personality Inventory (Center for the Study of Higher Education, 1963); vocational interest measures such as the Strong Vocational Interest Blank (Strong, 1943); studies of official institution documents; interviews with administrators, faculty, and students; environmental assessment instruments such as the College And University Environment Scales (Pace, 1963), etc. 

_education and Identity_ summarizes the results of this extensive project and the integration of the work of Chickering and others into a theory of psychosocial development for the 17-25 age range. Since 1969, the most comprehensive efforts to clarify and expand upon Chickering's work have been undertaken by Judith Price, Theodore Miller, and Roger Winston. The Student Developmental Task Inventory (1974, 1979) developed by Prince, Miller, and Winston uses Chickering's seven vectors of development as the
overall model for viewing developmental tasks, "because these vectors represent the common core of the major formulations of development" (Miller, Prince, Winston, 1974, p. 14).

Three of Chickering's seven vectors are assessed by the Student Developmental Task Inventory (SDTI): Developing Autonomy, Freeing Interpersonal Relationships, and Developing Purpose. The SDTI is employed to determine those behaviors which students have developed in these three areas. The instrument was originally developed as an "action-oriented tool" for assessing and facilitating individual student growth and development in the college setting. Thus, in the technical manual to the second edition of the SDTI, the authors suggest a sequential program for assisting individual students in assessing their growth, setting developmental goals, and designing and implementing plans for accomplishing these goals (Winston, Miller, and Prince, 1979). Because of its focus on the individual student, the use of the SDTI as a tool for developmental program purposes and research into the development of college age students as a group has been limited. The authors do present, however, a
number of examples of areas where the instrument could be utilized (e.g., orientation programs, student counseling programs, student life programming, peer helper training programs).

Beyond these efforts, and until recently, little scholarly work has been undertaken to refine Chickering's Theory. In particular, little has been done to explore different ways to measure the constructs he advances. Three new instruments—The Erwin Identity Scale (Erwin, 1978), The Mines-Jensen Interpersonal Relationship Inventory (Mines and Jensen, 1978), The Barratt Developing Purposes Inventory (Barratt, 1978)—have been developed at the University of Iowa in an effort to fill this void. These instruments are discussed in detail in Chapter III.

Environmental Assessment

Colleges differ from one another in many ways (Feldman and Newcomb, 1969). Until recently, however, studies focusing on the "college environment" have been lacking in comprehensiveness. As Astin and Panos (1966) point out, "Because of differences in measurement instruments, sampling techniques, and
methods of subject identification, data from different investigations are seldom interchangeable, and the researcher initiating a new project typically starts his data from scratch (Astin and Eanos, 1966, pp. 5-6). In reaction to such criticisms and in a continuing response to the work of Jacob (1957) discussed earlier, a number of studies began focusing upon students at several colleges or universities at the same time. These studies used like sampling techniques and instrumentation in order to measure the breadth and depth of institutional differences, and to investigate the differential impact of college environments.

Murray (1938) conceptualized that individuals strive to satisfy biological, psychological, and emotional needs. The environment in which the individual exists "presses" in a manner to either satisfy or frustrate such personal needs. Pace (1957) noted that in the college setting the press is seen as pressures, stresses, and conformity-demanding influences within the college or university culture. Within this context, Walsh (1973) has reviewed and evaluated a number of the recent conceptual approaches
used to analyze the interaction between an individual and the press of the environment (person-environment interaction). He examined the works of Astin (1968), Barker (1968), Clark and Trow (1966), Holland (1966), Pace (1969), Pace and Stern (1958), Fervin (1967), and Stern (1970). Because of its strength as a research instrument and its use in Chickering's studies, the work of Pace was used to examine the nature of the collegiate environment in this study.

Using data generated in the 1950's and 1960's, Pace (1963) developed the College and University Environment Scales (CUES). The instrument's 150 items measured campus facilities, rules and regulations, faculty, curricula, instruction, student life, and other pertinent variables. Students were asked to respond "true" or "false" as to whether they felt a statement was descriptive of their college or university. The responses were divided into five scales: Practicality (enterprise, organization, material benefits, social activities, vocational emphasis, orderly supervision), Community (friendliness, cohesiveness, group-orientation), Awareness (awareness of self, awareness of society,
awareness of aesthetic stimuli), Propriety (mannerly, considerate, proper, conventional), and Scholarship (intellectuality, scholastic discipline, intellectual achievement, pursuit of knowledge). Extensive data obtained from the use of the first edition of the CUES enabled Pace and his associates to develop a second edition of the instrument, CUES II (1969), which is discussed in detail in Chapter III. The CUES II contained 100 of the original 150 items found in CUES I, as well as 60 items of an "experimental nature." Two new scales were also described in the new technical manual: Campus Morale (student freedom of expression, assimilation into campus life, group cohesiveness, supportive and spirited relationships, commitment to intellectual tasks) and Quality Of Teaching And Faculty-Student Relationships.

The purpose of the College And University Environment Scales, simply stated, is to assist the college or university in determining the "climate" as perceived by the students. Both versions of the instrument have a significant normative base (derived from studies done in the 1960's) which is divided into categories based on such variables as ownership,
selectivity, geographical region, and curriculum. The CUES has been used successfully since its introduction in assisting colleges and universities to identify students' perceptions of their environment. The results of such studies can have implications for a modification of a college's atmosphere in a controlled and developmental fashion. As Feldman and Newcomb note:

A student's perception of the features and characteristics of the total college environment seems to be affected by his particular location in that environment and the particular nature of his involvement with university life. ...although underclassmen and upperclassmen are often in high agreement about the relative ordering of various environmental demands and opportunities, they are not necessarily in agreement about the absolute intensity of these pressures. (Feldman and Newcomb, 1969, pp. 125-126)

They go on to point out that according to CUES scores, particular location seems to be more important than such variables as personality traits, values, and attitudes in their college experience. Feldman and Newcomb thus state that:

Not surprisingly, the characteristics of newly admitted students that distinguish one college from another continue, as students remain in college, to distinguish those same colleges. This fact, however, does not mean that colleges present no distinctive influence to their students--quite the contrary. Various indices of college
environments suggest that the different types of colleges tend—though with many variations within each type—to confront their students with different environments. ...colleges' distinctive impacts tend to be cumulative: the kinds of students they admit help to determine the kinds of impacts those students will confront. And insofar as faculty influences are adapted to the aspirations and capacities of their students, the process is reinforced. One would therefore anticipate that distinctive differences found among colleges in respect to their entering freshmen would become still more pronounced on the part of their graduating seniors.

(Feldman and Newcomb, 1969, pp. 144-145)

Additional research in this area may prove helpful in more specifically determining and empirically measuring those variables of impact.
CHAPTER III

METHODOLOGY AND PROCEDURES

Subjects

The population sampled for this study were freshman and senior male students enrolled at Kenyon College and in the College of Arts and Sciences at The Ohio State University. For purposes of this study, freshman students are defined as follows:

**Kenyon College:**
- Graduated from high school in the Spring of 1979.
- Enrolled in Kenyon College for the first time in the fall semester of 1979.
- Were 17-19 years of age.

**The Ohio State University:**
- Graduated from high school in the Spring of 1979.
- Enrolled in The Ohio State University for the first time during the Autumn Quarter of 1979.
- Were 17-19 years of age.
- Had declared Arts and Sciences as their intended college academic program.
Similarly, for purposes of this study, senior students are defined as follows:

Kenton College:
- Had attended Kenyon College continuously as full-time students for four consecutive years (including possible study semester or year abroad).
- Planned to graduate in May, 1980.
- Were 21-23 years of age.

The Ohio State University:
- Had attended The Ohio State University continuously as full-time students for four consecutive years (including possible study quarter(s) or year abroad).
- Planned to graduate in June, 1980.
- Were 21-23 years of age.
- Were majoring in the College of Arts and Sciences.

The Ohio State University population was limited to students enrolled in or anticipating enrollment in the College of Arts and Sciences to "physically" control for the differences which exist between a multiversity, such as Ohio State, and a small liberal arts college, such as Kenyon. Since the curriculum of the Arts and Sciences College most closely approximates the curriculum of a liberal arts college, a more uncontaminated view of the relative developmental
impact of the two institutions could be obtained by controlling for this factor. In addition, the heterogeneity of Ohio State University students across curriculum areas could make unwieldy the interpretations of developmental change at Ohio State or comparisons between Ohio State and Kenyon.

This study represents a portion of a larger study in which a separate, parallel set of data was compiled and analyzed for women (see Heidke, 1982). Throughout the process of this larger investigation, the researchers had recognized a responsibility to the formation of a sound baseline for additional, ongoing investigation. Toward this end, a number of methods of organizing, comparing, and analyzing the various factors involved were considered. As conceptualized, three possible modes existed for assessing subjects and analyzing the data obtained as a result of this research effort:

1. Responses from subjects at Kenyon College and The Ohio State University might have been assessed and analyzed on an intra-institutional basis, i.e., separate sets of data could have been obtained and compared for students within
each institution. Such a dichotomy would offer each institution a reasonable assessment of itself. This approach, however, would offer little or no comparison between different types of higher education milieus, e.g., the small, liberal arts college and the large multiversity.

2. Consideration was given to a separate assessment of students' cognitive and psychosocial developmental levels. Such an approach would be contrary to the "whole person" philosophy which the researchers wished to embody in their research. A "whole person" approach, recognizing the contributions of both the aforementioned families of developmental theory (cognitive and psycho-social), would offer more meaningful and useful data in fully assessing the subjects.

3. Finally, consideration was given to compiling and analyzing separate sets of data for men and women. In addition to an interest in comparative data between their freshman and senior classes and between their respective types of institutions, representatives of Kenyon
and Ohio State had expressed an interest in a separate analysis of the data for men and women students. More generally, a review of relevant research indicated that inter-institutional investigations of cognitive and psychosocial development focused predominantly on males (Chickering, 1969; Feldman and Newcomb, 1969; Kohlberg, 1969; Perry, 1970); few research efforts sought to address the issues of cognitive and psychosocial development of women at different types of educational institutions (Marcia and Friedman, 1970). In addition to these factors pertaining to the nature of the research problem, two other issues argued for a separate analysis of data for men and women: the statistical procedures to be utilized in the analysis of the data; and the necessity to limit sample size due to such constraints as cost, availability of subjects, instrument administration, and instrument scoring.

After discussions with various authorities in the area of student development, the researchers determined to pursue the final option, i.e., a separate analysis
of data for men and women. This approach seemed most appropriate given the goals and design of the research project.

From the population identified, a stratified sample of at least twenty percent (20%) was randomly selected. Population lists were provided by the two institutions. At Kenyon, the population consisted of 235 freshman men and 190 senior men; at Ohio State, the population consisted of 613 freshman men and 199 senior men. The number of persons contacted by mail to actually participate in the study were as follows (with the percent of the population represented by the number indicated in parentheses):

Kenyon College:  
Freshmen.... 42 (17.9%)  
Seniors..... 43 (22.6%)

Ohio State:  
Freshmen....102 (16.6%)  
Seniors..... 79 (39.7%)

Of the numbers indicated above, 22 Kenyon freshmen (52.4% of the sample, 9.4% of the population) responded to each of the instruments administered. Of the Kenyon seniors, 19 (44.2% of the sample, 10.0% of the population) responded to each of the instruments except the Perry Instrument where 18 (41.9% of the sample,
9.5% of the population) responded. For Ohio State, 27 freshmen (26.5% of the sample, 4.4% of the population) responded on each of the instruments except the Erwin Identity Scale where 26 (25.5% of the sample, 4.2% of the population) responded. There were 19 Ohio State seniors (24.1% of the sample, 9.5% of the population) who responded to each of the instruments except the Perry Instrument where 16 (20.3% of the sample, 8.0% of the population) responded. Given the nature of the study (descriptive, exploratory, ex post facto, simple cross-sectional), and given constraints associated with population size, instrument administration, and scoring, the number of respondents was considered to be sufficiently large to obtain meaningful results (Gay, 1976).

Research Design

As indicated above, the nature of this study is ex post facto and simple cross-sectional. According to Kerlinger:

Ex post facto research is systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulated. Inferences about relations among variables are made, without
direct intervention, from concomitant variation of independent and dependent variables. (Kerlinger, 1973, p. 379)

The simple cross-sectional nature of this design indicates that data are collected at one point in time from the selected sample with the intention of describing the larger population at that time. Such a design is "...used not only for purposes of description, but also for the determination of relationships between variables at the time of study" (Babbie, 1973, p. 62).

Both purposes, description and determination of relationships, are inherent in the design utilized in this study. As stated in more detail elsewhere, it is the intention of this study to systematically describe freshman and senior students at Kenyon College and in the College of Arts and Sciences at The Ohio State University on selected dimensions of development, as well as to describe perceptual characteristics of the college environments. To the extent possible, speculative inferences are made as to the relationships existing between developmental variables, class attributes (i.e., freshman and senior), and institutional characteristics (i.e., Kenyon and Ohio State).
A simple cross-sectional version of a two-group pretest-posttest design will be used. This is diagramed as follows:

01 \[X_1\] 02

01 \[X_2\] 02

In this instance, 01 refers to the observation of freshmen and 02 refers to the observation of seniors. \(X_1\) and \(X_2\) refer to the four-year collegiate experiences at Kenyon and Ohio State, respectively.

Following the model set forth by Astin (1970) for the research of college impact, the design employed may also be conceptualized as follows:

A1 \[\text{INPUT}\] \[\text{THROUGHPUT}\] C1

A2 \[\text{INPUT}\] \[\text{THROUGHPUT}\] C2
At points A (INPUT), the developmental characteristics of freshmen were assessed at Kenyon (A1) and Ohio State (A2) in the Winter of 1980. Points C (OUTPUT) represent the developmental characteristics of seniors at Kenyon (C1) and Ohio State (C2) during the latter part of their final year in college. Points B1 and B2 (THROUGH-PUT) represent the assessment of the perceptual characteristics of the respective college environments.

Instrumentation

To assess student development along the developmental dimensions discussed earlier (i.e., cognitive structural and psychosocial), and to assess student perceptions of the college environment, five instruments were selected for use in this study. The Perry Instrument (Knefelkamp, 197%; Widick, 1975) was employed to measure cognitive intellectual development on the Perry Scheme. In the area of psychosocial development, the following three instruments, which have referents in the theoretical and applied work of Chickering, were used:
The Ervin Identity Scale (Ervin, 1978)

The Mines-Jensen Interpersonal Relationship Inventory (Mines and Jensen, 1978)

The Barratt Developing Purposes Inventory (Barratt, 1978).

Student perceptions of their environment were assessed using the College And University Environment Scales (CUES II) developed by Pace in 1969. A more detailed discussion of these instruments follows.

**Perry Instrument**

The Perry Instrument (PI) was developed by Knefelkamp (1974) and Widick (1975) to assess a person's intellectual development along the scheme proposed by William Perry. Recently, the title of this instrument was changed to the Knefelkamp-Widick Sentence Stem And Essay Test. For purposes of this study and research report, however, the name in use at the project's onset (i.e., the Perry Instrument) will be retained. This instrument, through the use of five sentence completion stems and two essay questions, seeks to obtain a sample of a person's thinking structure. While the Perry Instrument asks questions based on issues of content, it is the structure of thought that is actually being measured.
Responses to each stem or essay on the PI are compared by qualified raters (or judges) to criteria defining positions in a scoring or rating manual; ratings are made and interpreted through the use of a manual and examples based on Perry's Theory. The rating procedure normally requires two or three raters who individually examine each subject's responses using structural cues, attitudinal and behavioral correlates, and the use of language. Raters initially examine structural cues: "What cognitive structure or set of assumptions would generate this sort of statement?" (Rodgers, 1978, p. 1). Responses are then analyzed by "assessing the patterns of attitudinal and behavioral correlates which seem related to different Perry stages" (Rodgers, 1978, p. 1). Qualitative differences in the use of concepts and language are also examined.

The scoring manual for the Perry Instrument has yet to be published. Studies using the instrument at various institutions (see Knefelkamp, 1974; Rodgers, 1977; Rodgers et al., 1978; Rodgers and Widick, 1980; Widick, 1975, 1977), however, indicate that the instrument does validly discriminate between persons in the 18-35 year age group. As with any instrument using
raters, scoring procedures are subject to rater bias and potential ambiguity in the use of specified rating "decision rules." In addition, the availability of trained raters and the amount of time required to rate the completed instrument are practical limitations to its more widespread use. To date, however, the Perry Instrument seems to be the most viable assessment tool for obtaining a sample of a student's thinking relative to the constructs advanced by Perry.

A copy of the Perry Instrument can be found in Appendix A.

The Iowa Instruments

Three instruments, to be described below, were developed at the University of Iowa in an attempt to respond to the need for more sophisticated instrumentation to assist in the study of college students on the dimensions suggested by Chickering (1969). Developed as a part of the Iowa Student Development Project (King, 1978), these instruments and the Chickering vector each purports to be primarily concerned with are:
The Ervin Identity Scale (Erwin, 1978) --
Chickering Vector: Establishing Identity

The Mines-Jensen Interpersonal Relationship Inventory (Mines and Jensen, 1978) --
Chickering Vector: Freeing Interpersonal Relationships

The Barratt Developing Purposes Inventory
(Barratt, 1978) --
Chickering Vector: Developing Purpose.

The newness of the instruments necessarily limits the availability of extensive validity and reliability data. The instruments' authors, however, have followed acceptable procedures to insure that the current versions of the instruments are acceptable as tools of and for scholarly study and research. One of the subsidiary purposes of this study is to provide additional data on which to further revise and/or improve upon the instruments.

**Ervin Identity Scale.** The Erwin Identity Scale (EIS) was developed by Erwin in 1978. As the title suggests, the instrument attempts to assess individuals on the student development vector of Establishing Identity. The EIS is based on the work of Erikson and Chickering, but receives most of its impetus from Chickering, who, as noted earlier, speaks to the issue
of how students develop as a result of their experience in college. Erwin cites as a major motivation for developing the instrument the lack of available instrumentation to assess Chickering's construct of identity.

To review, Establishing Identity is one of the developmental vectors in Chickering's scheme. As described by Chickering, identity is "that solid sense of self" that evolves as the first three developmental tasks—Developing Competence, Managing Emotions, and Developing Autonomy—are negotiated with some success. In turn, as one's identity becomes more solidly established, it provides the framework for development along the final three vectors—Freeing Interpersonal Relationships, Developing Purpose, and Developing Integrity (Chickering, 1969, p. 80).

As interpreted by Erwin, Establishing Identity involves three issues. The first and overriding aspect of identity is an increasing sense of self or confidence. According to Erikson, identity:

...is experienced preconsciously as a sense of psychological well-being. Its most obvious concomitants are a feeling of being at home in one's own body, a sense of "knowing where one is going," and an inner assuredness of anticipated recognition from those who count. Such a sense of identity,
however, is never gained nor maintained once and for all. Like a "good conscience," it is constantly lost and regained, although more lasting and economical methods of maintenance and restoration are evolved and fortified in late adolescence. (Erikson, 1959, p. 118)

Within this context, the development of identity for the young adult is seen to focus on two other issues: conceptions about body and appearance, and clarification of sexual identity.

The Erwin Identity Scale is a 58 Likert-like item instrument with three subscales reflecting the components of identity achievement discussed above: Confidence, Sexual Identity, Conceptions About Body And Appearance. According to Erwin:

Confidence is an assuredness in one's self and in one's capabilities. Confidence includes a conscious self-reliance while recognizing the necessary dependence on outside sources. This recognition is an awareness and faith in one's own capabilities yet a realization that there are limits to these processes. The confident person has some understanding of his or her limitations. A self-confident individual feels comfortable about expressing beliefs, making decisions, and behaving competently, even though action may not be taken in these areas.

Sexual Identity is a clarification, understanding, and an acceptance of one's sexual feelings. The person with a high degree of sexual identity recognizes his or her sexual feelings as natural and normal. There is an absence of guilt because of their presence. Sexual identity includes not only
a positive acceptance of one's sexual feelings, but also a control of one's sexual feelings. For instance, a person's sexual feelings are not overwhelming and do not interfere in interactions with other people. Moreover, sexual feelings are accepted as a normal part of close love relationships. This recognition and acceptance of sexual feelings does not imply sexual activity or a lack of it.

Identity also includes an accurate self-perception and acceptance of one's body and appearance. It is an issue of presentation of self. What do I think of my body? How do I conceive of myself and my appearance? An increasing acceptance of one's body particularly in relation to other people is a necessary component. In addition, one's appearance and dress are resolved issues representing a "varied balancing of personal preferences, the desires of others, and situational expectations" (Chickering, 1969, p. 83). A person with a high degree of identity exhibits a personal dress style governed by individual tastes rather than the dictates or expectations of other people (e.g., peers, people in authority).

(Erwin, 1978, pp. 4-5)

Studies using an initial 78-item version of the EIS, may be summarized as follows:

1. Reliability estimates (using Cronbach's Alpha), indicating the degree to which items within each subscale measure a common characteristic, were satisfactory (see Tables 1 and 2).

2. A moderate degree of relationship was found between the EIS subscale measures and lack of
### TABLE 1

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Internal Consistency Coefficients</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence</td>
<td>.75</td>
<td>72.8</td>
<td>10.2</td>
</tr>
<tr>
<td>Sexual Identity</td>
<td>.75</td>
<td>106.9</td>
<td>12.4</td>
</tr>
<tr>
<td>Conceptions About Body And Appearance</td>
<td>.65</td>
<td>100.7</td>
<td>9.9</td>
</tr>
</tbody>
</table>

(Note: Based on 78-item format with 32 freshmen, 29 seniors.)

(Erwin, 1978, p. 26)

### TABLE 2

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Internal Consistency Coefficients</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence</td>
<td>.85</td>
<td>69.2</td>
<td>12.8</td>
</tr>
<tr>
<td>Sexual Identity</td>
<td>.86</td>
<td>107.1</td>
<td>16.8</td>
</tr>
<tr>
<td>Conceptions About Body And Appearance</td>
<td>.65</td>
<td>92.4</td>
<td>10.5</td>
</tr>
</tbody>
</table>

(Note: Based on 78-item format with 15 high school and 15 graduate students.)

(Erwin, 1978, p. 29)
### Table 3

**Erwin Identity Scale**  
**Freshmen And Seniors—Subscale Inter-Correlations**

<table>
<thead>
<tr>
<th></th>
<th>Confidence</th>
<th>Sexual Identity</th>
<th>Body &amp; Appearance</th>
<th>FI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual Identity</td>
<td></td>
<td>.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conceptions About Body And Appearance</td>
<td>.63</td>
<td>.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Integration</td>
<td></td>
<td>.81</td>
<td>.52</td>
<td>.41</td>
</tr>
<tr>
<td>Lack Of Anxiety</td>
<td>.67</td>
<td>.42</td>
<td>.47</td>
<td>.71</td>
</tr>
</tbody>
</table>

(Erwin, 1978, p. 26)

Anxiety and personal integration (as measured by the Omnibus Personality Inventory, Heist and Yonge, 1968), two concepts theoretically linked to identity. These correlations are reported in Table 3.

3. No mean differences in EIS subscale scores were found between the following four college-age groups: freshman men, freshman women, senior men, senior women. This suggests that changes in identity as defined by Erwin might not occur
between the freshman and senior years as was postulated by Chickering, the EIS is validly measuring a conceptualization of identity which is discrepant from Chickering's, or the EIS is not validly measuring the construct that is defined by Chickering (Erwin, 1978).

Later studies conducted by Erwin in 1978, using the revised 58-item version of the EIS, stated the following:

4. Overall, reliability coefficients suggest that the three subscales are consistently measuring three constructs. Internal consistency coefficients ranged from .70 to .86 over the three EIS subscales (see Table 4).

5. Overall, at least when assessing high school students and college freshmen, the EIS appears to be sensitive to increases in students' sense of identity as defined by Chickering.

6. Confidence and the acceptance of the physical self are major issues facing students in the freshman year. "...a cultural shock transpires during the freshman year" (Erwin, 1978, p. 181).
# TABLE 4

**Erwin Identity Scale**

Subscale Means, Standard Deviations, Reliabilities

<table>
<thead>
<tr>
<th>Subscale</th>
<th>No. of Items</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIGH SCHOOL STUDENTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SINGLE TESTING (N=171):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confidence</td>
<td>18</td>
<td>57.5</td>
<td>9.2</td>
<td>.71</td>
</tr>
<tr>
<td>Sexual Identity</td>
<td>22</td>
<td>72.8</td>
<td>9.8</td>
<td>.70</td>
</tr>
<tr>
<td>Conceptions About</td>
<td>18</td>
<td>52.6</td>
<td>9.5</td>
<td>.74</td>
</tr>
<tr>
<td>Body And Appearance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUMMER TESTING (N=169):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confidence</td>
<td>18</td>
<td>63.6</td>
<td>10.73</td>
<td>.81</td>
</tr>
<tr>
<td>Sexual Identity</td>
<td>22</td>
<td>79.0</td>
<td>10.88</td>
<td>.75</td>
</tr>
<tr>
<td>Conceptions About</td>
<td>18</td>
<td>57.9</td>
<td>10.36</td>
<td>.79</td>
</tr>
<tr>
<td>Body And Appearance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-MONTH RETEST (N=55):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confidence</td>
<td>18</td>
<td>61.6</td>
<td>11.2</td>
<td>.83</td>
</tr>
<tr>
<td>Sexual Identity</td>
<td>22</td>
<td>76.9</td>
<td>10.4</td>
<td>.71</td>
</tr>
<tr>
<td>Conceptions About</td>
<td>18</td>
<td>57.5</td>
<td>9.7</td>
<td>.75</td>
</tr>
<tr>
<td>Body And Appearance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8-MONTH RETEST (N=74):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confidence</td>
<td>18</td>
<td>65.1</td>
<td>11.0</td>
<td>.83</td>
</tr>
<tr>
<td>Sexual Identity</td>
<td>22</td>
<td>80.9</td>
<td>10.9</td>
<td>.77</td>
</tr>
<tr>
<td>Conceptions About</td>
<td>18</td>
<td>57.7</td>
<td>11.8</td>
<td>.86</td>
</tr>
<tr>
<td>Body And Appearance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Erwin, 1978, pp. 47, 48, 54)
7. Evidence for convergent and divergent validity of the EIS was found through the joint administration of the EIS, the Simmons Identity Achievement Scale, Rotter's Internal-External Scale, and the ACI Inventory. As postulated: students tending to have a greater assuredness in themselves and tending to be more comfortable with their sexual feelings are also inclined to have undergone a crisis and commitment in their lives. Second, students tending to perceive events as contingent upon one's own behavior or personal control also tend to have a greater assuredness in themselves and to view their sexual feelings as natural and normal. Thirdly, there appears to be little or no relationship between identity as measured by the EIS and academic achievement, high school grades, and vocational interests as measured by the ACI inventory....

(Erwin, 1978, pp. 181-182)

8. A factor analysis of the 58 items of the EIS defined three factors, but only two can be said to have replicated EIS subscales, namely, Sexual Identity and Conceptions About Body And Appearance. The third factor contained items from both the Confidence and Conceptions About Body And Appearance Subscales. This analysis emphasizes the complexity of the concept of
identity. As such, Erwin postulated the need for additional subscales to adequately define the construct.

A copy of the Erwin Identity Scale (EIS) can be found in Appendix B.

**Mines-Jensen Interpersonal Relationship Inventory:**
The Mines-Jensen Interpersonal Relationship Inventory (MIRI) was developed by Mines and his colleagues at the University of Iowa in 1978. This instrument attempts to assess student development on Chickering's fifth vector, Freeing Interpersonal Relationships.

According to Chickering, Freeing Interpersonal Relationships involves developing a tolerance for a wider range of people, and a shift in the quality of one's intimate relationships. By increased tolerance, Chickering refers to:

> an increasing openness and acceptance of diversity which allows our sensitivities to expand and which increases the range of alternatives for satisfying exchanges and for close and lasting friendships.
> (Chickering, 1969, p. 94)

There exists an increased capacity to respond to persons in their own right rather than in their stereotyped roles.
With the firm establishment of a sense of identity, the quality of intimate relationships also shifts. Greater trust, independence, and individuality are in evidence.

The shift in relationships with close friends is away from dependence toward an interdependence that creates a large space around each person and makes possible more wide-ranging freedom of movement and stability. When this change has occurred, close feelings persist despite sharp disagreements. They are quickly resumed at the same level after periods of long separation or non-communication. (Chickering, 1969, p. 94)

The current form of the MIRI has two subscales dealing in four content areas. The four content areas are peers, adults, friends, and significant others. The two subscales are the 20 Likert-like item Tolerance Subscale, and the 22 Likert-like item Quality Of Relationships Subscale. The most recent studies by Mines (1978) using the MIRI had three purposes:

1. To revise earlier versions of the MIRI,
2. To assess change in college freshmen, and
3. To gather information regarding experiences hypothesized by Chickering to be related to freeing interpersonal relationships.
As a result of these studies, reported subscale (Tolerance and Quality Of Relationships) reliabilities were found to be moderate. Reliability information on the subscales obtained as a result of three administrations of the instrument over an eight month period can be found in Table 5. Subscale inter-correlations were low as postulated, but not orthogonal. These inter-correlations are reported in Table 6. According to Mines:

Paired sample t-tests were performed on the regressed mean scores of the Tolerance and Quality of Relationships Subscales. There were significantly higher scores on the Tolerance scale \((t(61)=3.67, p < .001)\) and on the Quality of Relationships scale \((t(61)=3.56, p < .001)\) for the 4-month retest. There were significantly higher scores on the Tolerance scale \((t(35)=4.56, p < .0001)\) and on the Quality of Relationships scale \((t(35)=2.17, p < .037)\) for the 8-month retest. The means for both testings were ordered in the theoretically predicted direction as suggested by Chickering (1969).

(Mines, 1978, p. 4)

Additional information on the validity of the instrument is not available at this time.

Mines concluded from his studies that (1) interaction with a diversity of people contributes to development on this dimension, (2) changes in interpersonal relationships do take place at a large
### TABLE 5

**Mines-Jensen Interpersonal Relationship Inventory**

Subscale Means, Standard Deviations, Reliabilities

<table>
<thead>
<tr>
<th>Subscale</th>
<th>No. of Items</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COLLEGE STUDENTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUMMER TESTING (N=168):</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance</td>
<td>20</td>
<td>2.75</td>
<td>----</td>
<td>.65</td>
</tr>
<tr>
<td>Quality</td>
<td>22</td>
<td>2.77</td>
<td>----</td>
<td>.68</td>
</tr>
<tr>
<td>4-MONTH RETEST (N=62):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance</td>
<td>20</td>
<td>2.88</td>
<td>.28</td>
<td>.66</td>
</tr>
<tr>
<td>Quality</td>
<td>22</td>
<td>3.11</td>
<td>.26</td>
<td>.68</td>
</tr>
<tr>
<td>8-MONTH RETEST (N=36):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance</td>
<td>20</td>
<td>2.89</td>
<td>.21</td>
<td>.44</td>
</tr>
<tr>
<td>Quality</td>
<td>22</td>
<td>2.98</td>
<td>.27</td>
<td>.72</td>
</tr>
</tbody>
</table>

*(Mines, 1978, p. 10)*

### TABLE 6

**Mines-Jensen Interpersonal Relationship Inventory**

Inter-Correlations For Tolerance And Quality Subscales

<table>
<thead>
<tr>
<th>Testing</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer</td>
<td>.28</td>
</tr>
<tr>
<td>4-Month Betest</td>
<td>.31</td>
</tr>
<tr>
<td>8-Month Betest</td>
<td>.26</td>
</tr>
</tbody>
</table>

*(Mines, 1978, p. 10)*
university, and (3) interaction with faculty was associated with such developmental changes.

As the reader can perceive, work using the MIRI is in its early stages. The instrument does appear to have been moderately successful, however, in assessing students' development in the area of freeing interpersonal relationships, and was thus included in this research study. A copy of the Mines-Jensen Interpersonal Relationship Inventory (MIRI) can be found in Appendix C.

**Barratt Developing Purposes Inventory.** Also developed in 1978, the Developing Purposes Inventory (DPI) seeks to assess individuals on Chickering's vector of Developing Purpose. Barratt notes that Developing Purpose is an often stated goal advanced for students by educational institutions. This goal, however, is often set forth in global terms; not only is there a failure to make its components more specific, but there exists a lack of adequate assessment techniques to ascertain student progress along this developmental dimension. Barratt's efforts are among the first in this area.
The initial form of the DPI closely followed Chickering's theoretical propositions concerning this vector. Chickering noted that at this time in their lives, young adults deal with the two questions of "Who am I going to be?" and "Where am I going?" Development takes place as these issues are addressed in three domains:

1. Avocational and recreational interests.
2. Vocational plans and aspirations.
3. General life style considerations.

Development of purpose, then, requires formulating plans and priorities that integrate avocational and recreational interests, vocational plans, and life style considerations. With such integration, life flows with direction and meaning.

(Chickering, 1969, p. 17)

The second version of the DPI (DPI-2) also followed Chickering's constructs, but grouped items representing the behaviors relating to the development of a sense of purpose into more cohesive subscales. The DPI-2 subscale definitions, however, are somewhat different from Chickering's conceptualizations. As summarized by Barratt:

Avocational  Recreational  Interests:
Chickering's construct involves the extent to which a student has formed a pattern of regular or frequent behaviors which reflect a reduced set of activities which are of
specific interest. He also includes a broadening of general interests (e.g., occasional participation in a wide range of activities), the notion of a general career choice and life direction, marriage considerations and the stabilization of social relationships.

The revision in Form 2 includes: active participation in fewer recreational interests, a broadening of interest and occasional participation in a wider variety of recreational and social activities, prioritizing social interrelationships, changing dating attitudes and considerations of how marriage might affect one's life. The revision does not include life direction and career choice behaviors or relationships with a spouse in this section, as did Chickering's vector.

**Vocational Interests:** Chickering postulates that this subvector reflects the extent to which the student has become seriously committed to a specific direction in relation to career choice. It is, however, not necessary to have made a specific occupational choice to be considered 'highly developed' in this area. Three of the behavior areas suggested by him are study habits, attitudes toward study and how much the student considers him/herself as a member of his/her major field. Chickering hypothesized that women's development in this subvector would be adversely affected by uncertain marriage considerations which would result in career confusion.

The revision in Form 2 includes the following types of behaviors: career considerations, both specific and general (transferred from Chickering's Avocational Recreational scale), work and study habits and attitudes, tolerance for other points of view, level of interest in class work and major, level of socialization within major field and participation in work or study requiring extra effort.
Style Of Life: Chickering's conceptualization concerns the extent to which the student has integrated life vocational and non-vocational plans into a viable and meaningful whole. Included here are moral and ethical developments as they relate to the type of life that the student is leading and would like to lead in the future.

In the revision, this subvector was reduced to three elemental classes of behaviors: relationships with the community, relationships with marriage partners, children and significant others, and relationships with the self. Interrelationships among these elements are also considered. In addition, goal setting for projected activity is included. Development is associated with increasing certainty of plans and actions in a long range framework. This revision has retained Chickering's idea, but has reclassified and narrowed the focus of behaviors being examined in the individuals to his or her life style.

(Barratt, 1978, pp. 4-6)

Form 3 (DPI-3) of the Barratt instrument reflects a revised scoring technique of Form DPI-2. Six new subscales have been developed "which conceptually clarify developing purposes and provide more specificity" in what is a broad area of development. The new subscales are:

1. Student Behaviors: This subscale reflects the extent to which a student has mastered the skills necessary to be a successful student, or to be good at his or her job. Specifically,
these include study habits, study attitudes, attitudes toward school work and instructors and attitudes toward college.

2. **Professional Behaviors**: This subscale reflects the extent to which the student is becoming a member of his or her major field or profession. Behaviors included here are the student's attitude toward the subject matter of his or her major or area of interest (as opposed to attitude toward school work as in the previous scale), the socialization of the individual into the field through social encounters and interactions, and how much the student feels like a member of the field of his or her major by having opinions about the field and feeling competent about his/her abilities.

3. **Career Behaviors**: This subscale reflects the student's plans for the future in relation to his/her major or field of interest or in the world of work in general. Specific behaviors are articulated plans for the future, knowledge of the requirements of the world of work, goal setting for certain types of positions, and
participating in activities seen as necessary for career plans.

4. **Recreation Activities**: This subscale reflects the extent to which a student actively pursues a reduced set of activities and also broadens his/her participation in new types of activities and events, exposing him/herself to new and different things.

5. **Recreation Social**: This subscale reflects the extent to which the student is expanding his/her social awareness of others and is becoming socially involved with a wider variety of people. The freeing of sexual stereotypes is also included in this area.

6. **Life Style**: This subscale is concerned with the extent to which a student has formed an image of the life style in which s/he would like to become involved. This includes behaviors related to marriage, morality and values, community activities, and the place of material things in his/her life.

(Barratt, 1978, pp. 5-6)
According to Barratt, the first three subscales closely approximate Chickering's notion of vocational interest. The two Recreation subscales, Activities and Social, closely parallel Chickering's avocational dimension. Barratt's Life Style Subscale is a reflection of Chickering's similarly named construct. The new subscales seek to provide more and richer information than earlier versions of the DPI based explicitly on Chickering's work. In the case of the Life Style Subscale, for example, an effort is made to make the ambiguous notions advanced by Chickering more explicit.

Reliabilities using Form 2 of the DPI have been moderate, but the subscale constructs in DPI-2 do appear to measure more consistently. These reliabilities are reported in Table 7. Subscale intercorrelations for the DPI-2 (as reported in Table 8) indicate that while the subscales are each reflecting separate constructs, there is moderate overlap between the domains being assessed. The test-retest correlations using the DPI-2 show stability over time. The correlations are reported in Table 9.
### TABLE 7

**Barratt Developing Purposes Inventory-2**  
*Subscale Reliabilities In Cronbach's Alpha*  
*Standard Scoring Technique*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Summer 1977</th>
<th>Fall 1977</th>
<th>Spring 1978</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avocational Recreational Interests (ARI)</td>
<td>.53</td>
<td>.27</td>
<td>.70</td>
</tr>
<tr>
<td>Vocational Interests (VI)</td>
<td>.73</td>
<td>.50</td>
<td>.79</td>
</tr>
<tr>
<td>Style Of Life (LS)</td>
<td>.77</td>
<td>.79</td>
<td>.81</td>
</tr>
</tbody>
</table>

*(Barratt, 1978, p. 15)*

### TABLE 8

**Barratt Developing Purposes Inventory-2**  
*Subscale Inter-Correlations*  
*Standard Scoring Technique*

<table>
<thead>
<tr>
<th></th>
<th>Summer 1977:</th>
<th>Fall 1977:</th>
<th>Spring 1978:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale VI</td>
<td>.50</td>
<td>.50</td>
<td>.41</td>
</tr>
<tr>
<td>LS</td>
<td>ARI</td>
<td>.28</td>
<td>.58</td>
</tr>
<tr>
<td>ARI</td>
<td>.64</td>
<td>VI</td>
<td>.59</td>
</tr>
<tr>
<td>VI</td>
<td>.68</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(Barratt, 1978, p. 15)*
### TABLE 9

**Barratt Developing Purposes Inventory-2**

**Test-Retest Correlations By Subscale**

Standard Scoring Technique

<table>
<thead>
<tr>
<th>Subscale</th>
<th>3-Month Retest</th>
<th>6-Month Retest</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABI</td>
<td>.611</td>
<td>.627</td>
</tr>
<tr>
<td>VI</td>
<td>.545</td>
<td>.750</td>
</tr>
<tr>
<td>LS</td>
<td>.816</td>
<td>.553</td>
</tr>
</tbody>
</table>

(Barratt, 1978, p. 15)

For the experimental scoring technique, reliabilities are more consistent than those achieved using earlier scoring techniques. Subscale inter-correlations are also much lower with this procedure. Tables 10 and 11 report these correlations.

In summary, according to Barratt's work, the DPI "has been moderately successful in assessing student's development of a sense of purpose" (Barratt, 1978, p. 13). It is worthy of further investigation and appears to offer a viable tool for research concerning the young adult. A copy of the Developing Purposes Inventory (DPI) can be found in Appendix D.
TABLE 10

Barratt Developing Purposes Inventory-2
Subscale Reliabilities In Cronbach's Alpha
Revised Scoring Technique

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Items</th>
<th>Summer 1977</th>
<th>Fall 1977</th>
<th>Spring 1978</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Behaviors</td>
<td>10</td>
<td>.68</td>
<td>.61</td>
<td>.80</td>
</tr>
<tr>
<td>Professional Behaviors</td>
<td>8</td>
<td>.69</td>
<td>.48</td>
<td>.84</td>
</tr>
<tr>
<td>Career Behaviors</td>
<td>8</td>
<td>.75</td>
<td>.78</td>
<td>.78</td>
</tr>
<tr>
<td>Recreation Activities</td>
<td>5</td>
<td>.41</td>
<td>.30</td>
<td>.46</td>
</tr>
<tr>
<td>Recreation Social</td>
<td>4</td>
<td>(not available)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life Style</td>
<td>10</td>
<td>.71</td>
<td>.70</td>
<td>.66</td>
</tr>
</tbody>
</table>

(Barratt, 1978, p. 16)
<table>
<thead>
<tr>
<th>Subscale</th>
<th>PB</th>
<th>CB</th>
<th>RA</th>
<th>RS</th>
<th>LS*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COLLEGE STUDENTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUMMER 1977 TESTING:</strong></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Student Behaviors (SB)</td>
<td>.52</td>
<td>.38</td>
<td>.17</td>
<td>.13</td>
<td>.31</td>
</tr>
<tr>
<td>Professional Behaviors (PB)</td>
<td>.51</td>
<td>.34</td>
<td>.13</td>
<td>.31</td>
<td></td>
</tr>
<tr>
<td>Career Behaviors (CE)</td>
<td>.17</td>
<td>.16</td>
<td>.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation Activities (BA)</td>
<td></td>
<td></td>
<td></td>
<td>.13</td>
<td>.14</td>
</tr>
<tr>
<td>Recreation Social (RS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.18</td>
</tr>
<tr>
<td><strong>FALL 1977 RETEST:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Behaviors (SB)</td>
<td>.39</td>
<td>.52</td>
<td>.06</td>
<td>.08</td>
<td>.21</td>
</tr>
<tr>
<td>Professional Behaviors (PB)</td>
<td>.56</td>
<td>.30</td>
<td>.08</td>
<td>.34</td>
<td></td>
</tr>
<tr>
<td>Career Behaviors (CE)</td>
<td>.15</td>
<td>.02</td>
<td>.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation Activities (BA)</td>
<td></td>
<td></td>
<td>.23</td>
<td>.20</td>
<td></td>
</tr>
<tr>
<td>Recreation Social (RS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.14</td>
</tr>
<tr>
<td><strong>SPRING 1978 RETEST:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Behaviors (SB)</td>
<td>.75</td>
<td>.57</td>
<td>.42</td>
<td>.59</td>
<td>.53</td>
</tr>
<tr>
<td>Professional Behaviors (PB)</td>
<td>.19</td>
<td>.15</td>
<td>.44</td>
<td>.34</td>
<td></td>
</tr>
<tr>
<td>Career Behaviors (CE)</td>
<td>.46</td>
<td>.34</td>
<td>.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation Activities (BA)</td>
<td></td>
<td></td>
<td>.16</td>
<td>.44</td>
<td></td>
</tr>
<tr>
<td>Recreation Social (RS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.49</td>
</tr>
</tbody>
</table>

*LS = Life Style

(Barratt, 1978, pp. 16-17)
College And University Environment Scales

As noted by Astin:

The task of defining the college environment is one of identifying and measuring those institutional characteristics that are likely to have some impact on the student's development.

(Astin, 1968, p. 2)

Hence, an environmental assessment instrument was included in this study for two primary purposes:

1. Descriptive - Defining and assessing differences between the perceived environments at Kenyon College and The Ohio State University.

2. Interpretative - Identifying those environmental differences that may be related to differential college impacts as defined by the developmental measurements discussed previously (i.e., Perry's cognitive development and Chickering's psychosocial development).

Within this framework, two primary questions are addressed within this portion of the investigation:

1. Are perceptions of the environment held by students at Kenyon College similar to or different from those held by students in the
Arts and Sciences College at The Ohio State University? Are perceptions of the environment held by freshmen and seniors within each institution similar or different?

2. What inferences can be made as to the direction and amount of developmental change experienced by students at Kenyon College and Arts and Sciences Curriculum students at The Ohio State University as a result of being enrolled in the respective institutions.

In his introduction to the College and University Environment Scales, Second Edition (1969), Pace notes that various questions can form the basis for environmental inquiry. These include: What are the demographic features of the environment?, Who lives in the environment?, How do students behave in the environment? Pace stresses that each of these questions has merit; he argues, however, that regardless of individual behavior, demographic features, etc.:

...the environment, in a psychological sense, is what it is perceived to be by the people who live in it. Even if one grants the possibility of self deception on a large scale, the perceived reality, whatever it is, influences one's behavior and response. Thus, realistically, what people think is true is true for them. (Pace, 1969, p. 7)
Hence, the assessment of the environment resulting from the administration of the CUES addresses the question, "What do students perceive to be characteristic of the environment?"

The first edition of CUES and a Preliminary Technical Manual were published by Educational Testing Service in 1963. Due to its widespread use, it was possible to develop a second edition of the CUES and a new Technical Manual (1969). CUES II, as the second edition is referred to, has a more representative norm group of colleges and universities, eliminates "poor" items identified in CUES I, and contains new items reflecting changes in the higher education setting. Due to its continued widespread use and its strength as a research instrument, the CUES II remains a viable tool for use in the study of educational institutions.

CUES II consists of 100 of the original 150 True-False items found in CUES I. In addition, 60 True-False items of an "experimental" nature were included in CUES II. The 160 True-False items in CUES II, which require approximately 30 minutes to complete, are statements about college life:
The atmosphere of any campus is a mixture of features and attitudes, including rules and procedures, faculty characteristics, student interests, courses of study, extracurricular activities, and the extent to which there is communication among students, faculty, and administration, and the degree of awareness, involvement, and controversy. The emphasis and variations are among the factors that explain the differences among colleges and universities. The primary purpose of CUES II is to describe that atmosphere.

(Educational Testing Service, 1971, p. 3)

Hence,

The respondents...act as reporters by indicating which of the 160 statements in the questionnaire are generally characteristic of their college. They have lived in its environment, participated in its activities, seen its features, and sensed its attitudes. What kind of place do they perceive it to be? Their aggregate judgment provides an opinion poll that helps define the prevailing campus atmosphere. Results are computed and reported for groups, not individuals, and the scale scores describe institutions rather than individuals.

(Educational Testing Service, 1971, pp. 3-4)

The main dimensions of the environment which are described by CUES II are:

Scale 1. Practicality. The 20 items that contribute to the score for this scale describe an environment characterized by enterprise, organization, material benefits, and social activities. There are both vocational and collegiate emphases. A kind of orderly supervision is evident in the administration and the classwork. As in many organized societies there is also some personal benefit and prestige to be obtained by operating in the system—knowing the right people, being in the right clubs, becoming a
leader, respecting one's superiors, and so forth. The environment, though structured, is not repressive because it responds to entrepreneurial activities and is generally characterized by good fun and school spirit.

Scale 2. Community. The items in this scale describe a friendly, cohesive, group-oriented campus. There is a feeling of group welfare and group loyalty that encompasses the college as a whole. The atmosphere is congenial; the campus is a community. Faculty members know the students, are interested in their problems, and go out of their way to be helpful. Student life is characterized by togetherness and sharing rather than by privacy and cool detachment.

Scale 3. Awareness. The items in this scale seem to reflect a concern about and emphasis upon three sorts of meaning—personal, poetic, and political. An emphasis upon self-understanding, reflectiveness, and identity suggests the search for personal meaning. A wide range of opportunities for creative and appreciative relationships to painting, music, drama, poetry, sculpture, architecture, and the like suggests the search for poetic meaning. A concern about events around the world, the welfare of mankind, and the present and future conditions of man suggests the search for political meaning and idealistic commitment. What seems to be evident in this sort of environment is a stress on awareness, an awareness of self, of society, and of aesthetic stimuli. Along with this push toward expansion, and perhaps as a necessary condition for it, there is an encouragement of questioning and dissent and a tolerance of nonconformity and personal expressiveness.

Scale 4. Propriety. These items describe an environment that is polite and considerate. Caution and thoughtfulness are evident. Group standards of decorum are important. There is an absence of demonstrative,
assertive, argumentative, risk-taking activities. In general, the campus atmosphere is mannerly, considerate, proper, and conventional.

Scale 5. Scholarship. The items in this scale describe an environment characterized by intellectuality and scholastic discipline. The emphasis is on competitively high academic achievement and a serious interest in scholarship. The pursuit of knowledge and theories, scientific or philosophical, is carried on rigorously and vigorously. Intellectual speculation, an interest in ideas, knowledge for its own sake, and intellectual discipline—all these are characteristic of the environment.

Scale 6. Campus Morale. The items in this scale describe an environment characterized by acceptance of social norms, group cohesiveness, friendly assimilation into campus life, and at the same time, a commitment of intellectual pursuits and freedom of expression. Intellectual goals are exemplified and widely shared in an atmosphere of personal and social relationships that are both supportive and spirited.

Scale 7. Quality Of Teaching And Faculty-Student Relationships. This scale defines an atmosphere in which professors are perceived to be scholarly, to set high standards, to be clear, adaptive, and flexible. At the same time, this academic quality of teaching is infused with warmth, interest, and helpfulness toward students.

(Pace, 1969, pp. 11-12)

In interpreting CUES II results from students enrolled at Kenyon and in the Arts and Sciences Curriculum at Ohio State, the following were examined:
1. The distribution of the seven COES II scale scores for Kenyon freshmen, Kenyon seniors, Ohio State freshmen, and Ohio State seniors.

2. Comparisons of the seven COES II scale scores between:
   a) Kenyon freshmen and Kenyon seniors.
   b) Ohio State freshmen and Ohio State seniors.
   c) Kenyon freshmen and Ohio State freshmen.
   d) Kenyon seniors and Ohio State seniors.

3. An examination of individual scale items in an attempt to identify the source of major differences between classes within an institution, or between institutions.

The extensive use of COES I and COES II since 1963 has enabled its author to report extensive results on the instrument's reliability and validity. Pace summarizes:

"...the overall network of correlations between COES scores and other data can be characterized as broadly supportive of associations one might reasonably expect. The conclusion from such associations is that campus atmosphere, as measured by COES, is a concept buttressed by a good deal of concurrent validity."

(Pace, 1969, p. 54)
In terms of reliability, there exists a high degree of internal consistency on all CUES II scales. Based on data collected from 100 institutions in a national reference group, Tables 12, 13, 14, 15, and 16 summarize the correlations obtained. In the same study of 100 institutions, CUES II was found to discriminate between eight categories of institutions:

1. highly selective liberal arts colleges.
2. highly selective universities, public and private.
3. general liberal arts colleges.
4. general universities, public and private.
5. state colleges.
6. strongly denominational liberal arts colleges.
7. colleges and universities emphasizing engineering and the sciences.
8. teachers colleges and others with major emphasis on teacher education.

Pace also presents evidence of the stability of CUES II scale scores at individual institutions over time:

Test-retest comparisons made from comparable samples of reporters over a one- to two-year period, or to comparisons of scores from different groups judged to be qualified reporters...have been tabulated and summarized for 25 different colleges and universities. With 5 scale scores for each of 25 institutions there are 125 comparisons.
### TABLE 12
College And University Environment Scales II
Distribution Of Item-Scale Correlations

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Pract</th>
<th>Comm</th>
<th>Aware</th>
<th>Prop</th>
<th>Scholar</th>
</tr>
</thead>
<tbody>
<tr>
<td>.90 - .99</td>
<td>1</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>9</td>
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<tr>
<td>.80</td>
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<tr>
<td>.70</td>
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<td>5</td>
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<tr>
<td>.60</td>
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<tr>
<td>.40 - .49</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No. of items: 20 20 20 20 20

(Pace, 1969, p. 38)

### TABLE 13
College And University Environment Scales II
Location Of Highest Item-Scale Score Correlations

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pract</th>
<th>Comm</th>
<th>Aware</th>
<th>Prop</th>
<th>Sch</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practicality</td>
<td>19</td>
<td></td>
<td>1</td>
<td>20</td>
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</tr>
<tr>
<td>Community</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Awareness</td>
<td></td>
<td>20</td>
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<tr>
<td>Propriety</td>
<td>1</td>
<td></td>
<td>19</td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Scholarship</td>
<td></td>
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<td></td>
<td></td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

(Pace, 1969, p. 39)
<table>
<thead>
<tr>
<th>Correlations</th>
<th>Pract</th>
<th>Comm</th>
<th>Aware</th>
<th>Prop</th>
<th>Scholar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practicality</td>
<td>0.62</td>
<td>0.20</td>
<td>-0.20</td>
<td>0.09</td>
<td>-0.35</td>
</tr>
<tr>
<td>Community</td>
<td>0.11</td>
<td>0.72</td>
<td>0.08</td>
<td>0.40</td>
<td>0.09</td>
</tr>
<tr>
<td>Awareness</td>
<td>-0.24</td>
<td>0.10</td>
<td>0.76</td>
<td>0.08</td>
<td>0.43</td>
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<td>Propriety</td>
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<td>0.43</td>
<td>-0.01</td>
<td>0.65</td>
<td>0.09</td>
</tr>
<tr>
<td>Scholarship</td>
<td>-0.43</td>
<td>-0.14</td>
<td>0.49</td>
<td>0.13</td>
<td>0.80</td>
</tr>
</tbody>
</table>

(Pace, 1969, p. 39)

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Pract</th>
<th>Comm</th>
<th>Aware</th>
<th>Prop</th>
<th>Scholar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practicality</td>
<td>0.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>-0.34</td>
<td>0.09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness</td>
<td>0.10</td>
<td>0.53</td>
<td>-0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propriety</td>
<td>-0.50</td>
<td>0.12</td>
<td>0.56</td>
<td>0.12</td>
<td></td>
</tr>
</tbody>
</table>

(Pace, 1969, p. 39)
TABLE 16
College And University Environment Scales II
Reliability Estimates

<table>
<thead>
<tr>
<th>Scale</th>
<th>Coefficient Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practicality</td>
<td>.89</td>
</tr>
<tr>
<td>Community</td>
<td>.92</td>
</tr>
<tr>
<td>Awareness</td>
<td>.94</td>
</tr>
<tr>
<td>Propriety</td>
<td>.89</td>
</tr>
<tr>
<td>Scholarship</td>
<td>.90</td>
</tr>
</tbody>
</table>

(Face, 1969, p. 44)

Of this number 80 percent have differed by three points or less and 90 percent have differed by 4 points or less.

From this empirical evidence it seems reasonable to say that, in general, a given score is probably quite stable within a margin of 3 points. The chances are 4 out of 5 that, with a comparable sample, the obtained score will not differ by more than 3 points; and the chances are 3 out of 5 that it will not differ by more than 2 points.

(Face, 1969, p. 45)

It should be noted that the usual methods for establishing reliability of scale scores at an institution (test-retest, split halves, Kuder-
Richardson, etc.) are not applicable to the CUES, for the CUES provides only one score (per scale) for an institution, not a distribution of scores for each scale.

A copy of the College And University Environment Scales, Second Edition, can be found in Appendix E. The reader's attention is called to items 60, 96, and 143. These items have been reworded from the original CUES II instrument to make them more "current and up-to-date." The original items with their reworded versions are as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Original Wording</th>
<th>Rewording</th>
</tr>
</thead>
<tbody>
<tr>
<td>60.</td>
<td>Student rooms are more likely to be decorated with pennants and pin-ups than with paintings, carvings, mobiles, fabrics, etc.</td>
<td>Student rooms are more likely to be decorated with posters than with paintings, carvings, mobiles, fabrics, etc.</td>
</tr>
<tr>
<td>96.</td>
<td>Bermuda shorts, pin-up pictures, etc., are common on this campus.</td>
<td>Cut-offs and centerfold pictures are common on this campus.</td>
</tr>
<tr>
<td>143.</td>
<td>Faculty members always wear coats and ties on the campus.</td>
<td>Faculty men always wear coats and ties and faculty women always wear dresses on campus.</td>
</tr>
</tbody>
</table>

The minor nature of these rewordings was not expected to alter the intended meaning of the individual items.
Data Collection

The data from the five instruments discussed above were collected by administering the instruments to randomly selected samples of freshman and senior students enrolled at Kenyon College and in the Arts and Sciences Curriculum at The Ohio State University. The general sequence of events was as follows:

1. Random sample selection took place.

2. Students at both Kenyon and Ohio State were notified through the mail that they had been selected to participate in the study. The letter which they received (see Appendix F) provided details of the project and indicated the nature of their participation. Voluntary participation and respondent anonymity were emphasized.

3. Each student selected to take part in the study was asked to return a postcard (see Appendix G) on which he or she was asked to indicate whether he or she would participate.

4. Efforts were made through personal contact to encourage participation.
5. A second letter (see Appendix B) was sent to all participants elaborating on the instrument administration and expressing appreciation for the participant's willingness to assist with the project.

6. An open information session was held for participants to ask any questions they might have.

7. The instruments were administered on two occasions at each institution. The dates and locations were determined in conjunction with the respective officials at the two institutions. A General Instruction sheet and consent forms (see Appendix I) were distributed with the instruments. The approximate time required for completing the set of five instruments was as follows:

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Time (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perry Instrument</td>
<td>35</td>
</tr>
<tr>
<td>Erwin Identity Scale</td>
<td>30</td>
</tr>
<tr>
<td>Mines-Jensen Interpersonal Relationship Inventory</td>
<td>30</td>
</tr>
<tr>
<td>Barratt Developing Purposes Inventory</td>
<td>30</td>
</tr>
<tr>
<td>College and University Environment Scales II</td>
<td>30</td>
</tr>
</tbody>
</table>

The total time required was 155 minutes (2 hours and 35 minutes). The order in which students
completed the instruments was systematically altered from participant to participant.

8. A variety of efforts were made to insure as large a response rate as possible. Opportunity was made available for students to complete the instruments through the mail if they were unable to attend one of the administration sessions (see Appendix J). Given the nature of the instrumentation, it was felt that permitting subjects to complete the instruments at their leisure would not compromise the results. Individuals who indicated that they would participate but did not were contacted in person and/or by mail to encourage their participation (see Appendix K for sample letters).

Data Analysis

The nature of this study is exploratory, descriptive, ex post facto, and simple cross-sectional. As noted earlier, this study is part of a larger research project in which separate sets of data were compiled for men and for women (see Heidke, 1982). The analysis of the data was undertaken as follows:
Student Group Profiles. This aspect of the analysis was purely descriptive. Individual scores on the five instruments being used were grouped: class (i.e., freshman and senior), institution (i.e., Kenyon and Ohio State), and institution by class profiles were compiled. Where appropriate, group data such as frequencies, means, ranges, standard deviations, etc. were compiled and reported.

Note that the College And University Environment Scales (CUES II) are assessing perceptions of the institution, or more explicitly, the institution environment (or sub-environments within the institution). Thus, the unit for scoring the CUES II is not the individual student, but the individual item:

Does this item describe a condition or event or practice characteristic of the institution, in the sense that the vast majority of reporters (students) who live in the environment recognize it as true of the environment? If it does, then the item is a potential stimulus for some sort of adaptive response. The number of such characteristics, or potential stimuli, all falling along a single dimension such as Scholarship indicates the degree to which the institution exerts a press of stimulus in the direction of Scholarship. The result is a count of dominant collective perceptions, not an average of individual perceptions. An institutional score, therefore, is quite different in meaning and in educational significance from an average of individual scores.

(Pace, 1969, p. 45)
Because a CUES II score is not an average of individual scores, tools of analysis such as means, standard deviations, and t-tests are inappropriate to use with this instrument. Hence, as stated earlier in this paper, in interpreting CUES II results from students at Kenyon and the Arts and Sciences Curriculum at Ohio State, the following were explored:

1. The distribution of the seven CUES II scale scores for Kenyon freshmen, Kenyon seniors, Ohio State freshmen, and Ohio State seniors.

2. Comparisons of the seven CUES II scale scores between:
   a) Kenyon freshmen and Kenyon seniors.
   b) Ohio State freshmen and Ohio State seniors.
   c) Kenyon freshmen and Ohio State freshmen.
   d) Kenyon seniors and Ohio State seniors.

3. An examination of individual scale items in an attempt to identify the source of major differences between classes within an institution, or between institutions.

**Group Comparisons.** Analysis of the data from the Erwin Identity Scale, the Mines-Jensen Interpersonal Relationship Inventory, and the Barratt Developing
Purposes Inventory was accomplished using Multivariate Analysis of Variance (MANOVA) and Linear Discriminant Analysis techniques. For each of the three instruments, a 2X2 (Institution by Class) Multivariate Analysis of Variance was conducted using the Statistical Package for the Social Sciences (Hull and Nie, 1981; Nie, et al., 1975). The scores on the subscales of each instrument represented the multiple dependent variables. Appropriate tests of significance (Pillai's V, Approximate F statistic) were made to test for overall institution by class interaction effects, overall main class effects, and overall main institution effects. Where appropriate, follow-up Linear Discriminant Analysis was performed to investigate any statistically significant effects.

Analysis of the data from the Perry Instrument took two forms. The first procedure used techniques suggested by Kohlberg in his analysis of data in the area of cognitive moral development (Kohlberg, 1978). Judges' ratings of a student's responses to the Perry scale items were weighted and combined to provide an overall Perry score on a continuous scale for the student. The resulting scores for all students were
examined using a two-way Analysis of Variance design, with institution and class as the two independent variables. Main effects for institution by class interaction were examined, as well as main effects for institution and class. The use of post-hoc pairwise comparisons were considered where appropriate to further investigate any significant effects.

The second procedure in analyzing the Perry Instrument data examined whether membership in each of the four groups being studied (Kenyon seniors, Kenyon freshmen, Ohio State seniors, and Ohio State freshmen) was related to the scores obtained on the Perry Instrument. Initially, group membership and Perry scale scores were treated as nominal data. The Chi-square statistic was used to examine the relationships, if any, which existed. Then, the Perry data were again examined as continuous measures. Group membership was analyzed as a series of dichotomies:

- Kenyon freshmen vs. Kenyon seniors
- Ohio State freshmen vs. Ohio State seniors
- Kenyon freshmen vs. Ohio State freshmen
- Kenyon seniors vs. Ohio State seniors.
Point Biserial correlation coefficients were computed to examine the relationship between dichotomous group membership and Perry scale scores.

From an examination of the results obtained from the administration of the various instruments, inferences will be made as to the differential effects of college attendance on student development at the institutions studied. Any such inferences will be subject, however, to the limitations of cross-sectional, ex post facto investigation which is conducted at selected institutions for exploratory and descriptive purposes. These limitations are discussed below.

Limitations Of The Study

Limitations normally associated with descriptive, cross-sectional, ex post facto studies are inherent in the design of this study. These limitations include the following:

1. Because students are not assigned randomly to Kenyon and Ohio State, differences in personality characteristics may account for differences in perceptions about the
environment. This does not minimize the fact, however, that the perception is the reality for the students at each institution, even given possible differences in the students' personality characteristics.

2. It is assumed that the freshmen sampled were no different than the seniors were when they entered their respective institutions. It should be noted that no major national or international event, such as the Vietnam War, the assassination of an important political personality, the ending of the military draft, etc., had occurred that might suggest a strong reason to suspect such a difference. Research of a longitudinal nature would be necessary to overcome this limitation.

3. Ideally, freshmen should be assessed prior to arriving on campus, and seniors should be assessed after being exposed to the college environment for an entire four year period. Time constraints and the simple cross-sectional nature of this study, however, necessitated administering all instruments to students in the
Winter of 1980. This limitation needs to be taken into account in the interpretation of results. It should also be noted that assessment of freshmen in terms of their perceptions of the college environment provides more meaningful data after the freshmen have been exposed to the college environment for some period of time. Perceptions of environmental characteristics made prior to such sufficient "exposure" are better classified as expectations of the environment (Pace, 1969, p. 10.)

4. The results of this study can only be generalized to the populations examined at Kenyon and Ohio State. Further study would be needed to allow generalizations to other generations of Kenyon or Ohio State students or to students at other institutions. Nonetheless, directions for further investigation can be suggested.

Additional limitations to the interpretation of the results of this study are:

5. Reliability and validity data on the Perry Instrument and the three Iowa Instruments are
not extensive. As reported in this chapter, however, studies undertaken using the instruments have supported their integrity as tools for scholarly inquiry and research. Extensive normative data as a result of the use of these instruments is not available. Hence, caution should be exercised in comparing the results of this study with the efforts of earlier researchers.

6. The normative data for the College and University Environment Scales, Second Edition, while extensive, are based on administration of the instrument in the late 1960's. Ongoing use of the CUES II during the past decade by a variety of researchers at a variety of institutions tend to support the continued applicability of the original normative data. Nonetheless, care must be observed in comparing results of this study with the normative data presented in the CUES II Technical Manual. Other environmental assessment instruments, such as the Institutional Functioning Inventory (Peterson, Centra, Hartnett, Linn, 1968, 1978)
or Student Reactions To College (ETS, 1974, 1978), with more up-to-date normative data bases could have been used in this study. The CUES II was chosen, however, due to its widespread and proven use as a tool for scholarly study and research, its use by Chickering in his original studies on student development, and the applicability of the CUES II scales to the present study after appropriate modifications were made in the wording of certain items.

7. A larger response rate is always a desirable occurrence in survey research. Although the response rates reported for this study are sufficiently large to obtain meaningful results, additional statistical power and confidence may have resulted from a larger percentage of participation. Efforts beyond those reported to obtain additional responses, however, may have only served to contaminate the results and conclusions.
CHAPTER IV

FINDINGS AND DISCUSSION

This chapter details the results of the procedures for data analysis outlined in the preceding chapter. For the Kenyon and Ohio State students in the sample, group profiles and group comparisons are presented for each of the five instruments administered: the Perry Instrument, the Erwin Identity Scale, the Mines-Jensen Interpersonal Relationship Inventory, the Barratt Developing Purposes Inventory, and the College And University Environment Scales II.

Perry Instrument

The Perry Instrument was completed by twenty-two Kenyon freshmen, eighteen Kenyon seniors, twenty-seven Ohio State freshmen and sixteen Ohio State seniors. Students' responses to the five sentence stems and two essays which comprise this cognitive development assessment instrument were rated by three trained
judges. As indicated in Chapter 3, two different methods were used to analyze the obtained judges' ratings. In the first procedure, judges' ratings of each student's responses were combined according to procedures normally used with the Perry Instrument. This procedure served to yield an overall Perry score on a nominal scale (NS) for the students in the sample. In the second procedure, judges' ratings of each student's responses to the Perry items were weighted and combined to provide an overall Perry score on a continuous scale (CS) for the student.

Scores derived using the two scaling techniques were compared using Eta, a measure of association used when one of the variables being compared is measured at the nominal level and the other variable being compared is measured at the interval or ratio level. An Eta of 0.0 indicates no association between the variables, while an Eta of 1.0 indicates maximum association between the variables. Eta-squared provides an indication of the proportion of variance in the one variable which is accounted for by the other variable. Hence, in this study, Eta-squared provides an indication of the proportion of variance in the Perry
continuous scale scores which is accounted for by the Perry nominal scale scores. Table 17 shows values of Eta and Eta-squared for each of the groups of concern to this study. The high values indicate a high degree of agreement between the two scaling methods, and justifies our continued use and discussion of the continuous scale scores.

### TABLE 17

**Perry Instrument Measure Of Association (ETA) Between Perry Nominal Scale And Perry Continuous Scale Scores**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>ETA</th>
<th>ETA-SQUARED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>22</td>
<td>0.837</td>
<td>0.701</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>18</td>
<td>0.995</td>
<td>0.990</td>
</tr>
<tr>
<td>Kenyon Total</td>
<td>40</td>
<td>0.923</td>
<td>0.853</td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
<td>27</td>
<td>0.999</td>
<td>0.999</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>16</td>
<td>0.998</td>
<td>0.996</td>
</tr>
<tr>
<td>Ohio State Total</td>
<td>43</td>
<td>0.993</td>
<td>0.985</td>
</tr>
<tr>
<td>Freshman Total</td>
<td>49</td>
<td>0.879</td>
<td>0.773</td>
</tr>
<tr>
<td>Senior Total</td>
<td>34</td>
<td>0.995</td>
<td>0.990</td>
</tr>
<tr>
<td>Total (All Groups)</td>
<td>83</td>
<td>0.942</td>
<td>0.887</td>
</tr>
</tbody>
</table>
Perry Group Profiles. Table 18 and Table 19 present a summary of the data for the Perry nominal scale scores. Note that according to Perry's Theory, persons could theoretically be found in stages or Positions ranging from Position 1 (Basic Duality) to Position 9 (Developing Commitments). The notation used in these Tables and in the discussion which follows is a method commonly employed to express location on the Perry continuum. Briefly, a nominal scale score containing an integer number without parentheses, such as "2" or "3", reflects a dominant pattern of thinking. For example, a nominal scale score containing a "4" would indicate that the principal structure of thinking being utilized by a person is thinking characteristic of Position 4 (Multiplicity). An integer number with parentheses, such as "(2)" or "(5)", reflects a secondary pattern of thinking. Hence, a nominal scale score containing a "(3)" would indicate that thinking characteristic of Position 3 (Multiplicity Subordinate) is a secondary or subdominant mode of thought for the person. Scores containing combinations of dominant and/or secondary patterns of thinking, such as "3(2)" or "(2)(3)(4)",


are possible for a person. For emphasis, scores reflecting a dominant pattern of thought without the presence of secondary patterns are displayed as follows: "2-2", "3-3", "4-4", etc.

### TABLE 18

**Berry Instrument**  
*Minimum, Maximum, Mode*  
**Ferry Nominal Scale Scores**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Class</th>
<th>Freshman</th>
<th>Senior</th>
<th>Institution Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kenyon</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td></td>
<td>22</td>
<td>18</td>
<td>40</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td></td>
<td>2(3)</td>
<td>4-4</td>
<td>3(2), 4-4</td>
</tr>
<tr>
<td><strong>Minimum</strong></td>
<td></td>
<td>2-2</td>
<td>2(3)</td>
<td>2-2</td>
</tr>
<tr>
<td><strong>Maximum</strong></td>
<td></td>
<td>4-4</td>
<td>5-5</td>
<td>5-5</td>
</tr>
<tr>
<td><strong>Ohio State</strong></td>
<td></td>
<td>27</td>
<td>16</td>
<td>43</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td></td>
<td>2-2</td>
<td>3(2)</td>
<td>3(2)</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td></td>
<td>2-2</td>
<td>2(3)</td>
<td>2-2</td>
</tr>
<tr>
<td><strong>Minimum</strong></td>
<td></td>
<td>4-4</td>
<td>5-5</td>
<td>5-5</td>
</tr>
<tr>
<td><strong>Maximum</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Class Totals</strong></td>
<td></td>
<td>49</td>
<td>34</td>
<td>83</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td></td>
<td>2(3)</td>
<td>3(2)</td>
<td>3(2)</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td></td>
<td>2-2</td>
<td>2(3)</td>
<td>2-2</td>
</tr>
<tr>
<td><strong>Minimum</strong></td>
<td></td>
<td>4-4</td>
<td>5-5</td>
<td>5-5</td>
</tr>
<tr>
<td><strong>Maximum</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 19

**Perry Instrument**  
Within Group Percentage Of Persons In The  
Perry Nominal Scale Positions

<table>
<thead>
<tr>
<th>Position*</th>
<th>KF</th>
<th>KS</th>
<th>K</th>
<th>OF</th>
<th>OS</th>
<th>C</th>
<th>F</th>
<th>S</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-2</td>
<td>9.1</td>
<td>5.0</td>
<td>29.6</td>
<td>18.6</td>
<td>20.4</td>
<td>12.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2(3)</td>
<td>22.7</td>
<td>5.6</td>
<td>15.0</td>
<td>25.9</td>
<td>12.5</td>
<td>20.9</td>
<td>24.5</td>
<td>8.8</td>
<td>18.1</td>
</tr>
<tr>
<td>3(2)</td>
<td>18.2</td>
<td>16.7</td>
<td>17.5</td>
<td>18.5</td>
<td>31.3</td>
<td>23.3</td>
<td>18.4</td>
<td>23.5</td>
<td>20.5</td>
</tr>
<tr>
<td>3-3</td>
<td>4.5</td>
<td>11.1</td>
<td>7.5</td>
<td>3.7</td>
<td>6.3</td>
<td>4.7</td>
<td>4.1</td>
<td>8.8</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>54.5</td>
<td>33.4</td>
<td>45.0</td>
<td>77.7</td>
<td>50.1</td>
<td>67.5</td>
<td>67.4</td>
<td>41.1</td>
<td>56.6</td>
</tr>
<tr>
<td>(2) 3(4)</td>
<td>13.6</td>
<td>5.6</td>
<td>10.0</td>
<td>6.1</td>
<td>2.9</td>
<td>4.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) (3)</td>
<td>4.5</td>
<td>2.5</td>
<td>3.7</td>
<td>2.3</td>
<td>4.1</td>
<td>2.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3(4)</td>
<td>9.1</td>
<td>22.2</td>
<td>15.0</td>
<td>7.4</td>
<td>12.5</td>
<td>9.3</td>
<td>8.2</td>
<td>17.6</td>
<td>12.0</td>
</tr>
<tr>
<td>4(3)</td>
<td>9.1</td>
<td>5.6</td>
<td>7.5</td>
<td>3.7</td>
<td>25.0</td>
<td>11.6</td>
<td>6.1</td>
<td>14.7</td>
<td>9.6</td>
</tr>
<tr>
<td>3(5)</td>
<td>3.7</td>
<td>2.3</td>
<td>2.0</td>
<td>1.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>36.3</td>
<td>33.4</td>
<td>35.0</td>
<td>18.5</td>
<td>37.5</td>
<td>25.5</td>
<td>26.5</td>
<td>35.2</td>
<td>30.0</td>
</tr>
<tr>
<td>4-4</td>
<td>9.1</td>
<td>27.8</td>
<td>17.5</td>
<td>3.7</td>
<td>2.3</td>
<td>6.1</td>
<td>14.7</td>
<td>9.6</td>
<td></td>
</tr>
<tr>
<td>4(5)</td>
<td>6.3</td>
<td>2.3</td>
<td>2.9</td>
<td>1.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-5</td>
<td>5.6</td>
<td>2.5</td>
<td>2.9</td>
<td>2.4</td>
<td>5.9</td>
<td>2.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.1</td>
<td>33.4</td>
<td>20.0</td>
<td>3.7</td>
<td>12.6</td>
<td>6.9</td>
<td>6.1</td>
<td>23.5</td>
<td>13.2</td>
</tr>
</tbody>
</table>

**N=22  N=18  N=40  N=27  N=16  N=43  N=99  N=34  N=83**

* Position 1 = Basic Duality  
Position 2 = Multiplicity Prelegitimate  
Position 3 = Multiplicity Subordinate  
Position 4 = Multiplicity  
Position 5 = Relativism  
Position 6 = Commitment Foreseen  
Position 7 = Initial Commitment  
Position 8 = Implications Of Commitment  
Position 9 = Developing Commitments

** KF = Kenyon Freshmen  
OF = Ohio State Freshmen  
KS = Kenyon Seniors  
OS = Ohio State Seniors  
K = Kenyon Total  
O = Ohio State Total  
F = Freshman Total  
S = Senior Total  
A = All Students
In this study, Kenyon freshmen were found in Perry nominal scale categories ranging from 2-2 (Multiplicity Prelegitimate) to 4-4 (Multiplicity) with 2(3) (Multiplicity Prelegitimate moving toward Multiplicity Subordinate) being the modal position. Freshmen at Kenyon tended to score near this modal position on the Perry continuum, although a noticeable number (36.3%) were in transition between Position 3 (Multiplicity Subordinate) and Position 4 (Multiplicity). Kenyon Seniors were found in categories ranging from 2(3) (Multiplicity Prelegitimate moving toward Multiplicity Subordinate) to 5-5 (Relativism). The most represented position for Kenyon seniors was 4-4 (Multiplicity), although a large percentage of seniors scored lower on the continuum in positions of dualism (33.4%) and in transitional stages between the ending of dualism in Position 3 and the onset of multiplicity in Position 4 (33.4%). Overall, Kenyon students viewed the world from positions ranging from Multiplicity Prelegitimate (2-2) to Relativism (5-5), with most Kenyon students scoring at the bimodal positions of 3(2) (Multiplicity Subordinate with vestiges of Multiplicity Prelegitimate) and 4-4 (Multiplicity). The larger
cluster of Kenyon students (45.0%), however, was found near the dualistic position of 3(2), while a substantial portion (35.0%) were found in the transitional area between Positions 3 and 4.

As was the case with freshmen at Kenyon, Ohio State freshmen were found in positions ranging from 2-2 (Multiplicity Prelegitimate) to 4-4 (Multiplicity). The modal category for Ohio State freshmen, however, was 2-2. Freshmen at Ohio State tended to cluster at or slightly above this modal position on the Perry scale, while a moderate percentage (18.5%) were in transition between Positions 3 and 4. In a similar manner, Ohio State seniors had the same range of scores as Kenyon seniors (2(3) to 5-5). The modal category for Ohio State seniors was 3(2) (Multiplicity Subordinate with vestiges ofMultiplicity Prelegitimate remaining), although the majority of Ohio State seniors scored above this position on the continuum. That is, 37.5% of the Ohio State seniors were in transitional stages between positions of dualism and multiplicity, and 12.6% of the Ohio State seniors scored at Position 4 (Multiplicity) or above. Overall, Ohio State students ranged from Multiplicity Prelegitimate (2-2)
to Relativism (5-5) with 3(2) (Multiplicity Subordinate dominant and Multiplicity Preligimate subdominant) being the most occupied category. As a group, students at Ohio State tended to cluster near or slightly below this modal position. Thus, 67.5% of Ohio State students scored at Position 3 (Multiplicity Subordinate) or below, 25.5% scored in transitional stages between Position 3 and Position 4 (Multiplicity), and 6.9% scored at Position 4 or above.

Freshmen overall (i.e., at both institutions combined) were found in categories ranging from 2-2 (Multiplicity Preligimate) to 4-4 (Multiplicity). The most occupied category for freshmen was 2(3) (Multiplicity Preligimate moving toward Multiplicity Subordinate). Freshmen tended to cluster (67.4%) in the vicinity of this dualistic category, although 26.5% were found in transition between positions of dualism and multiplicity. Senior NS scores overall ranged from 2(3) to 5-5 (Relativism), with 3(2) (Multiplicity Subordinate with aspects of Multiplicity Preligimate) being the dominant category. A substantial group of seniors (35.2%), however, scored in the transitional positions between dualism and multiplicity (3-3 to
and a moderately large percentage of seniors (23.5%) scored in positions at or above multiplicity 
(4-4).

Table 20 presents a summary of the judges ratings for the Perry continuous scale scores (CS). Kenyon freshmen had a mean score of 2.98, which indicates a world view rapidly approaching Perry's category of Multiplicity Subordinate. Kenyon seniors, with a mean score of 3.38, were moving from this view of the world toward the multiplistic view of the world represented by a score of 4.00. Ohio State freshmen had a mean score of 2.59 and were located roughly midway between Multiplicity Prelegitimate (2.00) and Multiplicity Subordinate (3.00). Seniors at Ohio State, with a mean score of 3.19, were now moving beyond this viewpoint.

Overall, the freshman mean of 2.76 was on the lower side of Multiplicity Subordinate, and the senior mean of 3.29 was on the higher side. A similar comment can be made for the Ohio State overall mean (2.81) when compared with the overall Kenyon mean (3.16). A more thorough discussion of the differences between the various groups is found in the next section.
<table>
<thead>
<tr>
<th>Institution</th>
<th>Class</th>
<th>Freshman</th>
<th>Senior</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>22</td>
<td>18</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>2.98</td>
<td>3.38</td>
<td>3.16</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>0.563</td>
<td>0.599</td>
<td>0.606</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>2.09</td>
<td>2.45</td>
<td>2.09</td>
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</tr>
<tr>
<td>Maximum</td>
<td>4.00</td>
<td>4.49</td>
<td>4.49</td>
<td></td>
</tr>
<tr>
<td>Ohio State</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>27</td>
<td>16</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>2.59</td>
<td>3.19</td>
<td>2.81</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>0.562</td>
<td>0.693</td>
<td>0.674</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>2.00</td>
<td>2.52</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>3.86</td>
<td>4.76</td>
<td>4.76</td>
<td></td>
</tr>
<tr>
<td>Class Totals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>49</td>
<td>34</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>2.76</td>
<td>3.29</td>
<td>2.98</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>0.590</td>
<td>0.642</td>
<td>0.661</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>2.00</td>
<td>2.45</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>4.00</td>
<td>4.76</td>
<td>4.76</td>
<td></td>
</tr>
</tbody>
</table>
Perry Group Comparisons. Continuing with the Perry continuous scale scores, Point Biserial correlation coefficients were computed to examine the relationship between dichotomous group membership and these scores. The series of dichotomous groups studied were:

2. Ohio State freshmen vs. Ohio State seniors.
4. Kenyon seniors vs. Ohio State seniors.
5. Kenyon students vs. Ohio State students.
6. Freshmen vs. Seniors.

As shown in Table 21, the Point Biserial correlation between class membership and Perry continuous scale scores at Kenyon was 0.326 (p < .05). At Ohio State, this correlation was found to be 0.432 (p < .05). For freshmen, the correlation between institution attended and Perry continuous scale scores was 0.329 (p < .05); similarly, for seniors, the correlation between institution attended and Perry continuous scale scores was 0.143 (p < .05). Overall, the correlation between institution attended and Perry continuous scale scores was 0.261 (p < .05). Likewise,
TABLE 21

Perry Instrument
Point Biserial Correlations
Perry Continuous Scale Scores

<table>
<thead>
<tr>
<th>Group Comparison</th>
<th>Point-Biserial r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen vs. Kenyon Seniors</td>
<td>0.326*</td>
</tr>
<tr>
<td>Ohio State Freshmen vs. Ohio State Seniors</td>
<td>0.432*</td>
</tr>
<tr>
<td>Kenyon Freshmen vs. Ohio State Freshmen</td>
<td>0.329*</td>
</tr>
<tr>
<td>Kenyon Seniors vs. Ohio State Seniors</td>
<td>0.143</td>
</tr>
<tr>
<td>Kenyon Students vs. Ohio State Students</td>
<td>0.261*</td>
</tr>
<tr>
<td>Freshmen vs. Seniors</td>
<td>0.391*</td>
</tr>
</tbody>
</table>

* p < .05

The correlation for all students between class and Perry continuous scale scores was 0.391 (p < .05).

These results indicate that for four of the five groupings, a moderate degree of relationship existed between belonging to the group indicated and Perry continuous scale scores. Only the correlation examining the relationships between being a senior at Kenyon or Ohio State and Perry continuous scale scores failed to achieve a value significantly different from a zero correlation (at the .05 level).
The Perry Instrument results were again examined as nominal data. Membership in each of the groups studied was investigated in relation to the Perry nominal scale scores using a series of Chi-square calculations. The results of this investigation are reported in Table 22. Again examining group membership as a series of dichotomies, the results indicate how far the obtained frequencies for each of the Perry nominal scale categories departed from the frequencies expected if there were no differences as the result of group membership.

Only one of the Chi-square values achieved statistical significance beyond the .05 level. This occurred when examining the relationship between class membership and Perry nominal scale scores (Chi-square=22.069, df = 11, p < .05). The remaining results suggest that the two variables being considered, namely group membership and Perry nominal scale scores, are independent. That is to say, no statistically significant relationships could be found between the remaining dichotomous group membership categories being examined and Perry nominal scale scores.
TABLE 22

Perry Instrument
Chi-Squares Relating Perry Nominal Scale Scores To Dichotomous Group Membership

<table>
<thead>
<tr>
<th>Group Comparison</th>
<th>N</th>
<th>df</th>
<th>Chi-Square</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen vs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>22</td>
<td>9</td>
<td>10.130</td>
<td>0.34</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio State Freshmen vs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>27</td>
<td>10</td>
<td>15.798</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>43</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenyon Freshmen vs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
<td>22</td>
<td>9</td>
<td>8.287</td>
<td>0.51</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>49</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenyon Seniors vs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>18</td>
<td>8</td>
<td>10.552</td>
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<tr>
<td></td>
<td>34</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenyon vs.</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Ohio State</td>
<td>40</td>
<td>11</td>
<td>16.242</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>83</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshmen vs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seniors</td>
<td>49</td>
<td>8</td>
<td>22.069</td>
<td>0.02</td>
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<td>34</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>83</td>
<td>8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The last step in the analysis of the Perry Instrument was to investigate the continuous Perry scale scores using a two-way Analysis of Variance. The results of this analysis are summarized in Table 23. Main effects for institution and class were examined, as well as institution by class interaction effects. Attention was initially directed at the F statistic for interaction; this F ($F = 0.60, \text{df}=1$) failed to achieve significance at the .05 level. Hence, it was appropriate to proceed with an examination of main institution and main class effects.

The F statistic for main institution effects ($F = 4.62, \text{df}=1$) was significant beyond the .05 level. Similarly, the F statistic for main class effects ($F = 13.96, \text{df}=1$) was significant beyond the .01 level. Because each of the main effects (institution and class) contains only two levels (Kenyon and Ohio State for institution, Freshman and Senior for class), it was appropriate to make direct comparisons of the cell means for each level. That is, available post hoc techniques for multiple comparison were unnecessary. Thus, upon examining the Perry continuous scale score means, it is possible to say that Kenyon College
TABLE 23

Perry Instrument Analysis Of Variance Summary Table For Perry Continuous Scale Scores By Institution And Class

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares (SS)</th>
<th>Mean Square (MS)</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution</td>
<td>1</td>
<td>1.6480</td>
<td>1.6400</td>
<td>4.62*</td>
</tr>
<tr>
<td>Class</td>
<td>1</td>
<td>4.9819</td>
<td>4.9819</td>
<td>13.96**</td>
</tr>
<tr>
<td>Institution X Class</td>
<td>1</td>
<td>0.2125</td>
<td>0.2125</td>
<td>0.60</td>
</tr>
<tr>
<td>Error</td>
<td>79</td>
<td>28.1850</td>
<td>0.3568</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05
** p < .01

students as a group scored significantly higher (3.16) than Ohio State students as a group (2.81). One can state with some degree of confidence that the difference between Kenyon students viewed as a group and Ohio State students viewed as a group around the Perry stage of Multiplicity Subordinate (3.00) occurred for other than chance reasons. Similarly, senior students as a group scored significantly higher (3.29)
than freshman students as a group (2.76). Thus, one can state with some degree of confidence that the difference between freshmen viewed as a group and seniors viewed as a group around the Perry stage of Multiplicity Subordinate (3.00) occurred for other than chance reasons.

The Iowa Instruments

Students in each of the four groups (Kenyon freshmen, Kenyon seniors, Ohio State freshmen, and Ohio State seniors) completed the three Iowa Instruments: Erwin Identity Scale, Mines-Jensen Interpersonal Relationship Inventory, and Barratt Developing Purposes Inventory. In the discussion that follows, class (i.e., freshman and senior), institution (i.e., Kenyon and Ohio State), and institution by class profiles are presented for student scores on each of these instruments. For each of the three instruments, a 2X2 (Institution by Class) Multivariate Analysis of Variance was performed, with the scores on the subscales of the respective instruments representing the multiple dependent variables. Pillai's $V$ and its associated $F$ statistic were used to test for overall
main institution effects, overall main class effects, and overall institution by class effects. Follow-up Linear Discriminant Analysis was performed to investigate any derived significant effects. Pillai's $V$ was chosen as the multivariate test of significance due to its conservative yet robust nature. It allows for the use of Discriminant Analysis and supports the validity of the resulting discriminant functions, even under violations of Multivariate Analysis of Variance model assumptions. For the reader's information, results of the two-way Analysis of Variance on main institution, main class, and institution by class interaction effects for each of the subscales on each of the three instruments are also reported.

Results for each of the Iowa Instruments are presented below.

**Erwin Identity Scale.** The Erwin Identity Scale (EIS) is a 58 Likert-like item instrument with three subscales reflecting components of identity achievement: Confidence (18 items), Sexual Identity (22 items), Conceptions About Body And Appearance (18 items). A total of eighty-six usable Erwin Identity Scale instruments were completed by twenty-two Kenyon
freshmen, nineteen Kenyon seniors, twenty-six Ohio State freshmen, and nineteen Ohio State seniors. Tables 24 through 26 present the means, standard deviations, and ranges for the three subscales of the EIS. On each of the subscales, a higher mean score indicates a "more advanced" stage of development along the dimensions measured by the particular scale. Although direct comparisons are not possible, freshman scores obtained on each of the three subscales were similar to scores from three samples of freshmen reported by Erwin. Data on seniors were not available.

On the Confidence Subscale (CON), the group mean for Kenyon freshmen was higher (65.09) than the group mean for Kenyon seniors (61.89), a result not consistent with Chickering's Theory of Development. Other group comparisons were more in the "predicted" direction: Ohio State seniors scored higher (69.68) than Ohio State freshmen (64.54) and seniors as a group scored higher (65.79) than freshmen as a group (64.79). On this scale, Ohio State students as a group tended to score higher (66.71) than Kenyon students (63.61), with much of the difference apparently due to the difference in scores between Ohio State seniors (69.68) and Kenyon seniors (61.89).
### TABLE 24

**Erwin Identity Scale - Confidence**  
**Means, Standard Deviations, Ranges**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>22</td>
<td>65.09</td>
<td>5.903</td>
<td>53/76</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>19</td>
<td>61.89</td>
<td>7.894</td>
<td>44/77</td>
</tr>
<tr>
<td>Kenyon Total</td>
<td>41</td>
<td>63.61</td>
<td>6.976</td>
<td>44/77</td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
<td>26</td>
<td>64.54</td>
<td>10.219</td>
<td>43/89</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>19</td>
<td>69.68</td>
<td>9.147</td>
<td>48/84</td>
</tr>
<tr>
<td>Ohio State Total</td>
<td>45</td>
<td>66.71</td>
<td>10.008</td>
<td>43/89</td>
</tr>
<tr>
<td>Freshman Total</td>
<td>48</td>
<td>64.79</td>
<td>8.437</td>
<td>43/89</td>
</tr>
<tr>
<td>Senior Total</td>
<td>38</td>
<td>65.79</td>
<td>9.306</td>
<td>44/84</td>
</tr>
<tr>
<td>All Students</td>
<td>86</td>
<td>65.23</td>
<td>8.793</td>
<td>43/89</td>
</tr>
</tbody>
</table>

### TABLE 25

**Erwin Identity Scale - Sexual Identity**  
**Means, Standard Deviations, Ranges**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>22</td>
<td>82.59</td>
<td>8.427</td>
<td>69/102</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>19</td>
<td>76.79</td>
<td>8.364</td>
<td>66/91</td>
</tr>
<tr>
<td>Kenyon Total</td>
<td>41</td>
<td>79.90</td>
<td>8.794</td>
<td>66/102</td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
<td>26</td>
<td>77.12</td>
<td>8.724</td>
<td>63/93</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>19</td>
<td>79.53</td>
<td>9.991</td>
<td>56/97</td>
</tr>
<tr>
<td>Ohio State Total</td>
<td>45</td>
<td>78.13</td>
<td>9.248</td>
<td>56/97</td>
</tr>
<tr>
<td>Freshman Total</td>
<td>48</td>
<td>79.63</td>
<td>8.934</td>
<td>63/102</td>
</tr>
<tr>
<td>Senior Total</td>
<td>38</td>
<td>78.16</td>
<td>9.193</td>
<td>56/97</td>
</tr>
<tr>
<td>All Students</td>
<td>86</td>
<td>78.98</td>
<td>9.025</td>
<td>56/102</td>
</tr>
<tr>
<td>Group</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>Min/Max</td>
</tr>
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<td>------------------------</td>
<td>----</td>
<td>------</td>
<td>-----</td>
<td>---------</td>
</tr>
<tr>
<td>Kenyon Freshmen</td>
<td>22</td>
<td>65.36</td>
<td>6.052</td>
<td>55/76</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>19</td>
<td>63.63</td>
<td>6.500</td>
<td>49/78</td>
</tr>
<tr>
<td>Kenyon Total</td>
<td>41</td>
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<td>6.245</td>
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<tr>
<td>Ohio State Freshmen</td>
<td>26</td>
<td>60.46</td>
<td>11.717</td>
<td>34/83</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>19</td>
<td>64.37</td>
<td>9.364</td>
<td>48/85</td>
</tr>
<tr>
<td>Ohio State Total</td>
<td>45</td>
<td>62.11</td>
<td>10.849</td>
<td>34/85</td>
</tr>
<tr>
<td>Freshman Total</td>
<td>48</td>
<td>62.71</td>
<td>9.772</td>
<td>34/83</td>
</tr>
<tr>
<td>Senior Total</td>
<td>38</td>
<td>64.00</td>
<td>7.959</td>
<td>48/85</td>
</tr>
<tr>
<td>All Students</td>
<td>86</td>
<td>63.28</td>
<td>8.988</td>
<td>34/85</td>
</tr>
</tbody>
</table>

On the Sexual Identity Subscale (SI), the Kenyon freshman group mean was again higher (82.59) than the Kenyon senior group mean (76.79). In fact, Kenyon freshmen displayed more development on this dimension than any other group, while Kenyon seniors displayed less development than any other group. Similarly, the overall freshman mean of 79.63 was slightly greater than the overall senior mean of 78.16, a result again contrary to Chickering's postulations. Ohio State freshmen, however, did score somewhat lower (77.12)
than Ohio State seniors (79.53). Kenyon students as a group did have a higher score (79.90) than Ohio State students (78.13) on the Sexual Identity Subscale.

On the Conceptions About Body and Appearance Subscale (CABA), Kenyon freshmen again had a mean score which was greater (65.36) than that of Kenyon seniors (63.63). Kenyon freshmen showed more development on this dimension than any other group, including Kenyon seniors. On the other hand, Ohio State freshmen scored lower (60.46) than their senior counterparts (64.37). Freshmen as a group scored lower (62.71) than seniors (64.00) on this scale, while Kenyon students as a group had a somewhat greater mean total (64.56) than Ohio State students (62.11).

To examine whether these differences in group means are statistically significant, Multivariate Analysis of Variance techniques were employed. The overall results for the Multivariate Analysis of Variance (using the three subscale scores as the multiple dependent variables) are presented in Table 27. For institution and class main effects, and for institution by class interaction effects, Pillai's $V$ was transformed to an approximate $F$ statistic. Thus
for main institution effects, Pillai's $V (V=0.167)$ was transformed to $F(3,80)=5.348$, $p < .01$. Main institution effects were the only effects to achieve significance at the required level.

As a follow-up procedure investigating the significant main institution effects, a Linear Discriminant Analysis was performed. The resulting standardized discriminant function coefficients and structure coefficients for the three Erwin Identity subscales are presented in Table 28. The standardized coefficients reflect the unique contributions of each subscale to the discriminant function. The structure coefficients are zero-order correlations between each subscale and the discriminant function.

The relative contributions of the three subscales in discriminating between institutions (i.e., Kenyon and Ohio State) are given by the standardized coefficients in Table 28. Confidence and Conceptions About Body And Appearance make the greatest contributions to the discriminating function, with the contribution of Confidence being somewhat greater. The contribution of Sexual Identity is considerably less.
## TABLE 27

**Erwin Identity Scale**

**Multivariate Analysis Of Variance Summary Table**

<table>
<thead>
<tr>
<th>Source</th>
<th>MULTIVARIATE</th>
<th>UNIVARIATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bank</td>
<td>F</td>
</tr>
<tr>
<td>Institution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COM</td>
<td>3</td>
<td>5.35**</td>
</tr>
<tr>
<td>SI</td>
<td></td>
<td>0.50</td>
</tr>
<tr>
<td>CABA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td>3</td>
<td>0.98</td>
</tr>
<tr>
<td>COM</td>
<td></td>
<td>0.28</td>
</tr>
<tr>
<td>SI</td>
<td></td>
<td>0.77</td>
</tr>
<tr>
<td>CABA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institution X Class</td>
<td>3</td>
<td>2.11</td>
</tr>
<tr>
<td>COM</td>
<td></td>
<td>5.05*</td>
</tr>
<tr>
<td>SI</td>
<td></td>
<td>4.53*</td>
</tr>
<tr>
<td>CABA</td>
<td></td>
<td>2.11</td>
</tr>
<tr>
<td>Residual</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>CON</td>
<td></td>
<td>82</td>
</tr>
<tr>
<td>SI</td>
<td></td>
<td>82</td>
</tr>
<tr>
<td>CABA</td>
<td></td>
<td>82</td>
</tr>
</tbody>
</table>

**CON = Confidence Subscale**

**SI = Sexual Identity Subscale**

**CABA = Conceptions About Body And Appearance Subscale**

* * p < .05

** p < .01
TABLE 28
Erwin Identity Scale
Linear Discriminant Analysis

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Standardized Coefficients*</th>
<th>Structure Coefficients**</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCN (Confidence)</td>
<td>1.390</td>
<td>0.481</td>
</tr>
<tr>
<td>SI (Sexual Identity)</td>
<td>-0.331</td>
<td>-0.175</td>
</tr>
<tr>
<td>CABA (Conceptions About Body And Appearance)</td>
<td>-1.034</td>
<td>-0.264</td>
</tr>
</tbody>
</table>

*Standardized Discriminant Function Coefficients
**Correlation Between Dependent And Canonical Variables

Although the contribution of each subscale is given by the standardized coefficients, such standardized coefficients can be misleading when intercorrelations exist among the subscales. Consequently, the interpretation and naming of the function is given by the structure coefficients. The magnitude of these coefficients as given in Table 28 indicates that the discriminant function is defined by only one subscale, Confidence. Thus, the function defined primarily by the Confidence Subscale discriminates between students.
at Ohio State and students at Kenyon. Furthermore, on the Confidence Subscale, Ohio State students tended to score higher than Kenyon students.

In summary, for the Erwin Identity Scale, using Multivariate Analysis of Variance, no significant institution by class interaction effects were found. That is, group differences on the IIS between Kenyon freshmen, Kenyon seniors, Ohio State freshmen, and Ohio State seniors were not found to be statistically significant. Similarly, no significant difference between all freshmen viewed as a group and all seniors viewed as a group was found. For the Erwin Identity Scale, only main institution effects were found to be statistically significant. Follow-up Linear Discriminant Analysis indicated that the subscale explaining the difference between Kenyon students and Ohio State students was the Confidence Subscale. On this subscale, Ohio State students had a higher score than Kenyon students, an indication of a greater degree of assuredness by Ohio State students in themselves and their capabilities.
The Mines-Jensen Interpersonal Relationship Inventory (MIRI) is a 42 Likert-like item instrument with two subscales: Tolerance (20 items) and Quality of Relationships (22 items). There were eighty-seven usable MIRI instruments completed by twenty-two Kenyon freshmen, nineteen Kenyon seniors, twenty-seven Ohio State freshmen, and nineteen Ohio State seniors. Means, standard deviations, and ranges for the two Mines subscales are listed in Tables 29 and 30. As with the Erwin Identity Scale, a "more advanced" stage of development in terms of the dimensions defined by the given subscale is reflected by a higher score on that subscale. Although direct comparisons are not possible, freshman scores obtained on the two subscales were similar to scores from three samples of freshmen reported by Mines. Similar data on seniors were not available.

On the Tolerance Subscale, the Kenyon freshman group mean of 60.95 was virtually the same as that for Kenyon seniors (60.79). A slight difference existed between Ohio State freshmen (58.75) and Ohio State seniors (57.63), but not in the theoretically predicted
### TABLE 29
Mines-Jensen Interpersonal Relationship Inventory
Tolerance
Means, Standard Deviations, Ranges

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>22</td>
<td>60.95</td>
<td>4.865</td>
<td>53/72</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>19</td>
<td>60.79</td>
<td>5.503</td>
<td>49/68</td>
</tr>
<tr>
<td>Kenyon Total</td>
<td>41</td>
<td>60.88</td>
<td>5.105</td>
<td>49/72</td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
<td>27</td>
<td>58.15</td>
<td>5.447</td>
<td>47/68</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>19</td>
<td>57.63</td>
<td>4.126</td>
<td>50/64</td>
</tr>
<tr>
<td>Ohio State Total</td>
<td>46</td>
<td>57.93</td>
<td>4.901</td>
<td>47/68</td>
</tr>
<tr>
<td>Freshman Total</td>
<td>49</td>
<td>59.41</td>
<td>5.330</td>
<td>47/72</td>
</tr>
<tr>
<td>Senior Total</td>
<td>38</td>
<td>59.21</td>
<td>5.057</td>
<td>49/68</td>
</tr>
<tr>
<td>All Students</td>
<td>87</td>
<td>59.32</td>
<td>5.184</td>
<td>47/62</td>
</tr>
</tbody>
</table>

### TABLE 30
Mines-Jensen Interpersonal Relationship Inventory
Quality Of Relationships
Means, Standard Deviations, Ranges

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>22</td>
<td>67.32</td>
<td>6.160</td>
<td>58/83</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>19</td>
<td>66.74</td>
<td>5.980</td>
<td>57/79</td>
</tr>
<tr>
<td>Kenyon Total</td>
<td>41</td>
<td>67.05</td>
<td>6.008</td>
<td>57/83</td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
<td>27</td>
<td>65.59</td>
<td>5.699</td>
<td>52/75</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>19</td>
<td>67.79</td>
<td>7.398</td>
<td>53/81</td>
</tr>
<tr>
<td>Ohio State Total</td>
<td>46</td>
<td>66.50</td>
<td>6.470</td>
<td>52/81</td>
</tr>
<tr>
<td>Freshman Total</td>
<td>49</td>
<td>66.37</td>
<td>5.912</td>
<td>52/83</td>
</tr>
<tr>
<td>Senior Total</td>
<td>38</td>
<td>67.26</td>
<td>6.656</td>
<td>53/81</td>
</tr>
<tr>
<td>All Students</td>
<td>87</td>
<td>66.76</td>
<td>6.226</td>
<td>52/83</td>
</tr>
</tbody>
</table>
direction. The difference between the overall freshman mean score (59.41) and the overall senior mean score (59.21) was minor. Kenyon students as a group did score somewhat higher (60.88) than Ohio State students as a group (57.93), with both freshmen and seniors at Kenyon (60.95 and 60.79, respectively) having scored higher than their Ohio State counterparts (58.15 and 57.63, respectively).

On the Quality of Relationships Subscale, Kenyon freshmen showed slightly higher scores (67.32) than Kenyon seniors (66.74), a result again contrary to Chickering's constructs. Ohio State seniors did score somewhat higher (67.79) than Ohio State freshmen (65.59). Furthermore, seniors as a group tended to score higher (67.26) than freshmen (66.37); the difference, however, was minimal. Kenyon students as a group had a slightly higher mean score (67.05) than Ohio State students as a group (66.50), although Ohio State seniors did score somewhat higher (67.79) than Kenyon seniors (66.74). Kenyon freshmen scored higher (67.32) than Ohio State freshmen (65.59).

To further investigate the observed mean differences, a Multivariate Analysis of Variance was
undertaken. Table 31 reports the results of this analysis which treats the two subscales, Tolerance and Quality of Relationships, as the multiple dependent variables. Institution main effects had a Pillai's $V$ of 0.085, which was transformed to an approximate $F$ statistic where $F(2, 82) = 3.807$, $p < .05$. Neither institution by class interaction effects or class main effects achieved statistical significance.

The significant main institution effects suggested a follow-up Linear Discriminant Analysis on students' scores at Kenyon and Ohio State on the Tolerance and Quality of Relationships Subscales. Table 32 examines the standardized discriminant function coefficients and structure coefficients resulting from this discriminant analysis. The standardized coefficients reflect the unique contribution of each subscale to the discriminant function. The structure coefficients are zero-order correlations between each subscale and the discriminant function scores.

The relative contributions of the two subscales in discriminating between institutions are given by the standardized coefficients in Table 32. The Tolerance Subscale makes by far the greater contribution to the
<table>
<thead>
<tr>
<th>Source</th>
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<th>Pillai's V</th>
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<th>F</th>
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<td><strong>MULTIVARIATE</strong></td>
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<td>2</td>
<td>3.81*</td>
<td>0.085</td>
<td>1</td>
<td>7.42**</td>
</tr>
<tr>
<td>TOL</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>QUAL</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Class</td>
<td>2</td>
<td>0.30</td>
<td>0.007</td>
<td>1</td>
<td>0.10</td>
</tr>
<tr>
<td>TOL</td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>QUAL</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institution X Class</td>
<td>2</td>
<td>0.62</td>
<td>0.015</td>
<td>1</td>
<td>0.03</td>
</tr>
<tr>
<td>TOL</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QUAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>82</td>
<td></td>
<td></td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>TOL</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>QUAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **UNIVARIATE**       |       |       |            |    |      |

TOL = Tolerance Subscale
QUAL = Quality Of Relationships Subscale

* p < .05
** p < .01
TABLE 32

Mines-Jensen Interpersonal Relationship Inventory
Linear Discriminant Analysis

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Standardized Coefficients*</th>
<th>Structure Coefficients**</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOL (Tolerance)</td>
<td>0.038</td>
<td>0.981</td>
</tr>
<tr>
<td>QUAL (Quality of (Relationships)</td>
<td>-0.202</td>
<td>0.089</td>
</tr>
</tbody>
</table>

*Standardized Discriminant Function Coefficients
**Correlation Between Dependent And Canonical Variables

discriminating function. However, as discussed previously, the standardized coefficients can be misleading when inter-correlations exist among the subscales. Therefore, the interpretation and naming of the function is given by the structure coefficients, also found in Table 32. The results indicate that the discriminant function is defined by only one subscale, namely Tolerance.

Thus, the function defined by the Tolerance Subscale discriminates between students at Ohio State and students at Kenyon. Furthermore, on the Tolerance Subscale, Kenyon students tended to score higher than Ohio State students.
In summary, the Bines-Jensen Interpersonal Relationship Inventory MANOVA indicated no significant institution by class interaction. That is, group differences on the MIRI subscales between Kenyon freshmen, Kenyon seniors, Ohio State freshmen, and Ohio State seniors were not statistically significant. Similarly, no significant difference between all freshmen as a group and all seniors as a group was found. Only main institution effects were found to be significant. Follow-up Linear Discriminant Analysis indicated that the subscale explaining the difference observed between Kenyon students and Ohio State students was the Tolerance Subscale. On this subscale, Kenyon students had a higher score than Ohio State students, where higher scores indicate an increasing acceptance of diversity and capacity to respond to persons in their own right, without consideration of their stereotyped roles.

**Barratt Developing Purposes Inventory.** The Barratt Developing Purposes Inventory (DPI) is a 45 Likert-like item instrument with six subscales assessing components of development in vocational, avocational, and life style dimensions. The six
subscales are: Student Behaviors (8 items), Professional Behaviors (10 items), Career Behaviors (7 items), Recreation Activities (5 items), Recreation Social (4 items), and Life Style (11 items). A total of eighty-seven usable DPI instruments were completed by twenty-two Kenyon freshmen, nineteen Kenyon seniors, twenty-seven Ohio State freshmen, and nineteen Ohio State seniors. Tables 33 through 38 give the means, standard deviations, and ranges for the six subscales of the Barratt instrument. On each of these subscales a lower score indicates a "more advanced" stage of development along the dimensions measured by the particular subscale. This direction of indicating development is opposite that found on the Erwin Identity Scale and the Mines-Jensen Interpersonal Relationship Inventory.

On the Student Behaviors Subscale (see Table 33), freshmen as a group tended to score slightly lower (21.84) than seniors as a group (22.16), contrary to the theoretical predictions of Chickering. This was also true of freshmen and seniors at Kenyon (means of 20.27 and 22.58, respectively), but not the case at Ohio State where seniors scored lower (21.74) than
### TABLE 33

**Barratt Developing Purposes Inventory**  
**Student Behaviors**  
**Means, Standard Deviations, Ranges**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>22</td>
<td>20.27</td>
<td>5.946</td>
<td>10/34</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>19</td>
<td>22.58</td>
<td>4.299</td>
<td>17/33</td>
</tr>
<tr>
<td>Kenyon Total</td>
<td>41</td>
<td>21.34</td>
<td>5.313</td>
<td>10/34</td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
<td>27</td>
<td>23.11</td>
<td>4.758</td>
<td>14/33</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>19</td>
<td>21.74</td>
<td>4.942</td>
<td>13/30</td>
</tr>
<tr>
<td>Ohio State Total</td>
<td>46</td>
<td>22.54</td>
<td>4.829</td>
<td>13/33</td>
</tr>
<tr>
<td>Freshman Total</td>
<td>49</td>
<td>21.84</td>
<td>5.456</td>
<td>10/34</td>
</tr>
<tr>
<td>Senior Total</td>
<td>38</td>
<td>22.16</td>
<td>4.589</td>
<td>13/33</td>
</tr>
<tr>
<td>All Students</td>
<td>87</td>
<td>21.98</td>
<td>5.069</td>
<td>10/34</td>
</tr>
</tbody>
</table>

### TABLE 34

**Barratt Developing Purposes Inventory**  
**Professional Behaviors**  
**Means, Standard Deviations, Ranges**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>22</td>
<td>23.77</td>
<td>4.174</td>
<td>18/34</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>19</td>
<td>24.53</td>
<td>4.248</td>
<td>19/36</td>
</tr>
<tr>
<td>Kenyon Total</td>
<td>41</td>
<td>24.12</td>
<td>4.173</td>
<td>18/36</td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
<td>27</td>
<td>24.96</td>
<td>5.065</td>
<td>16/35</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>19</td>
<td>24.26</td>
<td>4.121</td>
<td>17/32</td>
</tr>
<tr>
<td>Ohio State Total</td>
<td>46</td>
<td>24.67</td>
<td>4.662</td>
<td>16/35</td>
</tr>
<tr>
<td>Freshman Total</td>
<td>49</td>
<td>24.43</td>
<td>4.677</td>
<td>16/35</td>
</tr>
<tr>
<td>Senior Total</td>
<td>38</td>
<td>24.39</td>
<td>4.130</td>
<td>17/36</td>
</tr>
<tr>
<td>All Students</td>
<td>87</td>
<td>24.41</td>
<td>4.421</td>
<td>16/36</td>
</tr>
</tbody>
</table>
**TABLE 35**
Barratt Developing Purposes Inventory
Career Behaviors
Means, Standard Deviations, Ranges

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>22</td>
<td>21.09</td>
<td>4.638</td>
<td>12/29</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>19</td>
<td>21.00</td>
<td>5.477</td>
<td>11/31</td>
</tr>
<tr>
<td>Kenyon Total</td>
<td>41</td>
<td>21.05</td>
<td>4.980</td>
<td>11/31</td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
<td>27</td>
<td>17.04</td>
<td>5.185</td>
<td>7/27</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>19</td>
<td>15.42</td>
<td>5.167</td>
<td>7/27</td>
</tr>
<tr>
<td>Ohio State Total</td>
<td>46</td>
<td>16.37</td>
<td>5.183</td>
<td>7/27</td>
</tr>
<tr>
<td>Freshman Total</td>
<td>49</td>
<td>18.86</td>
<td>5.303</td>
<td>7/29</td>
</tr>
<tr>
<td>Senior Total</td>
<td>38</td>
<td>18.21</td>
<td>5.965</td>
<td>7/31</td>
</tr>
<tr>
<td>All Students</td>
<td>87</td>
<td>18.57</td>
<td>5.577</td>
<td>7/31</td>
</tr>
</tbody>
</table>

**TABLE 36**
Barratt Developing Purposes Inventory
Recreation Activities
Means, Standard Deviations, Ranges

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>22</td>
<td>10.27</td>
<td>2.414</td>
<td>7/16</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>19</td>
<td>9.95</td>
<td>2.272</td>
<td>6/15</td>
</tr>
<tr>
<td>Kenyon Total</td>
<td>41</td>
<td>10.12</td>
<td>2.326</td>
<td>6/16</td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
<td>27</td>
<td>12.26</td>
<td>2.864</td>
<td>7/17</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>19</td>
<td>11.09</td>
<td>2.865</td>
<td>6/16</td>
</tr>
<tr>
<td>Ohio State Total</td>
<td>46</td>
<td>12.11</td>
<td>2.838</td>
<td>6/17</td>
</tr>
<tr>
<td>Freshman Total</td>
<td>49</td>
<td>11.37</td>
<td>2.826</td>
<td>7/17</td>
</tr>
<tr>
<td>Senior Total</td>
<td>38</td>
<td>10.92</td>
<td>2.735</td>
<td>6/16</td>
</tr>
<tr>
<td>All Students</td>
<td>87</td>
<td>11.17</td>
<td>2.780</td>
<td>6/17</td>
</tr>
</tbody>
</table>
### TABLE 37

**Barratt Developing Purposes Inventory**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>22</td>
<td>11.27</td>
<td>2.097</td>
<td>8/15</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>19</td>
<td>11.16</td>
<td>1.864</td>
<td>8/15</td>
</tr>
<tr>
<td>Kenyon Total</td>
<td>41</td>
<td>11.22</td>
<td>1.969</td>
<td>8/15</td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
<td>27</td>
<td>11.52</td>
<td>1.827</td>
<td>9/15</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>19</td>
<td>11.95</td>
<td>2.248</td>
<td>8/16</td>
</tr>
<tr>
<td>Ohio State Total</td>
<td>46</td>
<td>11.70</td>
<td>1.999</td>
<td>8/16</td>
</tr>
<tr>
<td>Freshman Total</td>
<td>49</td>
<td>11.41</td>
<td>1.936</td>
<td>8/15</td>
</tr>
<tr>
<td>Senior Total</td>
<td>38</td>
<td>11.55</td>
<td>2.076</td>
<td>8/16</td>
</tr>
<tr>
<td>All Students</td>
<td>87</td>
<td>11.47</td>
<td>1.987</td>
<td>8/16</td>
</tr>
</tbody>
</table>

### TABLE 38

**Barratt Developing Purposes Inventory**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min/Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>22</td>
<td>29.64</td>
<td>6.083</td>
<td>18/38</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>19</td>
<td>27.37</td>
<td>5.520</td>
<td>19/41</td>
</tr>
<tr>
<td>Kenyon Total</td>
<td>41</td>
<td>28.59</td>
<td>5.869</td>
<td>18/41</td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
<td>27</td>
<td>27.19</td>
<td>4.616</td>
<td>15/37</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>19</td>
<td>24.63</td>
<td>5.080</td>
<td>16/35</td>
</tr>
<tr>
<td>Ohio State Total</td>
<td>46</td>
<td>26.13</td>
<td>4.924</td>
<td>15/37</td>
</tr>
<tr>
<td>Freshman Total</td>
<td>49</td>
<td>28.29</td>
<td>5.408</td>
<td>15/38</td>
</tr>
<tr>
<td>Senior Total</td>
<td>38</td>
<td>26.00</td>
<td>5.413</td>
<td>16/41</td>
</tr>
<tr>
<td>All Students</td>
<td>87</td>
<td>27.29</td>
<td>5.498</td>
<td>15/41</td>
</tr>
</tbody>
</table>
freshmen (23.11). Overall, Kenyon students scored lower (21.34) than Ohio State students (22.54), with Kenyon freshmen (20.27) showing more development on this subscale than any other group, and Ohio State freshmen (23.11) showing less development than any other group. Thus, while Kenyon students as a group showed more development on this dimension than Ohio State students as a group, this result seemed to be due to low Kenyon freshman scores. By the senior year, Ohio State students were showing a greater level of development than Kenyon students on this dimension.

Scores on the Professional Behaviors Subscale did not vary much between class groups or between institutions. Table 34 shows that Kenyon freshmen tended to score slightly lower (23.77) than any of the other groups (an indication of slightly greater maturity on this dimension), with the largest difference occurring between this group and Ohio State freshmen (24.96).

As shown in Table 35, on the Career Behaviors Subscale, mean scores for Kenyon freshmen and seniors were almost identical (21.09 and 21.00, respectively). Ohio State seniors tended to score lower (15.42) than
Ohio State freshmen (17.04), an indication of more development by the seniors. As freshmen, as seniors, and overall, Ohio State students tended to score lower than Kenyon students on this subscale. As a group, seniors showed only slightly lower scores (18.21) than did freshmen as a group (18.86).

The Recreation Activities Subscale (Table 36) tended to show development in the theoretically predicted direction when viewing seniors and freshmen. Thus, seniors at each institution (9.95 at Kenyon, 11.89 at Ohio State) and overall (10.92) tended to show slightly more development (i.e., score lower) than the analogous group of freshmen (10.27 at Kenyon, 12.26 at Ohio State, 11.37 overall). These mean score differences were small, however. Students at Kenyon, as a group (10.12) and in their respective classes, tended to have lower scores than their counterparts at Ohio State (12.11 overall), an indication of more progress on this developmental subscale by students at Kenyon.

On the Recreation Social Subscale (Table 37), freshmen and seniors at each institution tended to score similar to one another, indicating little
developmental change on this dimension as a result of the college experience. Kenyon students within each group (freshmen=11.27 and seniors=11.16) and overall (11.22) tended to score lower (i.e., more development) than the corresponding group at Ohio State (freshmen=11.52, seniors=11.95, overall=11.47), although the mean score differences were small.

Finally, on the eleven item Life Style Subscale, group means tended to be in the direction suggested by Chickering. That is, as reported in Table 38, seniors tended to score lower than freshmen, indicating more development by seniors than freshmen on this dimension. This is true of seniors at both Ohio State (24.63 vs 27.19) and Kenyon (27.37 vs 29.64), as well as for the combined scores for all seniors (26.00 vs. 28.29). Ohio State students as a group (26.13) and in their respective classes (27.19 for freshmen, 24.63 for seniors) tended to have lower scores than their counterparts at Kenyon (28.59 as a group, 29.64 for freshmen, 27.37 for seniors).

The question remains as to whether any of the differences in mean scores discussed above are statistically significant. The overall results for the
Multivariate Analysis of Variance (using the six subscale scores as the multiple dependent variables) are presented in Table 39. For institution and class main effects and for institution by class interaction effects, Pillai's $V$ was transformed to an approximate $F$ statistic. Thus, for the main institution effects, Pillai's $V (V=0.388)$ was transformed to $F(6,78)=8.24$, where $p < .01$. Only main institution effects achieved statistical significance at the required level.

To further study the significant main institution effects, a Linear Discriminant Analysis was performed as a follow-up procedure. The standardized discriminant function coefficients and structure coefficients resulting from this analysis are found in Table 40. The standardized coefficients reflect the unique contributions of each of the six subscales to the discriminant function, whereas the structure coefficients represent zero-order correlations between each subscale and the discriminant function.

The relative contributions of the six subscales in discriminating between Ohio State and Kenyon are given by the standardized coefficients in Table 40. The Career Behaviors Subscale provides the greatest
### TABLE 39
Barratt Developing Purposes Inventory
Multivariate Analysis Of Variance Summary Table

<table>
<thead>
<tr>
<th>Source</th>
<th>Rank</th>
<th>F</th>
<th>Pillai's V</th>
<th>df</th>
<th>F</th>
</tr>
</thead>
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<tr>
<td><strong>MULTIVARIATE</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institution</td>
<td>6</td>
<td>8.24**</td>
<td>0.388</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB</td>
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<td>0.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PB</td>
<td></td>
<td>0.23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CB</td>
<td></td>
<td>18.89**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BA</td>
<td></td>
<td>11.87**</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>BS</td>
<td></td>
<td>1.43</td>
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<td></td>
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<tr>
<td>LS</td>
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<tr>
<td>Class</td>
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<td>0.083</td>
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</tr>
<tr>
<td>SB</td>
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<td>0.18</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>PB</td>
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<td></td>
</tr>
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<td>CB</td>
<td></td>
<td>0.59</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>BA</td>
<td></td>
<td>0.37</td>
<td></td>
<td></td>
<td></td>
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<td>BS</td>
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</tr>
<tr>
<td>LS</td>
<td></td>
<td>4.38*</td>
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</tr>
<tr>
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<tr>
<td>SB</td>
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<td>2.85</td>
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<td>BA</td>
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<td>0.00</td>
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</tr>
<tr>
<td>BS</td>
<td></td>
<td>0.39</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>LS</td>
<td></td>
<td>0.02</td>
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</tr>
</tbody>
</table>
TABLE 39 (continued)

Barratt Developing Purposes Inventory
Multivariate Analysis of Variance Summary Table

<table>
<thead>
<tr>
<th>Source</th>
<th>Rank</th>
<th>F-Pillai's V</th>
<th>df</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual</td>
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<td></td>
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<tr>
<td>SB</td>
<td>83</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>PB</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CB</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BA</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SB = Student Behaviors Subscale
PB = Professional Behaviors Subscale
CB = Career Behaviors Subscale
BA = Recreation Activities Subscale
RS = Recreation Social Subscale
LS = Life Style Subscale

* p < .05
** p < .01

corresponds to the discriminating function. The Recreation Activities and the Recreation Social Subscales also make substantial contributions, as does the Life Style Subscale. The contributions of the Professional Behaviors and Student Behaviors Subscales are considerably less.
<table>
<thead>
<tr>
<th>Subscale</th>
<th>Standardized Coefficients*</th>
<th>Structure Coefficients**</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB (Student Behaviors)</td>
<td>-0.677</td>
<td>-0.126</td>
</tr>
<tr>
<td>PB (Professional Behaviors)</td>
<td>-0.177</td>
<td>-0.066</td>
</tr>
<tr>
<td>CB (Career Behaviors)</td>
<td>0.788</td>
<td>0.599</td>
</tr>
<tr>
<td>BA (Recreation Activities)</td>
<td>-0.617</td>
<td>-0.475</td>
</tr>
<tr>
<td>BS (Recreation Social)</td>
<td>-0.536</td>
<td>-0.165</td>
</tr>
<tr>
<td>LS (Life Style)</td>
<td>0.404</td>
<td>0.311</td>
</tr>
</tbody>
</table>

*Standardized Discriminant Function Coefficients  
**Correlation Between Dependent and Canonical Variables

Although the contribution of each of the six subscales to the discriminating function is given by the standardized coefficients, the conclusions reached can be misleading when inter-correlations exist among the subscales. Consequently, the interpretation and naming of the function is given by the structure coefficients. The magnitude of these coefficients as
given in Table 40 indicates that the discriminating function is actually defined by three of the Barratt subscales: Career Behaviors, Recreation Activities, and Life Style.

Thus, the function defined by the three subscales, Career Behaviors, Recreation Activities, and Life Style, discriminates between students at Ohio State and Kenyon. The directionality of the structure coefficients indicates that Ohio State students tended to score lower than Kenyon students on the Career Behavior and Life Style Subscales, an indication of more progressive development by Ohio State students along the dimensions measured by these two subscales. On the Recreation Activities Subscale, however, Ohio State students tended to score higher than Kenyon students, indicating a greater level of development by the Kenyon students along the dimensions assessed by this scale.

To summarize: Using Multivariate Analysis of Variance techniques, no significant institution by class interaction was found for the Developing Purposes Inventory. Hence, group differences on this instrument between Kenyon freshmen, Kenyon seniors, Ohio State
fresmen, and Ohio State seniors were not found to be statistically significant. Likewise, no statistically significant difference between freshmen viewed as a group and seniors viewed as a group was found. Only main institution effects on the DPI were found to be statistically significant. Linear Discriminant Analysis follow-up of these main institution effects indicated that three of the six subscales explain this difference between Kenyon and Ohio State students. The three subscales are: Career Behaviors, Recreation Activities, and Life Style. On the Career Behaviors and Life Style Subscales, Ohio State students scored at a "more advanced" state of development, indicating more maturity in terms of career knowledge and plans, and more maturity in terms of a greater sense of the life style in which they desire to be involved. Kenyon students tended to display more development than Ohio State students on the Recreation Activities Subscale, reflecting a breadth and depth in terms of participation in and/or familiarity with activities and new experiences.
College And University Environment Scales

To assess the nature of the perceived environment at Kenyon and Ohio State, the College and University Environment Scales, Second Edition (CUES II) was administered to all students participating in the study. As discussed previously, this assessment of the environment addresses the question "What do students perceive to be characteristic of the environment?" The aggregate judgment of the student respondents to the 160 True-False items on the CUES II serves as an opinion poll describing the campus environment on seven dimensions or scales. These seven scales, described in detail in Chapter III, are: Practicality (20 items), Community (20 items), Awareness (20 items), Propriety (20 items), Scholarship (20 items), Campus Morale (22 items), and Quality Of Teaching And Faculty-Student Relationships (11 items). Note that the CUES II contains 60 items of an "experimental" nature which are not included in the computation of scale scores. In addition, the last two scales, Campus Morale and Quality Of Teaching And Faculty-Student Relationships, are composite scales comprised of items from the other five scales.
A single score on each of the seven COES II Scales was computed and is reported for each institution (i.e., Kenyon and Ohio State) and for each group within the institutions (i.e., freshmen and seniors). It is important to note that in the discussion which follows, whenever reference is made to COES II scale scores for a particular group, the scores actually represent perceptions of a given institution as obtained from that particular group. There were twenty-two Kenyon freshmen, nineteen Kenyon seniors, twenty-seven Ohio State freshmen, and nineteen Ohio State seniors who completed a total of eighty-seven usable COES II instruments.

As discussed previously, the norms for the COES II were based on a national reference group of 100 colleges and universities. Although first reported in 1969, numerous studies using the COES II since serve to validate the continued applicability of the normative data presented in the COES II Technical Manual. This national reference group was representative of eight types or categories of institutions:
1. highly selective liberal arts colleges.
2. highly selective universities, public and private.
3. general liberal arts colleges.
4. general universities, public and private.
5. state colleges.
6. strongly denominational liberal arts colleges.
7. colleges and universities emphasizing engineering and the sciences.
8. teachers colleges and others with major emphasis on teacher education.

Based on the criteria for and descriptions of each of these categories in the CUES II Technical Manual (Pace, 1969), Kenyon most closely resembles the institutions in the category of "highly selective liberal arts colleges" and Ohio State most closely resembles the institutions in the category of "general universities, public and private." Statements which follow comparing Kenyon and Ohio State to the national baseline of institutions will be made primarily in reference to these two groups.

Table 41 presents the raw scores from the following six groups on each of the seven CUES II scales:
1. Kenyon freshmen.
2. Kenyon seniors.
3. Kenyon total (Kenyon freshmen and Kenyon seniors combined).
4. Ohio State freshmen.
5. Ohio State seniors.
6. Ohio State total (Ohio State freshmen and Ohio State seniors combined).

The percentile equivalents for these raw scores are given in Table 42. CUES II is an opinion poll type of instrument, with items included in the scoring for which two-thirds or more of the respondents agree. An item identifying a characteristic of the environment is included in a group score if respondents agree two-to-one or better that the item is true or is not true of the environment. Using this consensus approach, scores on the Practicality, Community, Awareness, Propriety, and Scholarship Scales could theoretically range from 0 to 40. Scores on the Campus Morale and Quality of Teaching And Faculty-Student Relationships Scales could range from 0 to 44 and 22, respectively.

Figures 1 through 7 graphically depict the scores from the various groups on each of the seven CUES II scales. Included in these figures are enclosed bars.
<table>
<thead>
<tr>
<th>Scale</th>
<th>P1</th>
<th>C</th>
<th>A</th>
<th>P2</th>
<th>S</th>
<th>CM</th>
<th>Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>10</td>
<td>32</td>
<td>30</td>
<td>17</td>
<td>33</td>
<td>32</td>
<td>20</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>12</td>
<td>31</td>
<td>25</td>
<td>9</td>
<td>31</td>
<td>28</td>
<td>18</td>
</tr>
<tr>
<td>Kenyon Total</td>
<td>11</td>
<td>31</td>
<td>26</td>
<td>14</td>
<td>32</td>
<td>29</td>
<td>20</td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
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<td>27</td>
<td>32</td>
<td>16</td>
<td>26</td>
<td>29</td>
<td>15</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
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<td>22</td>
<td>26</td>
<td>12</td>
<td>22</td>
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<td>23</td>
<td>24</td>
<td>28</td>
<td>14</td>
<td>23</td>
<td>22</td>
<td>13</td>
</tr>
</tbody>
</table>

P1 = Practicality Scale  
C = Community Scale  
A = Awareness Scale  
P2 = Propriety Scale  
S = Scholarship Scale  
CM = Campus Morale Scale  
Q = Quality Of Teaching And Faculty-Student Relationships Scale
TABLE 42

College And University Environment Scales II
Percentile Equivalents For CUES II Scores*

<table>
<thead>
<tr>
<th>Scale</th>
<th>PI</th>
<th>C</th>
<th>A</th>
<th>P2</th>
<th>S</th>
<th>CM</th>
<th>Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>16</td>
<td>81</td>
<td>85</td>
<td>57</td>
<td>86</td>
<td>84</td>
<td>98</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>20</td>
<td>78</td>
<td>73</td>
<td>15</td>
<td>77</td>
<td>74</td>
<td>82</td>
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<tr>
<td>Kenyon Total</td>
<td>18</td>
<td>78</td>
<td>76</td>
<td>46</td>
<td>81</td>
<td>78</td>
<td>98</td>
</tr>
<tr>
<td>Ohio State Freshmen</td>
<td>78</td>
<td>64</td>
<td>88</td>
<td>54</td>
<td>59</td>
<td>78</td>
<td>68</td>
</tr>
<tr>
<td>Ohio State Seniors</td>
<td>62</td>
<td>38</td>
<td>76</td>
<td>30</td>
<td>43</td>
<td>22</td>
<td>55</td>
</tr>
<tr>
<td>Ohio State Total</td>
<td>74</td>
<td>50</td>
<td>80</td>
<td>46</td>
<td>46</td>
<td>40</td>
<td>55</td>
</tr>
</tbody>
</table>

*Based on national reference group of 100 institutions.

P1 = Practicality Scale
C = Community Scale
A = Awareness Scale
P2 = Propriety Scale
S = Scholarship Scale
CM = Campus Morale Scale
Q = Quality Of Teaching And Faculty-Student Relationships Scale
representing the means and ranges of CUES II scores for all institutions in the national reference group. Also displayed in Figures 1 through 5 are enclosed bars representing the means and ranges of CUES II scores for those institutions in the national reference group which are similar to Kenyon or Ohio State. Means and ranges of CUES II scores on the Campus Morale Scale (Figure 6) and the Quality Of Teaching And Faculty-Student Relationships Scale (Figure 7) for institutions similar to Kenyon and Ohio State were not reported in the CUES II Technical Manual.

**Practicality.** As discussed in Chapter III, this scale describes the following characteristics of the environment: enterprise, organization, material benefits, social activities, vocational emphasis, orderly supervision. On the Practicality Scale, Kenyon scores tended to be below the average of 18.95 for all institutions in the national reference group, while Ohio State scores tended to be above this national mean. Kenyon freshmen, Kenyon seniors, and Kenyon students as a group had scores which were similar to the scores of students at highly selective liberal arts colleges in the national CUES II reference group (see
<table>
<thead>
<tr>
<th>CUES Scores</th>
<th>Kenyon (SLA)</th>
<th>Ohio State (GU)</th>
<th>National Reference Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>30</td>
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<td>20</td>
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<tr>
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<td>KF</td>
<td>OF</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>KS</td>
<td>OS</td>
<td></td>
</tr>
</tbody>
</table>

Reference Group Mean: 6.1 24.1 18.95

Kenyon Freshmen (KF): 10
Kenyon Seniors (KS): 12
Kenyon Total (K): 11

Ohio State Freshmen (OF): 24
Ohio State Seniors (OS): 21
Ohio State Total (O): 23

Note: Enclosed bars represent the range of scores for all institutions in the national reference group and for institutions in the national reference group which are similar to Kenyon (i.e., highly Selective Liberal Arts colleges—SLA) or Ohio State (i.e., General Universities—GU). Adopted from CUES II Technical Manual, 1969.

FIGURE 1
College And University Environment Scales II Practicality Scale
### COES Scores

<table>
<thead>
<tr>
<th>CUES Scores</th>
<th>Kenyon (SLA)</th>
<th>Ohio State (GU)</th>
<th>National Reference Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>KF</td>
<td>OF</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>K</td>
<td>KS</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
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<td></td>
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<tr>
<td>0</td>
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</tr>
</tbody>
</table>

#### Reference Group Mean

- Kenyon Freshmen (KF): 32
- Kenyon Seniors (KS): 31
- Kenyon Total (K): 31
- Ohio State Freshmen (OF): 27
- Ohio State Seniors (OS): 22
- Ohio State Total (C): 24

**NOTE:** Enclosed bars represent the range of scores for all institutions in the national reference group and for institutions in the national reference group which are similar to Kenyon (i.e., highly Selective Liberal Arts colleges—SLA) or Ohio State (i.e., General Universities—GU). Adopted from COES II Technical Manual, 1969.

**FIGURE 2**

*College And University Environment Scales II*  
*Community Scale*
**CUES Scores**

<table>
<thead>
<tr>
<th></th>
<th>Kenyon (SLA)</th>
<th>Ohio State (GU)</th>
<th>National Reference Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Group Mean</td>
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<td>20.22</td>
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<tr>
<td>Kenyon Freshmen (KF)</td>
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<tr>
<td>Kenyon Seniors (KS)</td>
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<td></td>
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<tr>
<td>Kenyon Total (K)</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio State Freshmen (OF)</td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio State Seniors (CS)</td>
<td>26</td>
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<td></td>
</tr>
<tr>
<td>Ohio State Total (O)</td>
<td>28</td>
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<td></td>
</tr>
</tbody>
</table>

**NOTE:** Enclosed bars represent the range of scores for all institutions in the national reference group and for institutions in the national reference group which are similar to Kenyon (i.e., highly Selective Liberal Arts colleges-SLA) or Ohio State (i.e., General Universities-GU). Adopted from CUES II Technical Manual, 1969.

**FIGURE 3**
College And University Environment Scales II
Awareness Scale
CUES Scores

<table>
<thead>
<tr>
<th></th>
<th>Kenyon (SLA)</th>
<th>Ohio State (GU)</th>
<th>National Reference Group</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>

Reference Group Mean 18.7 13.0 16.55

Kenyon Freshmen (KF) 17
Kenyon Seniors (KS) 9
Kenyon Total (K) 14

Ohio State Freshmen (CF) 16
Ohio State Seniors (OS) 12
Ohio State Total (C) 14

NOTE: Enclosed bars represent the range of scores for all institutions in the national reference group and for institutions in the national reference group which are similar to Kenyon (i.e., highly Selective Liberal Arts colleges-SLA) or Ohio State (i.e., General Universities-GU). Adopted from CUES II Technical Manual, 1969.

FIGURE 4
College And University Environment Scales II
Propriety Scale
<table>
<thead>
<tr>
<th>CUES Scores</th>
<th>Kenyon (SLA)</th>
<th>Ohio State (GU)</th>
<th>National Reference Group</th>
</tr>
</thead>
<tbody>
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<tr>
<td>0</td>
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</tbody>
</table>

Reference Group Mean: 35.3  20.9  24.07

Kenyon Freshmen (KF) 33
Kenyon Seniors (KS) 31
Kenyon Total (K) 32
Ohio State Freshmen (OF) 26
Ohio State Seniors (OS) 22
Ohio State Total (O) 23

**NOTE:** Enclosed bars represent the range of scores for all institutions in the national reference group and for institutions in the national reference group which are similar to Kenyon (i.e., highly Selective Liberal Arts colleges-SLA) or Ohio State (i.e., General Universities-GU).

**FIGURE 5**
College And University Environment Scales II
Scholarship Scale
<table>
<thead>
<tr>
<th>CUES Scores</th>
<th>Kenyon</th>
<th>Ohio State</th>
<th>National Reference Group</th>
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<tr>
<td>0</td>
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</tbody>
</table>

**Reference Group Mean:** 24.86

- Kenyon Freshmen (KF) 32
- Kenyon Seniors (KS) 28
- Kenyon Total (K) 29
- Ohio State Freshmen (OF) 29
- Ohio State Seniors (CS) 20
- Ohio State Total (O) 22

**NOTE:** Enclosed bars represent the range of scores for all institutions in the national reference group. Adopted from CUES II Technical Manual, 1969.

**FIGURE 6**

College And University Environment Scales II

Campus Morale Scale
<table>
<thead>
<tr>
<th>CUES Scores</th>
<th>Kenyon</th>
<th>Ohio State</th>
<th>National Reference Group</th>
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</thead>
<tbody>
<tr>
<td>20</td>
<td>[KS]</td>
<td>[OF] 13</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>[CS] 13</td>
<td></td>
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</table>

**Reference Group Mean**

<table>
<thead>
<tr>
<th>Kenyon Freshmen (KF)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Seniors (KS)</td>
<td>18</td>
</tr>
<tr>
<td>Kenyon Total (K)</td>
<td>20</td>
</tr>
<tr>
<td>Ohio State Freshmen (OF)</td>
<td>15</td>
</tr>
<tr>
<td>Ohio State Seniors (OS)</td>
<td>13</td>
</tr>
<tr>
<td>Ohio State Total (C)</td>
<td>13</td>
</tr>
</tbody>
</table>

**NOTE:** Enclosed bars represent the range of scores for all institutions in the national reference group. Adopted from CUES II Technical Manual, 1969.

**FIGURE 7**

College And University Environment Scales II
Quality Of Teaching/Faculty-Student Relationships Scale
Figure 1). That is, perceptions of the environmental emphasis placed on Practicality were similar at Kenyon and at the highly selective liberal arts colleges in the national reference group. Kenyon scores were actually slightly above the average Practicality scores for highly selective liberal arts colleges.

Likewise, Ohio State freshmen, Ohio State seniors, and Ohio State students as a group had perceptions on the Practicality Scale that were similar to those of students attending general universities in the national CUES II reference group. Ohio State scores tended, however, to be slightly lower than those of the general universities.

Figure 1 indicates that on the Practicality Scale freshmen and seniors within each institution shared similar perceptions of the environment, although Ohio State freshman scores were moderately higher than Ohio State senior scores. Also indicated was a difference on this scale between Ohio State students and Kenyon students, with Ohio State scores being higher than Kenyon scores for all corresponding groups (i.e., freshmen, seniors, freshmen and seniors combined).
It is useful in attempting to understand the observed differences to examine those individual scale items on which there was greatest disagreement between student groups. An item is classified as a "discrepant item" if two-thirds or more of the students in a given group agreed with the item while two-thirds or more of the students in the comparison group disagreed with the item. On the Practicality Scale, in comparing scores from Kenyon freshmen and Kenyon seniors, and in comparing scores from Ohio State freshmen and Ohio State seniors, no discrepant items were found. This is not unexpected, given the similarity of perceptions between freshmen and seniors within the respective institutions on this scale. When comparing scores from groups at Kenyon and Ohio State, however, a number of discrepant items surfaced. A comparison of Kenyon freshmen and Ohio State freshmen yielded the following three discrepant items from COES II:

1. Students almost always wait to be called on before speaking in class.

53. Everyone has a lot of fun at this school.

59. The college offers many really practical courses such as typing, report writing, etc.
Kenyon freshmen disagreed and Ohio State freshmen agreed with each of these three statements. That is, Kenyon freshmen, by a two-to-one majority, found these three items to be inaccurate descriptors of the Kenyon environment; in contrast, Ohio State freshmen, by a two-to-one majority, found these three items to be accurate descriptors of the Ohio State environment.

When comparing scores from Kenyon seniors and Ohio State seniors, the three items listed above (1, 53, and 59) were again discrepant, as well as the following two additional items:

6. Education here tends to make students more practical and realistic.

9. Student pep rallies, parades, dances, carnivals, or demonstrations occur very rarely.

The great majority of Kenyon seniors disagreed with item 6, while the great majority of Ohio State seniors agreed with the same item. Kenyon seniors found item 9 to be an accurate reflection of the Kenyon environment; in contrast, Ohio State seniors did not feel that item 9 was an accurate characterization of the Ohio State milieu.

Comparisons between all Ohio State and all Kenyon students on the Practicality Scale showed items 1, 53,
and 59 to be discrepant items, with the discrepancy in terms of disagree/agree being in the direction noted for Kenyon and Ohio State freshmen.

**Community.** This scale assesses student perceptions in relation to such environmental issues as friendliness, cohesiveness, group orientation, etc. On the Community Scale Kenyon and Ohio State resemble their counterpart institutions in the national reference group (see Figure 2). Kenyon scores from all groups (i.e., freshmen, seniors, freshmen and seniors combined) were very close to the reference group mean of 30.1 for highly selective liberal arts colleges; Ohio State scores tended to be above the reference group mean of 21.3 for general universities. This was particularly true for Ohio State freshmen, who had a score of 27 on the Community Scale. Students at both Kenyon and Ohio State tended to place their respective institutions near or above the overall mean of 24.61 for all institutions in the national reference group.

From Figure 2, one can conclude that selective liberal arts colleges and general universities in the national reference group differ in terms of their students' perceptions of Community. There exists
overlap, however; selective liberal arts institutions which fall below the mean for their group share the same perception of the environment on this dimension with general universities falling above the mean for their group. With Ohio State students scoring in the upper end of the general university range, they did share common perceptions with students at a number of highly selective liberal arts colleges. There was, however, a slight difference in perception between students at Ohio State and Kenyon, as Kenyon scores were slightly above the average for selective liberal arts institutions.

When comparing scores from all Kenyon groups with scores from all Ohio State groups, the following Community Scale item was found to be discrepant:

72. All undergraduates must live in university approved housing.

This accurately reflects policy differences between Kenyon and Ohio State, for all Kenyon students must live in university approved housing for their entire four years of enrollment at Kenyon. Kenyon seniors and Ohio State seniors also showed great discrepancy on the following item:

24. The history and traditions of the college are strongly emphasized.
Kenyon seniors agreed that this statement represented a condition or practice which was characteristic of Kenyon. According to Ohio State seniors, a similar emphasis did not exist at Ohio State.

Freshmen and seniors at Kenyon shared similar perceptions on the Community Scale. At Ohio State, however, senior scores were somewhat lower than freshman scores (22 vs. 27) on this dimension. The one discrepant item, i.e., that item on which there was the most disagreement between Ohio State freshmen and seniors, was item 75:

75. Most of the faculty are not interested in students' personal problems.

Freshmen at Ohio State found this statement to be a false representation of the environment as they perceived (expected?) it, while seniors at Ohio State found the statement to be accurate.

Awareness. This scale measures the emphasis placed in the environment on awareness of self, awareness of society, and awareness of aesthetic stimuli. On the Awareness Scale, Kenyon students and Ohio State students gave their respective institutions similar scores; in both cases, scores were above the
overall mean of 20.22 displayed by the national reference group of 100 institutions (see Figure 3). Kenyon scores were lower than those of other highly selective liberal arts institutions; Ohio State scores, on the other hand, were in the upper range or beyond scores displayed by other general universities.

At both Kenyon and Ohio State, freshman scores were only slightly higher than senior scores, indicating little change in environmental perception on this dimension during the four years of college enrollment. Because of the similarity in all groups on the Awareness Scale, no items surfaced as discrepant items in any of the comparisons examined.

**Propriety.** The Propriety Scale describes an environment in terms of how mannerly, considerate, proper, and conventional it is. The overall institution scores for Kenyon and Ohio State on this scale were the same (see Figure 4). This score of 14 was slightly below the mean score of 16.55 for all institutions in the CUES II national reference group of 100 institutions. The scores from Kenyon students as a group tended to fall in the lower half of the range of scores registered by students at highly selective
liberal arts colleges in the national reference group; Kenyon senior scores actually fell slightly below this range. Perceptual scores from Ohio State students as a group were well within the range of scores from students at general universities in the national reference group. Seniors at both Kenyon and Ohio State had a lower perception of Propriety at their respective institutions than did freshmen. Kenyon seniors, with a score of 9, registered the lowest of any group assessed, and some 8 points lower than Kenyon freshmen. In general, scores did not differ substantially between the two schools on this perceptual dimension.

There was only one item which meets the criteria of a discrepant item. Kenyon freshmen and seniors had opposite perceptions on the following item:

93. There always seem to be a lot of little quarrels going on.

Freshmen at Kenyon tended to disagree with this statement while Kenyon seniors agreed. The same item was discrepant for Kenyon seniors and Ohio State seniors, with Kenyon seniors again agreeing with the statement and Ohio State seniors disagreeing.
**Scholarship.** This scale determines the environmental emphasis in such areas as scholastic discipline, intellectual achievement, and the pursuit of knowledge. The distribution of scores on the Scholarship Scale in the national reference group indicates that highly selective liberal arts colleges and general universities differ considerably from one another in this area (see Figure 5). Selective liberal arts colleges, such as Kenyon, fall at the upper end of the range of possible scores, while general universities, such as Ohio State, occupy a position near the overall mean of 24.07 for all institutions in the national reference group. Kenyon scores were in the bottom range of the scores computed for other highly selective liberal arts colleges, and Ohio State scores were in the upper end of the range of scores computed for other general universities. At each institution, scores from freshmen were slightly higher than scores from seniors on the Scholarship Scale. The differences between corresponding groups at Kenyon and Ohio State were more pronounced, as scores from Kenyon freshmen were higher than scores from Ohio State freshmen, and scores from Kenyon seniors were higher than scores from Ohio State seniors.
No discrepant Scholarship Scale items were found in comparing scores from freshmen and seniors within the two institutions. In comparing scores from seniors between the two institutions, the following items were found to be sources of major disagreement:


19. The school is outstanding for the emphasis and support it gives to pure scholarship and basic research.

Kenyon seniors tended to agree with item 14 and disagree with item 19; the opposite was true of Ohio State seniors.

Campus Morale. Aspects of campus morale assessed by this scale include student freedom of expression, assimilation into campus life, group cohesiveness, supportive and spirited relationships, and commitment to intellectual tasks. Figure 6 indicates that Kenyon scores were above the overall national mean of 24.86 on the Campus Morale Scale. This was true for Kenyon freshmen, Kenyon seniors, and Kenyon students as a whole. Ohio State scores clustered around the national mean, with freshmen slightly above, seniors slightly below, and Ohio State students as a whole slightly
below this national norm. The CUES II Technical Manual does not report scores on this new scale for highly selective liberal arts colleges or general universities as distinct groups of institutions; hence, comparisons of Kenyon and Ohio State with these groupings were not possible.

There was little difference in perception between Kenyon freshmen and Kenyon seniors on this scale, although seniors did have slightly lower scores than freshmen. There existed a more distinct difference in perception between Ohio State freshmen and Ohio State seniors. Ohio State freshmen had a score which was more in line with the Kenyon scores than with the scores from Ohio State seniors.

As the Campus Morale Scale is made up of items from the five CUES II scales previously discussed, discrepant items reappeared in a discussion of this scale. These items were:


75. Most of the faculty are not interested in students' personal problems.

For item 14, Kenyon seniors agreed with the statement while Ohio State seniors disagreed. On item 75,
froshmen at Ohio State disagreed with the statement, while seniors at Ohio State agreed.

Quality Of Teaching/Faculty-Student Relationships - Kenyon students perceived their environment as placing a heavy emphasis on the quality of teaching and faculty-student relationships (see Figure 7). This emphasis was greater than the average score of 13.89 reported for all institutions in the national reference group. Furthermore, there was little difference in this perception of the environment between Kenyon freshmen and Kenyon seniors. At Ohio State, students perceived the amount of emphasis in these areas to be at about the level it was for all institutions in the national reference group. This perception was consistent between freshman and senior students at Ohio State.

As with the Campus Morale Scale, the CUES II Technical Manual does not report scores on this new scale for highly selective liberal arts colleges or general universities as distinct groups. Hence, comparisons of Kenyon and Ohio State with these types of institutions were not possible.
This scale is a composite of items from previously discussed scales; hence, items which were discrepant on earlier scales when making comparisons between various groups appeared as discrepant items for this scale when making the same group comparisons. These items were as follows:

1. Students almost always wait to be called on before speaking in class.

75. Most of the faculty are not interested in students' personal problems.

For item 1, when comparing freshmen, seniors, and students as a whole at Kenyon with the corresponding group at Ohio State, students at Kenyon tended to disagree with this statement, while those at Ohio State tended to agree. For item 75, in comparing Ohio State students, seniors agreed with the statement and freshmen disagreed.

**CUES Summary.** This discussion of scores on the College And University Environment Scales II can best be summarized using the method of analysis presented in the CUES II Technical Manual (Face, 1969). Profiles based on the seven CUES scales are presented for the following groups in Figure 8:
1. Kenyon College.
2. Highly Selective Liberal Arts Colleges (from the CUES II national reference group).
3. Ohio State University.
4. General Universities (from the CUES II national reference group).

Similar profiles are presented in Figures 9 and 10 for the following groups:
5. Kenyon freshmen.
7. Ohio State freshmen.
8. Ohio State seniors.

In drawing each of these profiles, the scales have been arranged in the following order: Scholarship, Awareness, Community, Propriety, and Practicality. The reason for doing this is that the resulting shapes of the profiles are easier to read, that is, the scale pairs that are most highly correlated (Scholarship and Awareness, Community and Propriety) are shown next to each other. Since the raw scores on one scale are not equivalent to the raw scores on other scales, the scores have been converted to percentiles. (Pace, 1969, p. 27)

From Figure 8, one can see that the profile for Kenyon closely approximated that of the highly selective liberal arts colleges. In a similar manner, the profile for Ohio State closely approximated the profile for general universities. This finding serves
KEY:  
---  = Kenyon  
---  = Ohio State  
---  = Selective Liberal Arts Colleges  
---  = General Universities  

ORDER OF SCALES:
Scholarship(S), Awareness(A), Community(C)  
Propriety(P2), Practicality(P1),  
Campus Morale(CM), Quality(Q)  

NOTE: National reference statistics for the Campus Morale and Quality Of Teaching/Faculty-Student Relationships Scales are not available for Selective Liberal Arts Colleges and General Universities.

FIGURE 8
College And University Environment Scales II  
College Profiles
KEY: ——— = Freshmen
— — — = Seniors

ORDER CF SCALES:
Scholarship(S), Awareness(A), Community(C)
Propriety(P2), Practicality(P1),
Campus Morale(CM), Quality(Q)

FIGURE 9
College And University Environment Scales II
Institution By Class Profiles
KEY: ——— = Kenyon
- - - = Ohio State

ORDER OF SCALES:
Scholarship (S), Awareness (A), Community (C)
Propriety (P2), Practicality (P1),
Campus Morale (CM), Quality (Q)

FIGURE 10
College And University Environment Scales II
Class By Institution Profiles
to both validate the CUES II and to indicate that there did exist differences between the institutional groups under study, at least in terms of perceptions of the environment. Note that profiles for the highly selective liberal arts colleges and general universities do not include the scores on the Campus Morale and Quality Of Teaching And Faculty-Student Relationships Scales. The data for these two new scales were not reported in the CUES II Technical Manual and are therefore not included here.

Figure 8 indicates that although Kenyon students closely resembled students at other highly selective liberal arts colleges in their perceptions of the environment, Kenyon students scored their institution slightly higher on the Practicality Scale. On the Scholarship, Awareness, and Propriety Scales, Kenyon had lower scores than the corresponding liberal arts institutions. This difference was most pronounced on the Propriety Scale. Similarly, although the Ohio State profile was comparable with those of other general universities, Ohio State scores on the Scholarship, Awareness, Community, and Propriety Scales were higher than those of the general universities.
This difference was most pronounced on the Awareness Scale. Only on the Practicality Scale did Ohio State score lower than the reference group; this difference, however, was slight.

A comparison of the Kenyon and Ohio State profiles in Figure 8 showed greater emphasis at Kenyon on issues relating to Scholarship, Community, Campus Morale, and Quality Of Teaching And Faculty-Student Relationships; at Ohio State, there was greater emphasis on matters of Practicality. Scores on the Awareness and Propriety Scales did not show substantial differences; in fact, they were the same for Kenyon and Ohio State on the Propriety Scale.

Figure 9 allows us to compare freshman and senior perceptions of the environment within the two institutions. At both Kenyon and Ohio State, scores from freshmen were higher than scores from seniors on virtually every scale. The only exception was the Practicality Scale at Kenyon, where scores from seniors were slightly higher than those from freshmen. At Kenyon, the most pronounced difference between freshman and senior class perceptions of the environment occurred on the Propriety Scale, with seniors
indicating substantially less emphasis than freshmen on this dimension. At Ohio State, a notable difference between freshman and senior perceptions of the environment likewise occurred on the Propriety Scale; meaningful perceptual differences were also found to exist between these two groups on the Community and Campus Morale Scales. As suggested above, Ohio State freshmen indicated considerably more emphasis being placed on these areas (i.e., Community, Propriety, Campus Morale) than did Ohio State seniors.

Figure 10 presents the "between institutions" CUES II profiles for freshmen and seniors. In comparison to freshmen at Ohio State, freshmen at Kenyon indicated greater emphasis being placed on Scholarship, Community, and Quality Of Teaching And Faculty-Student Relationships at their institution. Ohio State freshmen had considerably higher scores on the Practicality Scale. Freshman perceptions at the two institutions were similar on the Awareness, Propriety, and Campus Morale Scales.

Seniors at Kenyon displayed higher scores than their counterparts at Ohio State on the Scholarship, Community, Campus Morale, and Quality Of Teaching And
Faculty-Student Relationships Scales. These differences tended to be substantial. Scores from Ohio State seniors were correspondingly higher on the Propriety and Practicality Scales, with the difference being most pronounced on the Practicality Scale. Once again, perceptions on the Awareness Scale showed little variance.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to investigate the impact of the college experience on students. Through the use of five survey instruments, this project used a simple cross-sectional design to gather and compare information on the cognitive intellectual and psychosocial development of male freshman and male senior students at a small private college (Kenyon College) and at a large public university (the Arts and Sciences College at The Ohio State University). Cognitive intellectual development was investigated using the Perry Instrument; psychosocial development was assessed using the Erwin Identity Scale, the Mines-Jensen Interpersonal Relationship Inventory, and the Barratt Developing Purposes Inventory. A fifth survey instrument, the College and University Environment Scales, Second Edition, was administered in order to examine students' perceptions of their college or
university environments and to investigate differential environmental influences.

For each of the five instruments, student group profiles were compiled and reported for each institution (Kenyon and Ohio State), for each class (freshman and senior), and for each institution by class group (Kenyon freshmen, Kenyon seniors, Ohio State freshmen, and Ohio State seniors). To examine comparisons between the various groups of the study, data from the Perry Instrument were analyzed using Chi-square statistics, Point Biserial correlation coefficients, and Analysis of Variance techniques. Data from the Erwin Identity Scale, the Mines-Jensen Interpersonal Relationship Inventory, and the Barratt Developing Purposes Inventory were analyzed using Multivariate Analysis of Variance and Linear Discriminant Analysis procedures.

The analysis of the data was undertaken with the following six research questions as a focus:

1. What are the developmental levels of freshmen and seniors at each of the institutions in terms of their cognitive intellectual development?
2. How do freshmen and seniors compare within each institution and between institutions in terms of their cognitive intellectual development?

3. What are the developmental levels of freshmen and seniors at each of the institutions in terms of the resolution of Establishing Identity, Freeing Interpersonal Relationships, and Developing Purpose?

4. How do freshmen and seniors compare within each institution and between institutions in terms of the resolution of Establishing Identity, Freeing Interpersonal Relationships, and Developing Purpose?

5. How do freshmen and seniors at each of the institutions perceive their college environment?

6. How do freshmen and seniors compare within each institution and between institutions in terms of their perceptions of their college environment?

The results and discussion in Chapter IV allow a response to these questions and lay the foundation for a discussion of a final research question:

7. Given the nature of the perceived environment at the respective institutions, what inferences can
be made as to the direction and amount of
developmental change experienced by students at
Kenyon College and Arts and Sciences Curriculum
students at The Ohio State University?

Within this context, the following is a summary
and discussion of results and conclusions derived from
the investigation of these research questions. The
discussion will focus on the two areas of development
examined (cognitive and psychosocial) and on
environmental perception. A summary profile of each
institution studied (Kenyon and Ohio State) will then
be made.

**Cognitive Intellectual Development**

Cognitive intellectual development of male
students at Kenyon College and male students in the
Arts and Sciences Curriculum at The Ohio State
University was assessed using the Perry Instrument.
Several concluding statements can be made from the
results of the administration of this instrument:

1. A high degree of relationship existed between
   the continuous scale method and the nominal
   scale method of scoring the Perry Instrument.
The nominal scale method more accurately reflected the qualitative nature of the differences between positions on the Perry continuum, while the continuous scale method allowed for finer distinctions between persons and groups of persons. Either scaling method by itself provided information concerning the groups under study; used together, the two scaling methods provided a strong tool for the continuing study of the college student along the dimensions suggested by Perry.

2. At Kenyon, development on the Perry continuum in terms of nominal scale scores was in the theoretically predicted direction, with freshmen scoring in the later stages of dualism and seniors well entrenched in the uncertainty of multiplicity. Using Chi-square, no statistically significant relationship could be found, however, between being a freshman or senior at Kenyon and Perry nominal scale scores.

Development on the Perry continuum at Kenyon in terms of continuous scale scores was in the theoretically predicted direction,
although the spread between freshmen and seniors was not as great as that suggested by the Perry nominal scale scores. Freshmen were again found in the later stages of dualism, while seniors were moving into multiplicity. In a statistical sense, the Point Biserial correlation between class membership and Perry continuous scale scores was moderate and significantly different from a zero correlation. The observed difference in mean scores between Kenyon freshmen and Kenyon seniors failed, however, to achieve statistical significance. That is, at Kenyon, the Perry Instrument did not discriminate between classes.

3. At Ohio State, development of students in the Arts and Sciences Curriculum, as shown by Perry nominal scale scores, was in the theoretically predicted direction. Freshmen were making their first moves away from dualistic thinking, while seniors perceived a world in which diversity of opinion was legitimate, but temporary. As with Kenyon students, using Chi-square, no statistically significant relationship could be
found between being a freshman or senior at Ohio State and Perry nominal scale scores.

Cognitive intellectual development along the Perry continuum at Ohio State as measured on the continuous scale was in the theoretically predicted direction. The spread between freshmen and seniors was again not as great as that suggested by students' nominal scale scores. Freshmen were found advancing toward a position where uncertainty is afforded a legitimate existence. Seniors perceived uncertainty as being acceptable with the understanding that it will eventually show itself right or wrong. They were, however, moving toward a position defined by pervasive uncertainty. The Point Biserial correlation between class membership at Ohio State and Perry continuous scores was moderate in size and significantly different in a statistical sense from a zero correlation. The difference in continuous score means between Ohio State freshmen and seniors failed to achieve statistical significance, however. That is, at
Ohio State, the Perry Instrument did not discriminate between classes.

4. When viewed as combined groups, seniors from Ohio State and Kenyon scored at a higher developmental level than freshmen from Ohio State and Kenyon on both the nominal and continuous Perry scales. On both scales, the stage difference was only one-half step; in each case, however, the difference was statistically significant. Both scales showed the freshman to senior tendency in development as being toward a greater acceptance of uncertainty and alternatives. For the majority of students, however, the pervasive uncertainty and plurality of thinking typical of multiplicity had not taken hold by the senior year.

When examining Perry Instrument results as nominal data, the relationship between class membership and Perry nominal scale scores resulted in a statistically significant Chi-square value. More specifically, the obtained frequencies for the freshmen and senior classes departed significantly from the frequencies
expected if there had been no difference as a result of group membership.

The Point Biserial correlation examining the relationship between class and Perry continuous scale scores was moderate in size; however, the difference between this correlation coefficient and a zero correlation was statistically significant. The difference between overall freshman and senior observed mean scores on the continuous scale around the Perry state of Multiplicity Subordinate (3.00) was also statistically significant.

5. Ohio State students as a group and Kenyon students as a group scored differently on the Perry Instrument. Using the nominal scale method, the range of scores from Multiplicity Prelegitimate (2-2) to Relativism (5-5) was the same at both institutions; within this range, a large number of both Ohio State and Kenyon students were in the latter stages of dualism. The percentage of Ohio State students in dualism, however, was substantially greater than the number of Kenyon students in dualism;
whereas, the percentage of Kenyon students in transition between dualism and multiplicity exceeded that for Ohio State. Similarly, a larger percentage of Kenyon students perceived the world from a multiplistic structure of thinking. The Chi-square calculated to examine this relationship between institution attended and Perry nominal scale scores failed, however, to achieve statistical significance.

Continuous scale scores resulted in a statistically significant difference between means for Kenyon and Ohio State students, with Kenyon students moving away from Multiplicity Subordinate and Ohio State students approaching this view of the world. That is, Kenyon students as a whole now afforded uncertainty a legitimate existence, and were moving toward a structure of thinking in which such uncertainty is pervasive. Ohio State students acknowledged uncertainty's existence, but had not given such uncertainty the status of, in Perry's words, "epistemological legitimacy." A Point Biserial correlation relating Perry continuous scale
scores to institutional affiliation was moderate; its difference from a zero correlation was statistically significant.

6. Comparisons between Kenyon and Ohio State freshmen and between Kenyon and Ohio State seniors followed the pattern of differences established in comparing the two institutions as whole entities. On both the nominal and continuous scales, Kenyon freshmen and seniors tended to score at slightly higher levels of development than Ohio State freshmen and seniors, respectively.

Chi-squares relating Perry nominal scale scores to dichotomous group membership (Kenyon freshmen vs. Ohio State freshmen, Kenyon seniors vs. Ohio State seniors) failed, however, to achieve statistical significance. Hence, differences between these groups could have been chance occurrences.

Likewise, differences between group means calculated using Perry continuous scale scores failed to achieve statistical significance. That is, within each class (freshman and
senior), the Perry Instrument failed to
discriminate between institutions (Kenyon and
Ohio State). The Point Biserial correlation
between being either a Kenyon freshman or Ohio
State freshman and Perry continuous scale scores
was moderate and significantly different from a
zero correlation. The Point Biserial
correlation between being either a Kenyon senior
or Ohio State senior and Perry continuous scale
scores was low and nonsignificant.

Hence, in the area of cognitive intellectual
development, a statistically significant difference was
found between being a student at Kenyon College and a
student in the Arts and Sciences Curriculum at The Ohio
State University. Similarly, a statistically
significant difference was found between being a
freshman and a senior, a result supportive of notions
of development occurring during the college years, at
least along the continuum suggested by Perry. Finer
discriminations than these cannot be made with
statistical confidence, although the tendencies were
(1) within each institution, for seniors to score at
higher developmental levels than freshmen, and (2)
between institutions, for Kenyon freshmen and Kenyon seniors to have higher developmental scores than Ohio State freshmen and seniors, respectively.

It should also be noted that the results of this study (which indicate the majority of freshmen to be in dualistic developmental levels, and the majority of seniors to be in transition between dualism and multiplicity or firmly entrenched in multiplicitic categories) are consistent with the findings of earlier research studies (Rodgers, 1977; Rodgers et al., 1978; Widick, 1977) as discussed in Chapter II.

**Psychosocial Development**

The developmental levels of male freshman and senior students at Kenyon College and in the Arts and Sciences Curriculum at The Ohio State University were assessed and compared on three dimensions of Chickering's Theory of psychosocial development. These three developmental vectors are: Establishing Identity, Freeing Interpersonal Relationships, and Developing Purpose. The first dimension, Establishing Identity, was assessed using the Erwin Identity Scale (Erwin, 1978). Freeing Interpersonal Relationships was
studied using the Nines-Jensen Interpersonal Relationship Inventory (Nines and Jensen, 1978). The third dimension, Developing Purpose, was examined using the Barratt Developing Purposes Inventory (Barratt, 1978). Concluding statements relating to each of these three instruments ensue.

Erwin Identity Scale. As interpreted by Erwin, Establishing Identity involves three issues: an increasing awareness of self or Confidence, clarification of Sexual Identity, and Conceptions About Body And Appearance.

1. On the Confidence, Sexual Identity, and Conceptions About Body And Appearance Subscales of the Erwin Identity Scale (EIS), differences in mean scores between the various groups were mixed in terms of direction. On each subscale, and contrary to Chickering's findings, Kenyon freshmen tended to show a higher developmental level than Kenyon seniors. Ohio State seniors tended to show a higher level of development than Ohio State freshmen on each subscale, a result in keeping with Chickering's formulations concerning direction of development. On the
Confidence Subscale and the Conceptions About Body And Appearance Subscale, seniors as a group scored higher than freshmen as a group; the reverse was true on the Sexual Identity Subscale.

On all three subscales, freshmen at Kenyon scored higher than freshmen at Ohio State, while seniors at Kenyon scored lower than seniors at Ohio State. Ohio State students as a group showed higher developmental scores than Kenyon students as a group on the Confidence Subscale, and lower developmental scores on the Sexual Identity and Conceptions About Body And Appearance Subscales.

2. To examine these differences in observed group means, Multivariate Analysis of Variance procedures (with the three subscale scores as the multiple dependent variables) were employed. Only main effects for institution (Kenyon vs. Ohio State) were found to be statistically significant. Follow-up Linear Discriminant Analysis of the main institution effects indicated that the Confidence Subscale was
primarily responsible for discriminating between students at Kenyon and Ohio State. That Chickering and Erwin define Confidence as the first and overriding aspect of identity is no coincidence. On this subscale, Ohio State students had a higher score than Kenyon students, an indication of a greater degree of assuredness by Ohio State students in themselves and their capabilities.

3. Erwin, in his study of high school students and college freshmen, reported that overall, "the EIS appears to be sensitive to a greater awareness and acceptance of one's self as age increases" (Erwin, 1978, p. 160). Failure in this study to find statistically significant institution by class interaction effects or statistically significant main class effects did not allow for an extension of Erwin's findings to the entire four year college experience. That is, observed group differences on the EIS subscales between freshmen and seniors, in general, and between freshmen and seniors within Kenyon and Ohio State, in particular, were not
of sufficient magnitude (given the variability of group scores) to provide a statistically significant indication of development taking place.

Erwin's work with an original version of the EIS suggested that changes in identity as defined by Chickering may not occur between the freshman and senior years, the EIS is validly measuring a conceptualization of identity which is discrepant from Chickering's, or the EIS is not validly measuring the construct that is defined by Chickering. These issues continue to raise themselves concerning the current version of the Erwin Identity Scale, and may account for the lack of statistically significant developmental change in terms of Establishing Identity. To expand on these issues as they relate to this study:

a) Changes in identity as defined by Chickering may occur at a time other than that investigated by this study. Freshmen in this sample were assessed during the Spring of their first year in college. Erwin's studies
assessed students prior to and during their first year in college. It is possible that change along the dimensions assessed by the EIS actually takes place before the end of the freshman year. Chickering's work would suggest, however, that changes on this developmental dimension normally occur approximately between the sophomore and junior years in college. Although earlier development in terms of Establishing Identity is theoretically possible at a given institution, it is contrary to the norm suggested by Chickering.

It is also possible that students in this study had not encountered the challenges of this developmental position by the end of their senior year. It seems improbable, however, that this central issue of late adolescent and early adulthood development had not been experienced, if not partially resolved, by the students in the current study. Hence, one's attention is drawn to alternative explanations.
b) The Erwin Identity Scale may be validly measuring a conceptualization of Establishing Identity which is discrepant from Chickering's, or the instrument may not be validly measuring the constructs associated with Identity formation as defined by Chickering. As noted above, Chickering postulated that the issues associated with Establishing Identity (i.e., Confidence, Sexual Identity, and Conceptions About Body And Appearance) are typically ascendant during the middle segment of the student's college career. Erwin's finding of change along this dimension prior to and during the freshman year suggests that the EIS may actually be assessing development along Chickering's first three vectors. That is, the Confidence Subscale may be more closely related to Chickering's first vector of development, Achieving Competence; the Sexual Identity Subscale may be tapping aspects of Chickering's second developmental dimension, Managing Emotions; and the Conceptions About
Body And Appearance Subscale may be related to all of Chickering's first three developmental tasks, namely, Achieving Competence, Managing Emotions, and Becoming Autonomous. According to Chickering, Establishing Identity presupposes initial developmental change on each of the first three vectors of his theory, and such change typically takes place during the first years in college. The possibility that the Erwin Identity Scale is more closely associated with the constructs of Chickering's first three vectors provides an explanation for the instrument's ability to depict developmental change prior to and during the freshman year of college, and its inability to ascertain such change between the end of the freshman and senior years. This possibility speaks to the interrelatedness of the dimensions of Chickering's Theory; nonetheless, the EIS's lack of power to discriminate between class groups in this study may be directly related to the confounding within the instrument of
aspects of the various Chickering dimensions. Establishing Identity as defined by Chickering and Erwin is a complex, wide-ranging phenomenon. More precise definition of the construct may need to go hand in hand with future refinements of the Erwin Identity Scale.

**Mines-Jensen Interpersonal Relationship Inventory**

The Mines-Jensen Interpersonal Relationship Inventory (MIRI) attempts to measure student development according to the constructs defined by Chickering as his fifth vector, Freeing Interpersonal Relationships. In keeping with Chickering's formulations, this instrument assesses persons in two subscale areas: Tolerance and Quality Of Relationships.

1. Differences between freshmen and seniors on the Tolerance Subscale were minimal. This was true at Kenyon, at Ohio State, and when viewing the combined freshman and senior scores from both institutions. The tendency in all cases, however, was for lower mean scores in the senior year, a result contrary to Chickering's and Mines' postulations. Kenyon students (freshmen,
seniors, and as a group) did have a tendency toward slightly higher mean scores on this dimension than did Ohio State students.

On the Quality Of Relationships Subscale, results were varied. Differences between all groups were small. Senior means were slightly higher than freshman means at Ohio State and when viewing the difference between all seniors and all freshmen at both institutions combined. At Kenyon, the reverse was true. In fact, Kenyon students seemed to regress on this scale. Consequently, Kenyon freshmen scored higher than Ohio State freshmen, but Kenyon seniors scored lower than Ohio State seniors.

2. Multivariate Analysis of Variance and Linear Discriminant Analysis techniques were utilized to further examine the observed group mean differences. With Tolerance and Quality Of Relationships Subscale scores as the multiple dependent variables, only main institution effects (Kenyon vs. Ohio State) were found to be significant. The Tolerance Subscale was found to be responsible for the discrimination between
Kenyon and Ohio State. On this subscale, Kenyon students as a group tended to score higher than Ohio State students as a group. Higher scores on this dimension indicate increased openness and acceptance of diversity, especially in terms of relationships with other persons.

3. Studies by Mines (1978) using the MIRI indicated that developmental change on Chickering's vector of Freeing Interpersonal Relationships does occur during the freshman year in college. Results reported in this study did not allow for an extension of Mines findings to the four year college experience. That is, group differences on the MIRI subscales between Kenyon freshmen and seniors, between Ohio State freshmen and seniors, and between all freshmen as a group and all seniors as a group were not statistically significant. A variety of reasons could account for this lack of developmental change in Freeing Interpersonal Relationships:

a) Changes along this dimension may not occur between the freshman and senior years as suggested by Chickering. Freshmen in this
sample were assessed in the Spring of their freshman year. Mines' longitudinal study examined the development of freshmen between summer orientation and the end of the freshman year. It is possible that changes on this dimension actually occur during the freshman year rather than between the freshman year and the senior year. Chickering's findings would argue, however, that such change would normally occur later in a student's college career. It is possible that changes on this dimension actually occur after the senior year, a finding that would still be consistent with Chickering's Theory.

b) The HIBI may be validly measuring a conceptualization of Freeing Interpersonal Relationships which is discrepant from Chickering's, or the HIBI may not be validly measuring the construct that is defined by Chickering. As noted above, Chickering suggested that development on this vector occurs during the later years in college,
after the establishing of a strong sense of identity. Mines' finding of developmental changes on this vector during the freshman year would appear to be in contradiction to Chickering's formulations. As was the case with Ervin's work, it is possible the NIBI is actually measuring aspects of Chickering's first three vectors, namely Achieving Competence, in particular social and interpersonal competence; Managing Emotions; and Becoming Autonomous. Chickering's work suggested that development on these three vectors does indeed occur during the freshman year. This statement is more consistent with Mines' findings, and could provide a possible explanation for the lack of developmental change on the Mines-Jensen Interpersonal Relationship Inventory between the end of the freshman and senior years in college. In addition, the concepts of Tolerance and Quality of Relationships are broadly defined by Chickering. Efforts by Mines to provide more clarity in terms of explicating the
dimension of Freeeing Intepersonal Relationships are noteworthy. Additional refinement is needed, however, if future versions of the HIBI are to be useful in discriminating between groups of students on this developmental vector.

**Barratt Developing Purposes Inventory.** The Barratt Developing Purposes Inventory (DPI) seeks to assess individuals on Chickering's vector of Developing Purpose. The instrument is comprised of six subscales which seek to both expand upon and make more specific Chickering's conceptualizations concerning development in the areas of avocational and recreational interests, vocational plans and aspirations, and general lifestyle considerations. The six subscales are: Student Behaviors, Professional Behaviors, Career Behaviors, Recreation Activities, Recreation Social, and Life Style. The results of this study stemming from the administration of the DPI to male freshman and senior students at Kenyon College and in the Arts and Sciences Curriculum at The Ohio State University indicated the following:
1. On four of the subscales, students as a group at Kenyon scored at a more advanced level of development than students as a group at Ohio State. These four subscales were Student Behaviors, Recreation Activities, Professional Behaviors, and Recreation Social. Only small differences were reported on the latter two subscales. Ohio State students as a group were developmentally ahead on the Career Behavior and Life Style Subscales.

Seniors as a group showed a tendency toward a higher developmental level than freshmen as a group on the Professional Behaviors, Career Behaviors, Recreational Activities and Life Style Subscales. Only on the final subscale, Life Style, was this difference of any magnitude, however. This tendency was reversed on the Student Behaviors and Recreation Social Subscales, where freshmen scored at a slightly higher developmental level than seniors.

At Kenyon, seniors tended toward more mature development than freshmen on the Career Behaviors, Recreation Activities, Recreation
Social, and Life Style Subscales; however, group mean differences on the first three of these subscales were minimal. Freshmen had scores indicating greater development on the Student Behaviors and Professional Behaviors Subscales, although the difference in scores on the Professional Behaviors Subscale was small.

At Ohio State, seniors were developmentally ahead of freshmen on all of the subscales except Recreation Social. On the Professional Behaviors, Recreation Activities, and Recreation Social Subscales, however, the differences were small.

Freshmen at Kenyon had a propensity toward greater development than freshmen at Ohio State on four of the six subscales: Student Behaviors, Professional Behaviors, Recreation Activities, and Recreation Social. The difference on the last subscale mentioned was only slight. Ohio State freshmen showed greater developmental trends than Kenyon freshmen on the Career Behaviors and Life Style Subscales.
For seniors, students at Kenyon showed a slightly more advanced level of development than students at Ohio State on the two Recreation Subscales. Only a minor difference was recorded on the Recreation Social Subscale. Seniors at Ohio State were more advanced on the Student Behaviors, Professional Behaviors, Career Behaviors, and Life Style Subscales, with the only substantial differences occurring on the final two subscales.

2. Observed subscale differences were further examined using Multivariate Analysis of Variance and Linear Discriminant Analysis. The main institution difference (Kenyon vs. Ohio State) was statistically significant. Neither the main class difference (freshman vs. senior) nor institution by class interaction differences were statistically significant. Follow-up study of the significant main institution effects indicated that three of the subscales served to discriminate between Ohio State and Kenyon. These three subscales were Career Behaviors, Recreation Activities, and Life Style. On the
Career Behaviors Subscale, Ohio State students showed a tendency toward greater maturity in terms of their future plans for careers and the world of work. This finding was not entirely surprising, given the greater emphasis traditionally placed on careers and career development at a large multipurpose university when compared to a small liberal arts college. Similarly, on the Life Style Subscale, Ohio State students displayed more maturity in terms of a greater sense of the Life Style which they desire to pursue. Barratt includes in this area issues pertaining to marriage, morality and values, community activities, and the relative worth of material goods and benefits.

Kenyon students tended to display more development than Ohio State students on the Recreation Activities Subscale, reflecting a breadth and depth in terms of participation in and/or familiarity with activities and new experiences.

3. A subscale derived from each of the three major areas of Developing Purpose as defined by
Chickering served to discriminate between institutions. That is, the Career Behaviors Subscale reflects issues addressed in the area of vocational plans and aspirations, the Recreation Activities Subscale reflects issues addressed in the area of avocational and recreational interests, and the Life Style Subscale reflects issues addressed in the area of general life style considerations. At least in terms of discriminating between institutions, the subscales of the Barratt Developing Purposes Inventory did reflect differences related to the constructs advanced by Chickering. Failure of other subscales to contribute to the discrimination between institutions may have been the result of a number of factors:

a) The institutions may, in fact, not differ on the remaining dimensions.

b) The constructs defined by the various subscales may be confounded with the issues encompassed by the other subscales. Such confounding of variables may make the contribution of a given subscale moot.
c) The instrument may not be sensitive enough to institutional differences on the dimensions postulated.

4. Failure to achieve statistically significant results when comparing main class effects (freshman vs. senior) and interaction effects (institution by class) could be attributed to a number of possible causes:

a) Development on the dimension of Freeing Interpersonal Relationships may not take place between the freshman and senior years in college. Using the standard scoring technique with the DPI-2, Barratt found that developmental change on several dimensions measured by the DPI-2 does occur during the freshman year in college. If this is so, conducting this study in the Spring of the students' freshman year may have "missed" development which actually already took place. Note, however, that development on this vector at this early stage in a student's college experience would be contrary to Chickering's theoretical
groundwork. Recall that Chickering postulated such development as occurring later in a student's academic life, and possibly not until post-undergraduate years. A conclusion more in keeping with Chickering's findings, but in opposition to Barratt's results, is that the inability of the DPI to discriminate between class membership was due to the fact that significant development on this dimension at Kenyon and Ohio State does not occur until after students leave the two institutions. Such a conclusion is not entirely foreign to traditional notions of the outcomes of a liberal arts education, and may not be unreasonable to make in relation to the outcomes of an arts and sciences curriculum, especially in those areas where the arts and sciences curriculum most closely resembles the liberal arts curriculum.

b) The DPI may be validly measuring a conceptualization of Developing Purpose which is discrepant from Chickering's, or the
instrument may not be validly measuring the constructs as they were defined by Chickering. Barratt notes that the process of developing the DPI Inventory had "been one of combining the empirical information with the conceptual to redefine and modify the scale constructs and idea of Developing Purpose to arrive at both a strong conceptualization and assessment instrument" (Barratt, 1978, pp. 13-14). In this process of interpretation and redefinition of Chickering's constructs, it is possible that certain subscale constructs no longer reflect Chickering's notions of Developing Purpose. For example, items defined as belonging to the Student Behaviors Subscale may be more adequate representations of behaviors included in Chickering's first vector, Developing Competence. Likewise, items defined as belonging to the Recreation Social Subscale may be more accurately associated with Chickering's second and third vectors, Managing Emotions and Developing Autonomy.
The ability of the DPI as reported by Barratt to assess students' development of a sense of purpose during the freshman year could be a result of a "misdefinition" of terms; the inability of the instrument to discriminate between persons in the freshman and senior years could also be the result of these same factors. Alternatively, the Developing Purposes Inventory may not be able to adequately assess students on this broad area of development. Barratt addressed this problem by refining the original version of the DPI to include the six subscales discussed in this paper. The constructs appear to need more precise definition than even the six new subscales provide.

**Environmental Assessment**

The nature of the environment as perceived by male freshman and senior students at Kenyon and Ohio State was assessed using the College and University Environment Scales, Second Edition (CUES II). In addressing the question, "What do students perceive to
be characteristic of the environment?", the CUES II results served as an opinion poll describing the campus environment on seven dimensions or scales. These scales are: Practicality, Community, Awareness, Propriety, Scholarship, Campus Morale, and Quality Of Teaching And Faculty Student Relationships. Within the context provided by these seven dimensions, the data analysis presented in Chapter IV allows for the following concluding statements concerning the environments at Kenyon and Ohio State (where appropriate, brief descriptions of the scales are included in parentheses to provide added meaning to the statements):

1. Kenyon College students reported their college environment to be similar to that of other highly selective liberal arts colleges. In comparison to similar institutions in a national reference group, Kenyon students rated their college as placing slightly more emphasis on Practicality (enterprise, organization, material benefits, social activities, vocational emphasis, orderly supervision), and slightly less emphasis on Scholarship (intellectuality,
scholastic discipline, intellectual achievement, pursuit of knowledge), Awareness (awareness of self, of society, of aesthetic stimuli), and Propriety (mannerly, considerate, proper, conventional). The difference was most pronounced on the Propriety Scale. On the Community Scale (friendliness, cohesiveness, group orientation), Kenyon scores were virtually the same as those of the national reference group.

2. Ohio State University students described their college environment as being similar to that of other general universities. In comparison to such similar institutions in a national reference group, Ohio State students placed their university somewhat higher on the Scholarship (intellectuality, scholastic discipline, intellectual achievement, pursuit of knowledge), Awareness (awareness of self, of society, or aesthetic stimuli), Community (friendliness, cohesiveness, group orientation), and Propriety (mannerly, considerate, proper, conventional) Scales. Emphasis on Practicality
(enterprise, organization, material benefits, social activities, vocational emphasis, orderly supervision) at Ohio State was slightly below that occurring at other general universities. The differences in Ohio State scores may reflect the fact that the Ohio State students sampled were enrolled in the Arts and Sciences Curriculum, and were not representative of the Ohio State University population as a whole. One can speculate that the Ohio State University population as a whole is more heterogeneous and has perceptions of the environment more like those of students in the general university national reference group.

3. In comparison to Ohio State, the Kenyon environment was viewed by its students as placing stronger emphasis on Scholarship (intellectuality, scholastic discipline, intellectual achievement, pursuit of knowledge), Community (friendliness, cohesiveness, group orientation), Campus Morale (student freedom of expression, assimilation into campus life, group cohesiveness, supportive and spirited
relationships, commitment to intellectual tasks), and Quality Of Teaching And Faculty-Student Relationships. In comparison to Kenyon, the Ohio State environment was described by its students as placing stronger emphasis on Practicality (enterprise, organization, material benefits, social activities, vocational emphasis, orderly supervision). Approximately equal emphasis was placed at both institutions on Awareness (awareness of self, of society, of aesthetic stimuli) and Propriety (mannerly, considerate, proper, conventional). At both institutions, on the Awareness Scale the emphasis was above that displayed by the total national reference group; on the Propriety Scale, this emphasis was slightly below that of the total national reference group.

4. At both Kenyon and Ohio State, freshmen rated their institution higher than seniors on virtually every scale. The only exception was the Practicality Scale (enterprise, organization, material benefits, social activities, vocational emphasis, orderly
supervision) at Kenyon, where senior scores were slightly higher than freshman scores.

At Kenyon, the difference in perception between freshmen and seniors was greatest on the Propriety Scale (mannerly, considerate, proper, conventional). At Ohio State, the difference was likewise most pronounced in this area, as well as in the areas of Community (friendliness, cohesiveness, group orientation) and Campus Morale (student freedom of expression, assimilation into campus life, group cohesiveness, supportive and spirited relationships, commitment to intellectual tasks). The observed difference in freshman and senior perceptions of Propriety at both Kenyon and Ohio State may have been a result of a variety of factors, including the freshman "expectation" phenomenon (discussed in the following paragraph) and a tendency for seniors at these institutions to display greater independence of thought and action as they prepare to leave their respective institutions and move onto new experiences.
As suggested earlier in this paper, the assessment of freshmen in terms of their perceptions of the college environment provides more meaningful data after the freshmen have been exposed to the college environment for some period of time. Perceptions of environmental characteristics made prior to such sufficient "exposure" are better classified as expectations of the environment (Pace, 1969, p. 10). Although the freshman scores presented in Chapter IV do reflect almost a one year "exposure" to the Kenyon and Ohio State environment, perception is in all likelihood still mixed with expectation, resulting in part for the differences in scale scores reported by freshmen and seniors.

5. Both freshmen and seniors at Kenyon indicated a stronger emphasis on Scholarship (intellectuality, scholastic discipline, intellectual achievement, pursuit of knowledge), Community (friendliness, cohesiveness, group orientation), and the Quality Of Teaching And Faculty-Student Relationships than did their
counterparts at Ohio State. Both freshmen and seniors at Ohio State indicated greater emphasis on Practicality (enterprise, organization, material benefits, social activities, vocational emphasis, orderly supervision) at their institution than did students at Kenyon, with the difference most pronounced in the freshman year. Scores from freshmen at both institutions were similar on the Awareness (awareness of self, of society, of aesthetic stimuli) and Propriety (mannerly, considerate, proper, conventional) Scales. As with freshmen, the senior difference on the Awareness Scale was minimal between the two institutions; on the Propriety Scale, a very low emphasis perceived by Kenyon seniors resulted in a substantial difference between Kenyon and Ohio State seniors in this area. On the Campus Morale Scale (student freedom of expression, assimilation into campus life, group cohesiveness, supportive and spirited relationships, commitment to intellectual tasks), freshmen at both Kenyon and Ohio State, as well as seniors at Kenyon
indicated an environmental press existing in this area. Only Ohio State seniors displayed a low score on this scale.

**Institutional Profiles**

As suggested earlier, given the nature of the perceived environment at the respective institutions, the results and discussion presented in Chapter IV and thus far in this Chapter enable a discussion of the direction and amount of developmental change experienced by students at Kenyon College and Arts Sciences Curriculum students at The Ohio State University. Inferences relating to this research issue are made by providing a brief description of each institution and its students which evolved from the data of this study:

**Kenyon College.** From an analysis of the Perry data, Kenyon students as a group were described as perceiving, organizing, and evaluating experiences they encounter from a set of assumptions where uncertainty is afforded a legitimate existence. Furthermore, students at Kenyon were seen moving toward a view of the world in which uncertainty is pervasive. The lack
of statistically significant results did not allow for strong conclusions concerning freshman to senior differences in terms of cognitive intellectual development within Kenyon. The results presented did indicate, however, a tendency for development to occur in the direction predicted by Perry. That is, there appeared to be movement away from simple, dualistic ways of thinking toward a more complex, multiplistic structure as students advanced from the freshman through the senior year.

This development in the process of cognition was undertaken in an environment where emphasis was placed on Scholarship (scholastic discipline, intellectual achievement, pursuit of knowledge), Awareness (of self, of society, of aesthetic stimuli), Community (friendliness, cohesiveness, group orientation), Campus Morale (student freedom of expression, assimilation into campus life, group cohesiveness, commitment to intellectual tasks), and Quality Of Teaching And Faculty-Student Relationships. Lesser emphasis was placed on issues of Propriety (mannerly, considerate, proper, conventional) and Practicality (enterprise, organization, material benefits, social activities, vocational emphasis, orderly supervision).
This emphasis on scholarship and intellectual achievement, relationships with faculty and others, and personal, poetic, and political meaning described an environment well suited for the developmental movement of students out of dualism, through multiplicity, and onto relativistic modes of thinking. Given the extent to which the environment supported the learning and internalizing processes of analysis and synthesis, and the extent to which the environment encouraged awareness, openness to alternatives, close relationships with and understanding of others, developmental movement along the scheme proposed by Perry was supported.

Freshmen and seniors at Kenyon paralleled one another in their view of the environment, although freshmen tended to rate six of the seven dimensions somewhat higher as environmental descriptors than seniors. As discussed earlier in this paper, this may reflect confounding of expectations and perceptions of reality. Slightly higher senior scores on issues of enterprise, organization, material benefits, social activities, vocational emphasis, and orderly supervision (i.e., Practicality) could have been
related to the seniors' pending graduation and new way of life. Seniors at Kenyon tended to rate Propriety (mannerly, considerate, proper, conventional) considerably lower than Kenyon freshmen, a fact not inconsistent with movement toward more multiplicitic ("doing one's own thing") structures of thinking in the senior year.

From a theoretical framework emphasizing the process of cognition, the discussion in this study shifted to a framework emphasizing content. In examining the content issues of Identity, Interpersonal Relationships, and Purpose, results of this study have shown that statistically significant differences existed between Kenyon students viewed as a group and Ohio State students viewed as a group.

Developing Identity is defined as involving three issues. The first and overriding aspect of identity is an increasing sense of self or Confidence. Within the context of increasing Confidence, development is seen to focus on two other issues: clarification of Sexual Identity and Conceptions About Body And Appearance. The dimension which served to discriminate between students at Kenyon and Ohio State was the issue of
Confidence. This inner assuredness, however, is not "gained nor maintained once and for all" (Erikson, 1959, p. 11). It is constantly challenged and redeveloped, although at a more effective and mature level. The results of this study showed Ohio State students to be more advanced on this subscale than Kenyon students. One is led to speculate that as Kenyon students move toward more multiplistic structures of thinking (as determined from administration of the Perry Instrument), their sense of Confidence is being strongly challenged. That is, as they move from the certainty of dualism toward the pervasive uncertainty of multiplicity and relativism, it is not surprising to find that solid sense of self, which is defined by Chickering and Erwin as Confidence, being tested. Within this context, and although the difference between Kenyon freshmen and seniors was not statistically significant, it is worth noting that Kenyon seniors scored lower on the Confidence Subscale than any other group measured.

Freeing Interpersonal Relationships involves developing a Tolerance for a wider range of people, and a shift in the Quality Of Relationships which one has.
The issue of Tolerance served to discriminate between students at Kenyon and students at Ohio State, with Kenyon students showing more developmental progress in this dimension than Ohio State students. As suggested earlier, higher scores by Kenyon students on the Perry Instrument showed a tendency toward acceptance of alternatives and a movement toward understanding and empathizing with others. Such development in the student's way of viewing the world is certainly compatible with the "increasing openness and acceptance of diversity" which serves to define development in the area of Tolerance. As stated by Mines:

To the extent that one learns to be open minded and think in complex ways as opposed to a dualistic, right and wrong thinking style, one should be able to apply changes in cognitive style to the area of interpersonal relationships, thus becoming more tolerant and interdependent. Thus, faculty modeling of cognitive complexity and their relationships with the students should contribute to change in Freeing of Interpersonal Relationships.

(Mines, 1978, p. 7)

Once again, an environment such as Kenyon's, in which scholarship, quality of teaching, faculty-student relationships, community, campus morale, and awareness are emphasized, should be most compatible with development in this area.
On the dimension of Developing Purpose, issues of Career Behaviors, Recreation Activities, and Life Style discriminated between students at Ohio State and Kenyon. Ohio State students displayed greater development on the Career Behaviors and Life Style dimensions. Higher scores in the area of Recreation Activities by Kenyon students reflected a greater tendency to recognize alternatives and to begin taking responsibility for one's own choices and actions. An environment such as Kenyon's, which appears less structured and which emphasizes scholarship, quality of teaching, faculty-student relationships, community, and high morale, can be seen as enhancing development in areas concerned with experience and experimentation in avocational and recreational pursuits. The discipline and broadening resulting from scholarship within the classroom can be transferred into one's more general out-of-classroom existence, although such radiation of development across dimensions is neither guaranteed nor consistent over time. A recognition by Kenyon students that choices in the area of Recreation Activities exist, and that one does have responsibility for choosing between alternatives is consistent with
stages of development characterized by multiplicistic and relativistic thought.

The Ohio State University. Analysis of the results from administration of the Perry Instrument to students in the Arts and Sciences Curriculum at Ohio State indicated that Ohio State students as a group perceived, organized, and evaluated experiences they encountered from a set of assumptions where the existence of uncertainty is acknowledged. In contrast to students at Kenyon, however, Ohio State students maintained an understanding that such uncertainty is only temporary and would eventually show itself to be right or wrong. As with the Kenyon findings, the lack of statistically significant results in comparing Ohio State freshmen and seniors did not allow for strong conclusions concerning differences between these two groups. There was a tendency, however, for development in the cognitive domain to take place in the theoretically predicted direction. That is, there was development through dualism toward multiplicity as students went through their college career at Ohio State.
The environment at Ohio State was described by its students as having strongest emphasis in the areas of Awareness (awareness of self, of society, of aesthetic stimuli) and Practicality (enterprise, organization, material benefits, social activities, vocational emphasis, orderly supervision). Lesser (i.e., moderate) emphasis was placed on Scholarship (scholastic discipline, intellectual achievement, pursuit of knowledge), Community (friendliness, cohesiveness, group orientation), Propriety (mannerly, considerate, proper, conventional), Campus Morale (student freedom of expression, assimilation into campus life, group cohesiveness, supportive and spirited relationships, commitment to intellectual tasks), and Quality Of Teaching And Faculty-Student Relationships.

Pace (1969) described environments emphasizing Practicality to be somewhat structured and organized. He noted, however, that such an environment "responds to entrepreneurial activities and is usually characterized by good fun and school spirit" (Pace, 1969, p. 11). The "limited" freedom, moderate structure, and personal atmosphere characteristic of
Ohio State's Practical environment would appear to offer support to the large percentage of students in stages of dualism. At the same time, the emphasis on awareness of self and society provides a source of possible moderate diversity and challenge to students who are moving through dualism toward positions of multiplicity.

Ohio State freshmen rated all seven CUES II scales as being a stronger influence than did Ohio State seniors. This was especially true on the Campus Morale Scale (student freedom of expression, assimilation into campus life, group cohesiveness, commitment to intellectual tasks), Community Scale (friendliness, cohesiveness, group orientation), and Propriety Scale (mannerly, considerate, proper, conventional), where freshmen indicated much greater emphasis being placed on these areas. Once again, this may reflect a mixing of expectations with perceptions of reality. Low senior recognition of Propriety may also reflect movement by seniors toward more multiplicitic modes of thinking.

In terms of the content issues of Identity, Interpersonal Relationships, and Purpose, statistically
significant differences between students at Kenyon and Ohio State, viewed as two distinct groups, were found to exist. Results concerning the issue of Establishing Identity found Ohio State students scoring higher than Kenyon students on Confidence, the dimension which served to discriminate between Ohio State and Kenyon. One speculates that the security to be found in Ohio State students' dualistic patterns of thought had yet to be severely challenged by the uncertainties of the relativistic world. As students at both Ohio State and Kenyon move developmentally toward positions in which they begin to define their identities through the commitments they make in a world which is seen as primarily relativistic in nature (Perry stages 6 through 9), this inner sense of assuredness, i.e. this sense of Confidence, will be continually challenged, reaffirmed, and hopefully strengthened.

On the developmental dimension of Freeing Interpersonal Relationships, the issue of Tolerance served to discriminate between Ohio State and Kenyon students. As discussed above, Ohio State students showed less development on this dimension than Kenyon students. The fact that a large proportion of Ohio
State students are in positions of dualism suggests that diversity and alternative viewpoints for many Ohio State students are recognized, but not always afforded a truly legitimate existence. Hence, lower scores on a dimension of development (i.e., Tolerance) defined by increased openness and objectivity in one's relationships with others are consistent with the dualistic patterns evident in the students' thought processes.

Chickering (1969) argues that the establishment of a strong sense of identity provides a framework for interpersonal relationships. One could, therefore, logically argue that higher scores on the Confidence Subscale of the Erwin Identity Scale by Ohio State students should indicate higher Tolerance Subscale scores by Ohio State students as well. The relationships between aspects of development, however, are neither perfect nor linear. Development is a complex, multi-dimensional phenomenon which occurs at differing rates on differing issues. As such, interactions between the process and the content areas of development—that is, how one thinks and the issues one thinks about—need to be taken into account when
describing development. Thus, when differences between Ohio State students and Kenyon students on the Perry continuum are considered, differences on content issues such as Identity, Interpersonal Relationships, and Developing Purpose take on richer meaning.

Thus, for students at both Ohio State and Kenyon, the development of a sense of Tolerance continues. As persons recognize and accept the relative nature of knowledge and values, the concomitant openness and acceptance of diversity which typifies increasing Tolerance will "increase the range of alternatives for satisfying exchanges and for close and lasting friendships."

As noted above, in the broad area of development described by Chickering as Developing Purpose, results in the areas of Career Behaviors, Recreation Activities, and Life Style discriminated between students at Ohio State and Kenyon. Ohio State students' more advanced levels of development in the areas of Career Behaviors and Life Style were logically consistent with students' perceptions of the environment at their university as placing emphasis on issues of Practicality and Awareness. That is, at Ohio
State, enterprise, organization, material benefits, social activities, vocations, orderly supervision, awareness of self, awareness of others, and awareness of aesthetic stimuli were stressed. Such an environment could provide both challenge and support to students dealing with career issues (such as field of interest, major, world of work) and life style issues (such as marriage, morality and values, community activities, and the place of material goods and benefits in one's life). The more structured nature of such an environment, while not repressive, was supportive of development in students moving through the early stages of dualism toward multiplicity. Challenges in the environment took the form of demands for increased introspection and exposure to diversity in areas relating to aesthetics and society. As noted earlier in this study, a proper balancing of such challenges and supports is essential to optimal development during the college years.
Recommendations For Practice And Future Research

Based on the limitations and findings of this study, the following recommendations for practice and future research are offered:

1. The three Iowa Instruments and their respective subscales need to be refined and revised. New studies focusing on the nature and specificity of the constructs and on the validity and reliability of the subscales need to be undertaken. More clarity is needed in defining the developmental vectors the instruments purport to measure. In addition, normative data on the instruments needs to be compiled to further their research and practical applicability.

2. A technical manual describing research, the validity and reliability, and the scoring of the Perry Instrument needs to be compiled and published. Such an effort would greatly aid researchers and consumers of the Perry Instrument in more adequately addressing issues of development along the Perry continuum.
3. Refinement and revision of the developmental instruments used in this study necessarily imply refinement of the issues and theories which serve to inform the history and evolution of the various instruments. The resulting advances in theory can have implications for educational institutions as they attempt to facilitate and enhance the development of their students.

4. Although the College and University Environment Scales, Second Edition, discriminated between the two institutions in this study, additional studies should consider obtaining more current normative data on the CUES, or using more recently developed environmental perception instruments. In addition, environmental assessment instruments measuring behaviors as opposed to perceptions could also be utilized to provide a broader understanding of the interrelationships between the environment and development.

5. Restricting the study to two selected institutions necessarily produced results of limited generalizability. Similar studies
undertaken to include additional types of institutions could provide data and results having more extensive application.

6. Both cross-sectional and longitudinal studies assessing students prior to entering college and after completing college need to be made in order to more fully understand the process and content of development, and the differential impact of various types of educational settings.

7. This study has served to provide additional support for the findings of others that development is a complex, multi-dimensional phenomenon. Studies designed to more specifically analyze the interaction between process (cognitive development) theories and content (psychosocial) theories need to be undertaken to more accurately investigate development during the college years. In addition, investigations assessing students in other developmental content areas (e.g. the vectors of Chickering's Theory not discussed here) need to be pursued.
A key ingredient in translating developmental theory into practice is the assessment of persons in terms of applicable developmental theory (Miller and Prince, 1976) or, stated alternatively, the grounding of formal theory in the real context (Rogers and Widick, 1980). Results from this study can be useful to students, faculty, and administrators at Kenyon and at Ohio State in establishing goals and designing programs to better meet the developmental needs, interests, and challenges of students attending the respective institutions. Such planned impacts can either be institution wide or, more realistically, focused toward a more narrowly defined context and population. The central issue here is a recognition that individual differences in terms of development exist for students within a given educational institution, as well as for students attending different educational institutions. Hence, the effectiveness and efficiency of programs designed to meet student needs and enhance development are closely tied to valid assessment.
9. A developmental profile of the students at a given institution can and should serve to identify possible areas for faculty and staff development programming. For example, if students at a college or university are assessed as being at dualistic levels of cognitive functioning, faculty and staff members should be given the opportunity to develop the understanding and skills necessary to move students along the dualism-multiplicity continuum. Such a program implies acquiring a knowledge of appropriate theories of development, and the skills necessary to translate those theories into practice.

10. This study examined male students at Kenyon and Ohio State on selected developmental dimensions. A parallel study undertaken by Heidke (1982) examined women at the same institutions. An analysis of the combined data of both studies with sex as an independent variable should be undertaken to address any implied or actual differences in the results obtained from these two parallel studies.
The past twenty years have witnessed a significant increase in the knowledge and study of the effect or impact which colleges and universities have on their students. It is only recently, however, that knowledge about how students grow and change during their four year higher education experience has been included in the planning and design of programs and services, both inside and outside of the classroom. Hopefully, this study will contribute to this process in a very direct manner by providing two institutions of higher education, Kenyon College and The Ohio State University, with developmental data concerning their students and perceptual data concerning the institution environment. In more general terms, this project sought to add to the growing body of knowledge concerning student development. The approach taken here was to view such development as a multi-dimensional, complex process which reflects an interaction between the student and his or her environment. The intention was to address specific issues concerning student development per se, and to examine, through their use, a number of recent assessment techniques relating to student development.
concepts and theories. Herein lies the anticipated contribution of this study to that process which links the expanding knowledge of student development to the educational experience of the student.
Appendix A

PERRY INSTRUMENT
The instrument that follows has to do with how you as an individual think about various educational issues and identity concerns. There are no right and wrong responses to any of the items. What is important is the way you think about the items that are presented. Please be as complete and comprehensive as possible in your answers.

INSTRUCTIONS:

On the next several pages are short "Sentence Stems." Please respond to these stems by writing down what comes to your mind. Write at least three sentences. Please write in ink.

1. My main concern . . .

2. When I think about my future . . .
3. Choices...

4. For me to say "I believe"...

5. Choosing a career...
INSTRUCTIONS:

We would like you to write two essays in response to the questions posed on the next two pages. It will help greatly if you can be as specific and complete in your answers as possible.

ESSAY A. Describe the best class you've taken since you've been in college. What made it positive for you? Be as specific as possible. Feel free to go into as much detail as you think will give us a clear idea of the class; for example, you might want to discuss areas such as what the teacher was like, the subject matter, the particular content (readings, films, etc.), the atmosphere of the class, grading procedures, etc. We want your thoughts and comments -- a complete description of your experience and how you felt about it.
ESSAY B. One of the major issues in many individual's lives is the question of career choice and vocational decision making. Individuals approach this task very differently. Please discuss in detail all the things that you consider when approaching this question. It will be helpful if you can discuss the aspects of your answer with as much detail and as many examples as possible.
Appendix B

ERWIN IDENTITY SCALE
PLEASE NOTE:

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These consist of pages:

260-264
266-269
271-274
Appendix C

MINES-JENSEN INTERPERSONAL RELATIONSHIP INVENTORY
Appendix D

BARRATT DEVELOPING PURPOSES INVENTORY
Appendix E

COLLEGE AND UNIVERSITY ENVIRONMENT SCALES II
Directions

Colleges and universities differ from one another in many ways. Some things that are generally true or characteristic of one school may not be characteristic of another. The purpose of the College & University Environment Scales (CUES) is to help describe the general atmosphere of different colleges. The atmosphere of a campus is a mixture of various features, facilities, rules and procedures, faculty characteristics, courses of study, classroom activities, students' interests, extracurricular programs, informal activities, and other conditions and events.

You are asked to be a reporter about your school. You have lived in its environment, seen its features, participated in its activities, and sensed its attitudes. What kind of a place is it?

There are 160 statements in this booklet. You are to answer them True or False, using the answer sheet given you for this purpose.

As you read the statements you will find that many cannot be answered True or False in a literal sense. The statements contain qualifying words or phrases, such as "almost always," "frequently," "generally," and "rarely," and are intended to draw out your impression of whether the situation described applies or does not apply to your campus as you know it.

As a reporter about your college you are to indicate whether you think each statement is generally characteristic, a condition that exists, an event that occurs or might occur, the way people generally act or feel—short, whether the statement is more nearly True than False; or conversely, whether you think it is not generally characteristic, does not exist or occur, is more nearly False than True.

The CUES is not a test in which there are right or wrong answers; it is more like an opinion poll—a way to find out how much agreement or disagreement there is about the characteristics of a campus environment.

Instructions for Marking the Answer Sheet for CUES, Second Edition

1. PENCILS. Use any type of soft lead pencil (preferably No. 2). Do not use an ink or ball-point pen.

2. MARK ONLY ON THE ANSWER SHEET. All answers are to be recorded on the separate answer sheet. Please make no marks in the questionnaire booklet since it may be used again by other students. Record your answer by blackening the small box marked T or F, as in this sample:

Sample Item:
   (A) Students are generally quite friendly on this campus.
   (A) True [ ] False [ ]

3. IDENTIFYING INFORMATION. Each of the following underlined items is to be entered on the answer sheet:

   Name. In the top right-hand corner of the answer sheet is the heading, "Print last name....." Starting at the arrow on the left, print as many letters of your last name as will fit in the 13 spaces provided. Print one letter in each space. Do not write beyond the heavy line that separates the last name and first name sections, even if you are unable to complete your last name. If your last name has fewer than 13 letters, use as many spaces as you need, leaving the rest blank. Then start at the right of the heavy blue line and follow the same procedure for your first name.

   Beneath each letter of your name, blacken the corresponding small-lettered box.

   Major Field of Study. In the area to the left of the name section, indicate your major field of study. If undecided, indicate major area of interest. Blacken only one box.

   In the bottom right-hand corner of the answer sheet is a section requiring further information:

   Year of birth. Write the last two digits of the year of your birth in the spaces provided, and beneath each number, blacken the corresponding box.

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Compiled in part from College Characteristics Index—Form 1188
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S e x. Blacken the appropriate box.

Educational Status. Blacken the box that corresponds to your present educational status. Note: "Entering Freshman" is defined as being in the first quarter or first semester.

Student Number. Write your student number in the spaces provided. If your number is less than nine digits long, write the number so that it ends in the last box on the right. Fill any spaces preceding it on the left with zeros, for example: 007654321. Blacken the corresponding small-numbered boxes, and include any zeros you may have used.

Institution and Date. Turn the answer sheet to a vertical position and fill in the name of your institution and today's date.

4. SPECIAL INSTRUCTIONS. Special instructions may be given for the completion of the sections labeled Subgroups and Local Option Questions.

5. MARKING THE ANSWER SHEET. Find Question 1 on the next page of this booklet. On the answer sheet blacken the appropriate box, that is, T, if the statement is generally characteristic of your college, or F, if the statement is not generally characteristic. Proceed to answer all 160 items.

(Questions begin on next page)

NOTE TO THE STUDENT

Your answer sheet and those of the other students will be tabulated at your college or university.

Since all scoring will be done locally, some of the directions about marking the information sections of your answer sheet may be different from those given in the booklet. Follow the instructions given by your local supervisor for filling out your answer sheet.

PLEASE NOTE:

A FEW OF THE QUESTIONS (indicated by an *) WHICH APPEAR ON THE FOLLOWING PAGES HAVE BEEN REWORDED TO MAKE THEM MORE "CURRENT AND UP TO DATE."

USE THE FOLLOWING WHEN RESPONDING TO QUESTIONS #60, #96, and #143:

60. Student Rooms are more likely to be decorated with posters than with paintings, carvings, mobiles, fabrics, etc.

96. Cut offs and centerfold pictures are common on this campus.

143. Faculty men always wear coats and ties and faculty women always wear dresses on campus.
1. Students almost always wait to be called on before speaking in class.
2. The big college events draw a lot of student enthusiasm and support.
3. There is a recognized group of student leaders on this campus.
4. Frequent tests are given in most courses.
5. Students take a great deal of pride in their personal appearance.
6. Education here tends to make students more practical and realistic.
7. The professors regularly check up on the students to make sure that assignments are being carried out properly and on time.
8. It's important socially here to be in the right club or group.
9. Student pep rallies, parades, dances, carnivals, or demonstrations occur very rarely.
10. Anyone who knows the right people in the faculty or administration can get a better break here.
11. The professors really push the students' capacities to the limit.
12. Most of the professors are dedicated scholars in their fields.
13. Most courses require intensive study and preparation out of class.
15. Class discussions are typically vigorous and intense.
16. A lecture by an outstanding scientist would be poorly attended.
17. Careful reasoning and clear logic are valued most highly in grading student papers, reports, or discussions.
18. It is fairly easy to pass most courses without working very hard.
19. The school is outstanding for the emphasis and support it gives to pure scholarship and basic research.
20. Standards set by the professors are not particularly hard to achieve.
21. It is easy to take clear notes in most courses.
22. The school helps everyone get acquainted.
23. Students often run errands or do other personal services for the faculty.
24. The history and traditions of the college are strongly emphasized.
25. The professors go out of their way to help you.
26. There is a great deal of borrowing and sharing among the students.
27. When students run a project or put on a show everybody knows about it.
28. Many upperclassmen play an active role in helping new students adjust to campus life.
29. Students exert considerable pressure on one another to live up to the expected codes of conduct.
30. Graduation is a pretty matter-of-fact, unemotional event.
31. Channels for expressing students' complaints are readily accessible.
32. Students are encouraged to take an active part in social reforms or political programs.
33. Students are actively concerned about national and international affairs.
34. There are a good many colorful and controversial figures on the faculty.
35. There is considerable interest in the analysis of value systems, and the relativity of societies and ethics.
36. Public debates are held frequently.
37. A controversial speaker always stirs up a lot of student discussion.
38. There are many facilities and opportunities for individual creative activity.
39. There is a lot of interest here in poetry, music, painting, sculpture, architecture, etc.
40. Concerts and art exhibits always draw big crowds of students.
41. Students ask permission before deviating from common policies or practices.
42. Most student rooms are pretty messy.
43. People here are always trying to win an argument.
44. Drinking and late parties are generally tolerated, despite regulations.
45. Students occasionally plot some sort of escapade or rebellion.
46. Many students drive sports cars.

47. Students frequently do things on the spur of the moment.

48. Student publications never lampoon dignified people or institutions.

49. The person who is always trying to "help out" is likely to be regarded as a nuisance.

50. Students are conscientious about taking good care of school property.

51. The important people at this school expect others to show proper respect for them.

52. Student elections generate a lot of intense campaigning and strong feeling.

53. Everyone has a lot of fun at this school.

54. In many classes students have an assigned seat.

55. Student organizations are closely supervised to guard against mistakes.

56. Many students try to pattern themselves after people they admire.

57. New fads and phrases are continually springing up among the students.

58. Students must have a written excuse for absence from class.

59. The college offers many really practical courses such as typing, report writing, etc.

60. Student rooms are more likely to be decorated with pennants and pin-ups than with paintings, carvings, mobiles, fabrics, etc.

61. Most of the professors are very thorough teachers and really probe into the fundamentals of their subjects.

62. Most courses are a real intellectual challenge.

63. Students put a lot of energy into everything they do in class and out.

64. Course offerings and faculty in the natural sciences are outstanding.

65. Courses, examinations, and readings are frequently revised.

66. Personality, pull, and bluff get students through many courses.

67. There is very little studying here over the weekends.

68. There is a lot of interest in the philosophy and methods of science.

69. People around here seem to thrive on difficulty—the tougher things get, the harder they work.

70. Students are very serious and purposeful about their work.

71. This school has a reputation for being very friendly.

72. All undergraduates must live in university approved housing.

73. Instructors clearly explain the goals and purposes of their courses.

74. Students have many opportunities to develop skill in organizing and directing the work of others.

75. Most of the faculty are not interested in students' personal problems.

76. Students quickly learn what is done and not done on this campus.

77. It's easy to get a group together for card games, singing, going to the movies, etc.

78. Students commonly share their problems.

79. Faculty members rarely or never call students by their first names.

80. There is a lot of group spirit.

81. Students are encouraged to criticize administrative policies and teaching practices.

82. The expression of strong personal belief or conviction is pretty rare around here.

83. Many students here develop a strong sense of responsibility about their role in contemporary social and political life.

84. There are a number of prominent faculty members who play a significant role in national or local politics.

85. There would be a capacity audience for a lecture by an outstanding philosopher or theologian.

86. Course offerings and faculty in the social sciences are outstanding.

87. Many famous people are brought to the campus for lectures, concerts, student discussions, etc.

88. The school offers many opportunities for students to understand and criticize important works of art, music, and drama.

89. Special museums or collections are important possessions of the college.

90. Modern art and music get little attention here.
91. Students are expected to report any violation of rules and regulations.
92. Student parties are colorful and lively.
93. There always seem to be a lot of little quarrels going on.
94. Students rarely get drunk and disorderly.
95. Most students show a good deal of caution and self-control in their behavior.
96. Bermuda shorts, pin-up pictures, etc., are common on this campus.
97. Students pay little attention to rules and regulations.
98. Dormitory raids, water fights, and other student pranks would be unthinkable.
99. Many students seem to expect other people to adapt to them rather than trying to adapt themselves to others.
100. Rough games and contact sports are an important part of intramural athletics.
101. The vocational value of many courses is emphasized.
102. Most people are aware of the financial status of students' families.
103. Student organizations are required to have a faculty adviser.
104. There are good facilities for learning vocationally useful skills and techniques.
105. Most faculty members really know the regulations and requirements that apply to student programs.
106. There is a well-organized and effective job placement office for the graduating students.
107. Many faculty members are involved in services or consulting activities for outside groups—business, adult education, etc.
108. Professors will sometimes increase a student's grade if they think he has worked especially hard and conscientiously.
109. Most students want to get a degree because of its economic value.
110. Vocational guidance is a main activity of the counseling office.
111. New ideas and theories are encouraged and vigorously debated.
112. Students who don't make passing grades are quickly dropped from school.
113. Students are allowed to help themselves to books in the library stacks.
114. Excellence in scholarship is the dominant feature of this institution.
115. There are lots of quiet and comfortable places for students to study.
116. Even in social groups students are more likely to talk about their studies than about other things.
117. There are many excellent facilities for research on this campus.
118. The main emphasis in most departmental clubs is to promote interest and scholarship in the field.
119. Most students are pretty dissatisfied if they make less than a B grade.
120. The library is one of the outstanding facilities on the campus.
121. The campus design, architecture, and landscaping suggest a friendly atmosphere.
122. Student groups often meet in faculty members' homes.
123. Counseling and guidance services are really personal, patient, and helpful.
124. There are courses which involve students in activities with groups or agencies in the local community.
125. Most of the students here are pretty happy.
126. There are courses or voluntary seminars that deal with problems of marriage and the family.
127. In most classes the atmosphere is very friendly.
128. Groups of students from the college often get together for parties or visits during holidays.
129. Most students seem to have a genuine affection for this school.
130. There are courses or voluntary seminars that deal with problems of social adjustment.
131. There is a regular place on the campus where students can make speeches about controversial issues.
132. Students are free to cut classes at their own discretion.
133. Many faculty members have worked overseas or frequently traveled to other countries.
134. There is a lot of variety and innovation in the way many courses are taught.
135. Many professors permit, and sometimes welcome, class discussion of materials that are outside their field of specialization.

136. Many students are interested in joining the Peace Corps or are planning, somehow, to spend time in another part of the world.

137. Many student groups invite faculty members to lead special discussions.

138. Groups of students sometimes spend all evening listening to classical records.

139. Student chorus, orchestras, and theater groups are really excellent.

140. Students like to browse in book stores.

141. Many professors require students to submit an outline before writing a term paper or report.

142. The Dean of Students office is mainly concerned with disciplinary matters.

143. Faculty members always wear coats and ties on the campus.

144. A major aim of this institution is to produce cultivated men and women.

145. In literature, drama, and music the main emphasis is on the classics.

146. Nearby churches have an active interest in counseling and youth programs.

147. Proper standards and ideals are emphasized in many courses.

148. Most professors think of themselves as no different from other adults in the community.

149. Faculty members are always polite and proper in their relations with students.

150. In most exams the emphasis is on knowing the correct answers rather than on being able to defend a point of view.

151. There are students on many academic and administrative committees.

152. Students have real authority to determine some campus policies and procedures.

153. Some faculty members are active in experimenting with new methods of teaching, new courses, and other innovations.

154. There is much student interest and activity about social issues - such as civil rights, justice, peace.

155. The administration is receptive and active in responding to student proposals for change.

156. There is an "experimental" college or program where a variety of new courses are offered (whether for credit or not).

157. Massive disruption, force, or violence by students would be unthinkable on this campus.

158. The attitude of most college officials about drugs is generally patient, flexible, and tolerant.

159. The response of most college officials toward student sit-ins or other "confrontations" is (or would be) firm, forceful, and unsympathetic.

160. Due process considerations are expected by students who are accused of violating laws or college rules.
Appendix F

INITIAL LETTERS TO STUDENTS
TO Selected Seniors and Freshmen:

I wish to offer my personal support to the invitation requesting your participation in this research project for two major reasons:

- the results of the research can ultimately help Kenyon make worthwhile evaluations and assessments.

- Don Omahan, a 1970 Kenyon graduate and Kenyon's Director of Housing from 1972 to '75, and his colleague John Heirke, need our help. The research is necessary for them to obtain data for a doctoral dissertation at OSU.

Two faculty committees, the Student Affairs and the Faculty Affairs, have endorsed Kenyon's participation in the research. The Student Affairs Center staff, when asked by Don and John if we thought Kenyon students would be willing to participate, expressed equal optimism.

We do hope that you will be able to give several hours of your busy time to complete the battery of questionnaires. Please read the enclosed materials and contact me if you have any questions.

Thank you for the consideration, and time, you are able to give.

Sincerely yours,

Thomas J. Edwards
Dean of Students

Office of the Dean of Students

KENYON COLLEGE
GAMBIER, OHIO

284
The purpose of this letter is to invite you to participate in an important research study concerning the impact of the college experience on students enrolled at Kenyon College and Ohio State University. The project is designed to address several questions of importance to higher education and to specific colleges and universities, such as Kenyon and Ohio State. These questions can be summarized as follows:

1) How do freshmen and seniors perceive their college environments? Do freshmen have perceptions which are different from those of seniors? Do students at different types of institutions perceive their college environments differently?

2) Are freshmen and seniors similar or different in terms of selected dimensions of growth and development? That is, do students change during the four years of their college experience? Do students at different types of institutions differ in terms of these dimensions?

3) How do students change during their four years in college, and what factors in the particular college environment can be associated with such change?

In attempting to describe our study to you in more detail, we have tried to anticipate some questions which you might have concerning the project and your involvement with it:

WHY ME? WHY WAS I CHOSEN TO PARTICIPATE? WHAT OTHER STUDENTS ARE INVOLVED?

Using student directories, a random selection process was used to obtain a list of freshmen and senior students to participate in this study. At Kenyon, 40 freshmen men, 40 freshmen women, 40 senior men, and 40 senior women (160 students in all) are being invited to participate. At Ohio State, 49 freshmen men, 73 freshmen women, 40 senior men, and 60 senior women in the Arts and Sciences Curriculum (222 students in all) are being invited to participate.
WHO IS CONDUCTING THE STUDY?

There are three persons directly associated with this study. The project director is Dr. Robert F. Rodgers, a faculty member in Student Personnel and Psychology at Ohio State. He is also the Director of the Student Personnel Assistant Program. John Heidke and Donald Omahan are the two persons responsible for conducting the study. Both have a variety of experience in higher education research, administration, and teaching, and are currently doctoral candidates in Student Personnel at Ohio State.

HOW IS THE PROJECT AUTHORIZED?

All projects initiated at Ohio State which involve student participation must have the prior approval of a review body which is independent of the project. The purpose of such a review is to protect the student's rights and welfare. The Behavioral Social Sciences Review Committee at Ohio State has given its approval to this project. In addition, this study has the support of the College of Arts and Sciences at Ohio State.

At Kenyon, our research effort has received the support and endorsement of the Student Affairs Staff, the Faculty Committee on Student Affairs, and the Faculty Committee on Faculty Affairs.

WHAT WILL I HAVE TO DO IF I AGREE TO PARTICIPATE?

You will be asked to complete a series of 5 survey questionnaires. The questionnaires require a total of approximately 2-2½ hours to complete, and will be administered to you at your convenience anytime between 9:00 a.m. and 5:00 p.m. on Saturday, February 23, 1980. All that will be required of you is to come to Lower Dempsey Hall at any time between 9:00 a.m. and 5:00 p.m. on Saturday the 23rd. You will be able to complete the questionnaires at your leisure, although we suggest that 2½ hours be set aside to allow ample time. You will not be under any time constraints or pressures; you will be able to work at your own pace.

If you cannot make the Saturday session, we will be available again on Sunday, February 24, 1980, in Lower Dempsey Hall between Noon and 5:00 p.m. to assist you with the questionnaire completion.
WHAT STRESS OR RISK IS INVOLVED? WHAT ABOUT CONFIDENTIALITY?

There is no stress or risk involved. We are simply asking for your time in completing five interesting survey questionnaires. No physical or psychological treatment is involved. The instruments are not threatening or stress producing.

All data collected will remain confidential, and will not become part of your college record or any other information system. We are interested in group data, not individual scores. Consequently, your name will not appear in conjunction with the information collected from you.

IF I AM ONE OF 160 KENYON STUDENTS AND 222 OHIO STATE STUDENTS BEING ASKED TO PARTICIPATE, WHY IS IT SO IMPORTANT FOR ME TO BE INVOLVED IN THIS PROJECT?

Simply stated, given the nature of this study, a minimum of 160 participants at Kenyon and 222 participants at Ohio State are necessary to obtain meaningful results in an effective and efficient manner. Hence, for the results of this study to be scientifically sound and to make sense, we need your cooperation and participation in this project.

WHAT IS TO BE GAINED FROM THIS STUDY?

We are asking your assistance with this project in the form of a time investment — time to read this correspondence and to fill out the questionnaires on the scheduled day. Your participation in this study will enable Kenyon and Ohio State to learn about themselves, and the impact which they, as institutions of higher education, have on their students. Such information can be invaluable to students, faculty, and administrators as they seek to improve the college experience for current and future generations of students.

In more general terms, the knowledge and study of the impact which colleges and universities have on their students have increased significantly during the past ten years. It is only recently, however, that knowledge about how students grow and change during their four year higher education experience has been included in the planning and design of programs and services, both inside and outside of the classroom. Those of us involved in higher education have an obligation to know as much as possible about the impact of the college environment and the changes that students experience while in college. Hopefully, the results of this study will contribute to that process which links the expanding knowledge of human development to the educational experience of the student.
HOW DO I INDICATE MY WILLINGNESS TO PARTICIPATE?

If you are willing to participate in this significant study -- and we sincerely hope that you are interested -- complete the attached card and return it to us. For your convenience, the card is already addressed and stamped. Please note that in order to finalize our planning, we must receive your completed card by Monday, February 11, 1980. You will receive a confirmation letter and more specific details about the questionnaire administration about one week prior to the administration dates.

If you have any questions or comments concerning this project, please contact us in writing or by phone at the location listed below. In addition, we will be available on Wednesday evening, February 6, 1980, from 6:30 to 8:00 p.m. in the Alumni House Lounge for an informal information session concerning this study. You are most welcome to attend with your questions and comments, or to just listen!

Thank you for your time and attention; we hope that you will join us in this exciting research endeavor. Your help and participation will be greatly appreciated.

Respectfully,

John D. Heidke
Donald J. Omahan

Please address all questions and correspondence to us at the following location:

South Area Office
Ohio State University
187 West 12th Avenue
Columbus, Ohio 43210
(614) 422-7965
The purpose of this letter is to invite you to participate in an important research study concerning the impact of the college experience on students enrolled at Kenyon College and Ohio State University. The project is designed to address several questions of importance to higher education and to specific colleges and universities, such as Kenyon and Ohio State. These questions can be summarized as follows:

1) How do freshmen and seniors perceive their college environments? Do freshmen have perceptions which are different from those of seniors? Do students at different types of institutions perceive their college environments differently?

2) Are freshmen and seniors similar or different in terms of selected dimensions of growth and development? That is, do students change during the four years of their college experience? Do students at different types of institutions differ in terms of these dimensions of growth and development?

3) How do students change during their four years in college, and what factors in the particular college environment can be associated with such change?

In attempting to describe our study to you in more detail, we have tried to anticipate some questions which you might have concerning the project and your involvement with it:

WHY ME? WHY WAS I CHOSEN TO PARTICIPATE? WHAT OTHER STUDENTS ARE INVOLVED?

Using student directories, a random selection process was used to obtain a list of freshmen and senior students to participate in this study. At Kenyon, 40 freshmen men, 40 freshmen women, 40 senior men, and 40 senior women (160 students in all) are being invited to participate. At Ohio State, 113 freshmen men, 151 freshmen women, 83 senior men, and 72 senior women in the Arts and Sciences Curriculum (419 students in all) are being invited to participate.
WHO IS CONDUCTING THE STUDY?

There are three persons directly associated with this study. The project director is Dr. Robert F. Rodgers, a faculty member in Student Personnel and Psychology at Ohio State. He is also the Director of the Student Personnel Assistant Program. John Heidke and Donald Omahan are the two persons responsible for conducting the study. Both have a variety of experience in higher education research, administration, and teaching, and are currently doctoral candidates in Student Personnel at Ohio State.

HOW IS THE PROJECT AUTHORIZED?

All projects initiated at Ohio State which involve student participation must have the prior approval of a review body which is independent of the project. The purpose of such a review is to protect the student's rights and welfare. The Behavioral Social Sciences Review Committee at Ohio State has reviewed this project and found it to comply with the Committee's policies and guidelines.

At Ohio State, this study has the support and endorsement of the College of Arts and Sciences.

At Kenyon, our research effort has received the support and endorsement of the Student Affairs Staff, the Faculty Committee on Student Affairs, and the Faculty Committee on Faculty Affairs.

WHAT WILL I HAVE TO DO IF I AGREE TO PARTICIPATE?

You will be asked to complete a series of 5 survey questionnaires. The questionnaires require a total of approximately 2 hours to complete. There are two procedures which you can follow to complete the survey questionnaires:

PROCEDURE A - The questionnaires will be administered to you at your convenience at one of the survey sites listed here:

<table>
<thead>
<tr>
<th>SURVEY SITE</th>
<th>DAY</th>
<th>TIMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morrill Tower Browsing Room</td>
<td>Thursday</td>
<td>3 p.m. to 8 p.m.</td>
</tr>
<tr>
<td>(3rd floor, off Main Lobby),</td>
<td>May 15, 1980</td>
<td></td>
</tr>
<tr>
<td>1900 Cannon Drive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio Union</td>
<td>Saturday</td>
<td>10 a.m. to 5 p.m.</td>
</tr>
<tr>
<td>Buckeye Suites A,B,C</td>
<td>May 17, 1980</td>
<td></td>
</tr>
<tr>
<td>1739 N. High Street</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Royer Student Center</td>
<td>Sunday</td>
<td>Noon to 5 p.m.</td>
</tr>
<tr>
<td>85 Curl Drive</td>
<td>May 18, 1980</td>
<td></td>
</tr>
</tbody>
</table>
All that is required of you is to come to one of these locations (the choice is yours!) at any time during the hours listed. You will be able to complete the questionnaires at your leisure, although we suggest you set aside 2 hours to allow yourself ample time. You will not be under any time constraints or pressures; you will be able to work at your own chosen pace.

PROCEDURE B - We will mail you the packet of 5 survey questionnaires. You can complete the questionnaires at your leisure; we only request that you return the completed questionnaires (in the envelope we provide) as soon as possible and no later than one week from the day they are received.

WHAT STRESS OR RISK IS INVOLVED? WHAT ABOUT CONFIDENTIALITY?

There is no stress or risk involved. We are simply asking for your time in completing five interesting survey questionnaires. No physical or psychological treatment is involved. The instruments are not threatening or stress producing.

All data collected will remain confidential, and will not become a part of your college record or any other information system. We are interested in group data, not individual scores. Consequently, your name will not appear in conjunction with the information collected from you.

IF I AM ONE OF 160 KENYON STUDENTS AND 419 OHIO STATE STUDENTS BEING ASKED TO PARTICIPATE, WHY IS IT SO IMPORTANT FOR ME TO BE INVOLVED IN THIS PROJECT?

Simply stated, given the nature of this study, a minimum of 160 participants at Kenyon and 419 participants at Ohio State are necessary to obtain meaningful results in an effective and efficient manner. Hence, for the results of this study to be scientifically sound and to make sense, we need your cooperation and participation in this project.

WHAT IS TO BE GAINED FROM THIS STUDY?

We are asking your assistance with this project in the form of a time investment -- time to read this correspondence and to fill out the questionnaires on the scheduled day. Your participation in this study will enable Kenyon and Ohio State to learn about themselves, and the impact which they, as institutions of higher education, have on their students. Such information can be invaluable to students, faculty, and administrators as they seek to improve the college experience for current and future generations of students.
In more general terms, the knowledge and study of the impact which colleges and universities have on their students have increased significantly during the past ten years. It is only recently, however, that knowledge about how students grow and change during their four year higher education experience has been included in the planning and design of programs and services, both inside and outside of the classroom. Those of us involved in higher education have an obligation to know as much as possible about the impact of the college environment and the changes that students experience while in college. Hopefully, the results of this study will contribute to that process which links the expanding knowledge of human development to the educational experience of the student.

HOW DO I INDICATE MY WILLINGNESS TO PARTICIPATE?

If you are willing to participate in this significant study — and we sincerely hope that you are interested — complete the attached card and return it to us. For your convenience, the card is already addressed and stamped. Be certain to indicate whether you will be responding to the survey questionnaires at one of the three survey sites on May 15, May 17, or May 18, or whether you wish to have the packet of questionnaires sent directly to you. Please note that in order to finalize our planning, we must receive your completed card by Monday, April 28, 1980.

Thank you for your time and attention; we hope that you will join us in this exciting research endeavor. Your help and participation will be greatly appreciated.

Respectfully,

John D. Heidke

Donald J. Omahan

If you have any questions or comments concerning this project, please contact us at the following location:

South Area Office
Ohio State University
147 West 12th Avenue
Columbus, Ohio 43210
(614) 422-7965
Appendix G

RETURN POSTCARDS
PLEASE FILL OUT THE INFORMATION REQUESTED ON THIS CARD AND DROP IT IN THE MAIL BY MONDAY, FEB. 11, 1980 (no postage required). THANK YOU!

___ YES, I would like to participate in the research study concerning the impact of college on students.

   Where: Lower Dempsey Hall
   When: At my convenience between 9 a.m. and 5 p.m. on Sat., Feb. 23, 1980, OR between Noon and 5 p.m. on Sun., Feb. 24, 1980.

___ NO, I would prefer not to participate.

___ I am interested, but would like more information before I commit myself.

Comments/Questions: ____________________________________________

_______________________________________________________________

Signed: ___________________________ Date: ___ / ___ / ___

Print Name: _______________________

Phone: ___________________ Year (Circle One): FR SOPH JR SR
PLEASE FILL OUT THE INFORMATION REQUESTED ON THIS CARD AND DROP IT IN THE MAIL BY MONDAY, APRIL 28, 1980 (no postage required). THANK YOU!

YES, I would like to participate in the research study concerning the impact of college on students. I would like to participate according to the following procedure:

PROCEDURE A - I will come to one of the three survey sites at my convenience on May 15, 17, or 18, 1980 to complete the survey questionnaires (See page 2 of the accompanying letter for a list of survey site locations and hours).

PROCEDURE B - I would like to have the survey packet sent to me. I will return the completed questionnaires as soon as possible and no later than one week from the day they are received.

NO, I would prefer not to participate.

Signed: _______________________________ Date: __/__/

Print Name: __________________________________________

Phone: ___________________________ Year (Circle One): FR SOPH JR SR
Appendix H

FOLLOW-UP LETTERS TO PARTICIPANTS
Thank you for your willingness to participate in the research study concerning the impact of college on students. During the planning stages of this research effort, we have become very excited about the importance which studies of this nature can have for higher education, in general, and for particular institutions, such as Kenyon and Ohio State. We are delighted that you have chosen to join us in this endeavor.

Allow us to repeat a few of the details concerning your participation in this study. A series of 5 survey questionnaires, requiring a total of approximately 2-2½ hours to complete, will be administered to you at your convenience on Saturday, February 23, 1980. All that is required of you is to come to Lower Dempsey Hall at any time between 9:00 a.m. and 5:00 p.m. on Saturday the 23rd. You will be able to complete the questionnaires at your leisure, although we suggest that you set aside 2½ hours to allow yourself ample time. You will not be under any time constraints or pressures; you will be able to work at your own chosen pace.

If you can not make the Saturday session, we will be available again on Sunday, February 24, 1980, in Lower Dempsey Hall between Noon and 5:00 p.m. to assist you with the questionnaire completion.

If you have any additional questions or comments concerning this study which have not been discussed in our correspondence, please feel free to contact us at the following location:

South Area Office
Ohio State University
147 West 12th Avenue
Columbus, Ohio 43210
(614) 422-7965
Thanks once again for your interest in this project, and for your willingness to take part. We look forward to meeting your personally.

Respectfully,

John D. Heidke

Donald J. Omahan
Thank you for your willingness to participate in the research study concerning the impact of college on students. During the planning stages of this research effort, we have become very excited about the importance which studies of this nature can have for higher education, in general, and for particular institutions, such as Kenyon and Ohio State. We are delighted that you have chosen to join us in this endeavor.

Allow us to repeat a few of the details concerning your participation in this study. A series of 5 survey questionnaires, requiring a total of approximately 2 hours to complete, will be administered to you at your convenience at one of the survey sites listed here:

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All that is required of you is to come to one of these locations (the choice is yours!) at any time during the hours listed. You will be able to complete the questionnaires at your leisure, although we suggest that you set aside 2 hours to allow yourself ample time. You will not be under any time constraints or pressures; you will be able to work at your own chosen pace.
If you have any additional questions or comments concerning this study which have not been discussed in our correspondence, please feel free to contact us at the following location:

South Area Office
Ohio State University
147 West 12th Avenue
Columbus, Ohio 43210
(614) 422-7965

Thanks once again for your interest in this project, and for your willingness to take part. We look forward to meeting you personally.

Respectfully,

John D. Heidke
Donald J. Omahan
Appendix I

GENERAL INSTRUCTIONS AND CONSENT FORM
THANK YOU ONCE AGAIN FOR YOUR INTEREST IN THIS IMPORTANT RESEARCH PROJECT, AND FOR YOUR WILLINGNESS TO PARTICIPATE!

Before beginning, please read the attached GENERAL INSTRUCTIONS, and complete the short series of biographical data questions which appear below. These biographical data questions and the "Identifying Information" included in the first survey questionnaire (the CUES II) are for our use in analyzing the data which you and your fellow students provide on the survey questionnaires.

We remind you that all data collected WILL REMAIN CONFIDENTIAL, and will not become a part of your college record or any other information system. We are interested in group data, not individual scores. Consequently, your name will not appear in conjunction with the information collected from you.

You will also find attached a "Consent For Participation In Social And Behavioral Research" Form which (1) indicates your rights relative to this research project and (2) indicates your willingness to freely participate. The form has been signed by the project investigators and also requires your signature. A "Consent Form" of this nature is required in conjunction with all research involving students which is conducted by persons associated with Ohio State University.

BIOGRAPHICAL DATA

(PLEASE PRINT)

NAME: ________________________________

YEAR GRADUATED FROM HIGH SCHOOL: 19 ______

WHEN DID YOU FIRST BEGIN CLASSES AT KENYON/OHIO STATE?

MONTH: __________________________ YEAR: 19 ______

DID YOU TRANSFER INTO KENYON/OHIO STATE FROM ANOTHER COLLEGE OR UNIVERSITY? ______ Yes ______ No

IF YOU ARE A SENIOR, HAVE YOU ATTENDED KENYON/OHIO STATE FOR FOUR CONSECUTIVE YEARS (including possible study semester(s) or quarter(s) abroad)? ______ Yes ______ No
GENERAL INSTRUCTIONS

1. Read the instructions for each questionnaire carefully before you respond to the questionnaire.

2. Respond to the "IDENTIFYING INFORMATION" requested in conjunction with the first questionnaire (the CUES II). It will not be necessary for you to repeat such identifying information on the remaining answer sheets. In addition, ignore items which request your "Student Number."

3. BE CERTAIN TO USE THE PROPER ANSWER SHEET.

   Only one questionnaire (The Perry Instrument) requires you to place your response directly on the questionnaire. Use a pen in responding to this questionnaire and this questionnaire only.

   Four of the questionnaires require you to record your response on a separate answer sheet, using pencil. To eliminate confusion, each of these four questionnaires and its corresponding answer sheet are color-coded. BE CERTAIN THAT THE COLOR OF THE QUESTIONNAIRE YOU ARE RESPONDING TO MATCHES THE COLORED LINE (made with a colored marking pen) ON YOUR ANSWER SHEET.

4. BE CERTAIN TO USE THE PROPER "RESPONSE SET" IN RESPONDING TO THE MULTIPLE CHOICE QUESTIONNAIRES.

   Read the instructions for each of the multiple choice questionnaires carefully. (One questionnaire requires a True or False response to each question; one questionnaire has a "response set" consisting of four possible responses to each question; two questionnaires have "response sets" consisting of five possible responses to each question.)

5. Complete the questionnaires at your leisure. You will not be under any time constraints or pressures; you will be able to work at your own pace.

IF YOU HAVE ANY QUESTIONS, PLEASE DO NOT HESITATE TO BRING THEM TO OUR ATTENTION.
THE OHIO STATE UNIVERSITY

CONSENT FOR PARTICIPATION IN
SOCIAL AND BEHAVIORAL RESEARCH

I consent to participating in a study entitled A CROSS SECTIONAL STUDY OF COGNITIVE INTELLECTUAL AND PSYCHOSOCIAL DEVELOPMENT OF STUDENTS AT KENYON COLLEGE AND THE OHIO STATE UNIVERSITY. Donald J. Omahan or John D. Heidke has explained the purpose of the study and procedures to be followed. Possible benefits of the study have been described as have alternative procedures, if such procedures are applicable and available.

I acknowledge that I have had the opportunity to obtain additional information regarding the study and that any questions I have raised have been answered to my full satisfaction. Further, I understand that I am free to withdraw consent at any time and to discontinue participation in the study without prejudice to me. The information obtained from me will remain confidential and anonymous unless I specifically agree otherwise.

Finally, I acknowledge that I have read and fully understand the consent form. I have signed it freely and voluntarily and understand a copy is available upon request.

Date: ______________________ Signed: ______________________ (Participant)

(Investigator/Project Director or Authorized Representative)

PA-027 (2/79) -- To be used only in connection with social and behavioral research for which an OSU Human Subject Review Committee has determined that the research poses no risk to participants.
Appendix J

LETTERS TO MAIL PARTICIPANTS
FROM: Don Omahan
TO: Kanyon Students Requesting Survey Packets
RE: SPECIAL PROCEDURES

We are sorry that you were unable to participate in our surveying sessions this weekend. Though we are very pleased that you have agreed to participate in this alternate manner.

Enclosed you will find a complete set of materials exactly the same as those distributed on Saturday and Sunday. Please read over the directions carefully. Note that on some you are asked to mark only on the answer sheets (not in the booklets). Also notice that pencil should be used with all EXCEPT the Perry Instrument. In the case of the Perry Instrument please use a pen and write directly in the booklet.

Kindly complete the surveys at your convenience and return them in the enclosed envelope to the Kanyon Student Affairs Center not later than Tuesday, March 4, 1980.

Your interest, commitment, and involvement are most appreciated. If any questions arise, please do not hesitate to contact us at the address and phone noted above.

Thanks
FROM: John Heidke, Don Omahan

TO: Kenyon Students Unable to Participate in the Kenyon/Ohio State Survey

RE: SPECIAL REQUEST

February 25, 1980

We are sorry that you were unable to participate in our survey sessions this past weekend. From the information we received directly from you or from the Student Affairs Center, it is our understanding that you might be willing to complete the five survey questionnaires at a time more convenient to you.

Your involvement is very important to Kenyon and to the success of this project! Please take some time to fill out the enclosed materials. They are exactly the same as those distributed to other participants at Kenyon. Kindly read over the directions carefully. Note that answer sheets and pencils are to be used. An exception is the "Perry Instrument". In its case please use a pen and write directly in the booklet.

Please complete the surveys at your convenience and return them in the enclosed envelope to the Kenyon Student Affairs Center not later than Tuesday, March 4, 1980.

Your interest, time commitment, and involvement will be most appreciated. If any questions arise, please do not hesitate to contact us at the address or phone noted above.

Thanks!!
Thank you for your willingness to participate in the research study concerning the impact of college on students. During the planning stages of this research effort, we have become very excited about the importance which studies of this nature can have for higher education, in general, and for particular institutions, such as Kenyon and Ohio State. We are delighted that you have chosen to join us in this endeavor.

Enclosed you will find the complete set of survey materials, including a cover letter and General Instructions. Please take a few minutes to read the instructions carefully before you begin to respond to the survey questionnaires.

Kindly complete the questionnaires at your convenience and return them in the enclosed envelope no later than one week from today's date. Return the completed surveys by U.S. Mail (postage required), Campus Mail (no postage required), or by dropping them off at one of the following locations on campus (no postage required):

South Residence Halls, Area Office
147 W. 12th Avenue

North Residence Halls, Area Office
Royer Student Center
85 Curl Drive

Olentangy Residence Halls, Area Office
357 Morrill Tower
1900 Cannon Drive

Student Personnel Assistant Program Office
146 Arps Hall
1945 N. High Street
If you have any additional questions or comments concerning this study which have not been discussed in our correspondence, please feel free to contact us at the following location:

South Area Office
Ohio State University
147 West 12th Avenue
Columbus, Ohio 43210
(614) 422-7965

Thanks once again for your interest in this project, and for your willingness to take part.

Respectfully,

John D. Heidke

Donald J. Omahan
Appendix K

LETTERS TO NON-PARTICIPANTS
February 25, 1980

FROM: John Heidke  Don Omahan

TO: Kenyon Students Not Attending Survey Sessions

RE: SPECIAL REQUEST

We missed you! Did you have a conflict in scheduling?

Over the past several weeks, we or the Student Affairs Staff have been in contact with you by mail and/or phone. Through that contact we were left with the impression that you would participate in the survey of selected Kenyon students on February 23rd or 24th.

Your involvement is very important to Kenyon and to the success of this project! Please take some time to fill out the enclosed materials. They are exactly the same as those distributed to other participants at Kenyon. Kindly read over the directions carefully. Note that answer sheets and pencils are to be used. An exception is the "Perry Instrument". In its case please use a pen and write directly in the booklet.

Please complete the surveys at your convenience and return them in the enclosed envelope to the Kenyon Student Affairs Center not later than Tuesday, March 4, 1980.

Your interest, time commitment, and involvement will be most appreciated. If any questions arise, please do not hesitate to contact us at the address or phone noted above.

Thanks!!
March 26, 1980

As you are aware from our past correspondence, a number of Kenyon students have completed the Kenyon-Ohio State Survey. Unfortunately, there remain about thirty-five Kenyon students, including yourself, who indicated that they would respond to the questionnaires who have not done so. It is important for the successful analysis and study of the data for us to receive all of these completed questionnaires as soon as possible.

If you have completed the questionnaires, please return them to the Student Affairs Center. If you have not completed the questionnaires, please do so promptly and return them to the Student Affairs Center.

As you can appreciate, we have devoted considerable time, effort, and expense in attempting to insure the success of this project. We can not emphasize strongly enough that we need your participation if this study is to yield results that will be of benefit to Kenyon, to Ohio State, and to higher education in general. If for some reason you can no longer participate, please do us the courtesy of returning the blank questionnaire packet to the Student Affairs Center.

Thank you once again for your expressed willingness to participate. We look forward to hearing from you in the near future!

Sincerely,

John D. Heidke

Donald J. Omahan
We missed you!

Over the past several weeks, we have been in contact with you by mail and/or phone concerning your participation in the survey of selected Ohio State University and Kenyon College students. As a result of our contact with you, we were anticipating your participation in one of the survey sessions held at Ohio State last Thursday, Saturday, and Sunday.

During the planning stages of this research effort concerning the impact of college on students, we have become very excited about the importance which studies of this nature can have for higher education, in general, and for particular institutions, such as Ohio State and Kenyon. We cannot stress strongly enough, however, that your involvement is crucial to the success of this project.

Enclosed you will find the complete set of survey materials, including a cover letter and General Instructions. This survey packet is exactly the same as those completed by other students at Ohio State last week. Please take a few minutes to read the instructions carefully before you begin to respond to the survey questionnaires.

Kindly complete the questionnaires at your convenience and return them in the enclosed envelope no later than one week from today's date. Return the completed surveys by U.S. Mail (postage required), Campus Mail (no postage required), or by dropping them off at one of the following locations on campus (no postage required):

South Residence Halls, Area Office  
147 W. 12th Avenue

North Residence Halls, Area Office  
Royer Student Center  
85 Curl Drive

Olentangy Residence Halls, Area Office  
357 Morrill Tower  
1900 Cannon Drive

Student Personnel Assistant Program Office  
146 Arps Hall  
1945 N. High Street
If you have any additional questions or comments concerning this study which have not been discussed in our correspondence, please feel free to contact us at the following location:

South Area Office
Ohio State University
147 West 12th Avenue
Columbus, Ohio 43210
(614) 422-7965

Thanks once again for your interest in this project, and for your willingness to take part.

Respectfully,

John D. Heidke

Donald J. Omahan
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