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Heidke, John Durow

A STUDY OF COGNITIVE-INTELLECTUAL AND PSYCHOSOCIAL DEVELOPMENT OF WOMEN AT KENYON COLLEGE AND THE OHIO STATE UNIVERSITY

The Ohio State University

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A STUDY OF COGNITIVE-INTELLECTUAL
AND PSYCHOSOCIAL DEVELOPMENT OF
WOMEN AT KENYON COLLEGE AND
THE OHIO STATE 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
John Durow Heidke, B.S., M.S.

* * * * *

The Ohio State University
1982

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CHAPTER I

INTRODUCTION

As one reviews the literature in the realms of higher education and student development, the impact which institutions of higher learning have on students is unclear. 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. Studies of changes in developmental variables of college students, however, 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 college students at liberal arts colleges. Chickering studied men and women at thirteen small, liberal arts colleges. His results led to the development of a scheme of psychosocial development during what have come to be referred to as the traditional college years (ages 17 to 23). 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 direction. Fit implies the existence of appropriate sources of challenge and support for the student within the environment. Chickering went on to report that where this fit was not present students tended to drop out or fail.

Perry studied men at Harvard University and developed a cognitive structural theory of intellectual development. He, like Chickering, found developmental change in students as a result of their college experiences.

Heath studied men at Haverford College. His results also led to the establishment of a psychological theory of development. Similar to Chickering, Heath found that the college environment could facilitate growth toward psychological maturity along five dimensions (Increasing Symbolization, Allocentricism, Integration, Stability, and Autonomy) which are discussed relative to four personality sectors (cognitive skills, self-concept, values, and personal relations).

Finally, since 1970, several new instruments which measure aspects of Chickering's theory (Prince, Miller, and Winston, 1974; Erwin, 1978; Mines-Jensen, 1978; Barratt, 1978) and Perry's theory (Knefelkamp and Widick, 1974) have been developed. They have not been used extensively in impact studies nor with comparative populations from different types of institutions. This
study is designed to respond to these issues. In a more specific sense, this study cross-sectionally assesses the developmental level of freshmen and senior students at Kenyon College and in the Arts and Sciences Curriculum at the Ohio State University on several dimensions. In addition, the perceived environment of the respective institutions is also measured.

Kenyon College is a small, coeducational, liberal arts institution located in Gambier, Ohio. A private undergraduate institution, Kenyon enrolls approximately 1,450 students. The Ohio State University is a large, state-supported institution located in Columbus, Ohio. Within the Arts and Sciences Curriculum, there are presently approximately 5,000 undergraduate students enrolled. This study focuses on determining the cognitive development (Perry, 1970) and the psychosocial development (Chickering, 1969) of women students at these institutions using the instruments of Knefelkamp and Widick (1974), Barratt (1978), Mines and Jensen (1978), and Erwin (1978). A survey (Pace, 1969) of women's perceptions of their respective college environments was also conducted using the College and University Environment Scales.

The results of this work serve to expand the body of knowledge relative to student development and the environmental impact in higher education. Additionally, this study serves to provide data to validate the several
developmental instruments used. In terms of more specific results, The Ohio State University and Kenyon College may find this study useful in designing programs and establishing goals to better meet the needs of their students.
CHAPTER II

REVIEW OF THE LITERATURE

Historical Perspective

Research on the impact of college on students is voluminous. Studies using numerous theoretical perspectives, methodologies, and instruments are cited in the literature. Most studies focus on changes in student characteristics and attitudes. In contrast, a limited number of studies focus on psychosocial development, cognitive development, and environmental assessment. One of the most often asked questions in these various studies is: "How do students change as a result of their college experience?"

Until the last twenty years, the body of knowledge on the direction and amount of student change seems, at best, to be inconsistent and limited. Scientific rigor and consistency in findings were lacking (Feldman and Newcomb, 1969). As reported by Dressel and Lehmann (1965), these studies added only marginally to the body of knowledge concerning student change at institutions of higher education.
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). As Chickering (1969) points out, Jacob's work found that colleges had minimal impact on the values of their students. The primary contribution of Jacob's work was the establishment of a positive momentum for further research on the question of the impact of college on students. New theoretical perspectives and instruments were developed and more rigorous studies were begun.

Further research on the influence of the college environment beyond the classroom in developing students was undertaken by Eddy (1959). He concluded that variables such as the institutional setting, group living arrangements, attitudes of faculty members and students, and extracurricular activities could either enhance or detract from the general educative process of the college or university.

A number of significant models focus upon the development of the college student (Chickering, 1969; Heath, 1968; Perry, 1970; Sanford, 1966). Their conclusions, while somewhat general, support the contention that significant changes in modes of reasoning, values, skills, and attitudes do take place in students who experience college.
Chickering (1969) argues 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 outlines general environmental variables which may be important in considering this interaction.

Heath (1968) similarly argues as a result of his investigation of various growth determinants that the college environment can facilitate student development and maturation. His work is both cross-sectional and longitudinal in nature. Writing in 1963, Sanford notes that personality change can be facilitated by an environment which engenders an appropriate amount of challenge and support for the individual.

Perry (1970) in his Harvard studies focused on the cognitive aspects of development—specifically, how one reasons or thinks. Grounded in Perry's theory, a number of researchers (Knefelkamp, 1974; Widick, 1975; Kitchner, 1977; and King, 1977) have developed instrumentation which suggests the student's modes of reasoning change during the college years.

The studies previously noted support the assertion that change does take place in students while attending colleges or universities. They further point out that a number of variables beyond the formal classroom
experience interact with the student to bring about this change.

In their book, The Impact of College on Students (1969), Feldman and Newcomb also offer a number of propositions or impressions which appear to be germane to this study. They offer 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 . . . " (p. 325). The propositions are:

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

The degree and nature of different colleges' impacts vary with their student inputs—that is, entering students' characteristics differ among types of colleges in patterned ways. (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. (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. (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. (p. 331)

Feldman and Newcomb cite numerous conditions or variables which 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.

During the past decade, research focusing on the impact of the college experience on students has taken on new directions when compared to the studies reviewed by Feldman and Newcomb. There seems to be a movement away from emphasis on students' changes in values, attitudes, and personality characteristics. Recent works have measured the relationship between developmental variables and characteristics of the educational environment. There are three broad areas of literature which reflect this shift in emphasis and which are relevant to this study. They are 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.

**Perry's Theory of Cognitive Development**

Perry's (1970) theory is a cognitive developmental approach to intellectual development. The basic element of this approach is "structure"; a set of assumptions which an individual uses in cognitively perceiving, organizing, and evaluating experiences he/she encounters.

Perry suggests a model of intellectual/cognitive development comprised of nine stages or positions. These positions were initially defined through observation and measurement of Harvard University undergraduates in the 1950's and 1960's. Perry noted that as intellectual development proceeded, the basic structure of reasoning moved from simple distinctions and relationships toward more complexity and integration.

Perry shares the thinking of other developmental theorists (Kohlberg, 1968; Loevinger, 1976) in defining "stage" as a relatively stable form of reasoning. He chooses to use the term "position" rather than "stage," although their meanings are virtually synonymous. Each has the following characteristics:

1) **Positions are sequential.** Each is experienced in an invariant order. That is to say, 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 nor to the same extent; the rate of development varies. Furthermore, not all individuals ultimately develop cognitively to the same level of complexity.

2) Positions are **hierarchal 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 and may use 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 position. There is a move from one way of thinking to another which is more complex and integrative.

The **process** of cognition rather than the **content** is the important consideration in cognitive developmental theory. For example, two individuals might hold diametric views 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 (1978) points out, "The 'what' is different, but the 'how' is similar."
Cognitive developmental theories are concerned only with the 'how' not the 'what.'" (p. 8)

One further point relative to cognitive developmental theory has not been fully explored; but, nonetheless, needs to be mentioned. This is the concept of the universality of theory. Kohlberg (1969) suggests that this theory is universal in nature. That is to say, the invariant nature of positions is not culture-bound although the rate of development is related to person/environment interaction. This contention has not been explored by Perry.

Developmental change takes place when an individual encounters cognitive conflict. When a student's way of thinking or experiencing the world is challenged, the potential of development is enhanced. As the student becomes aware of this cognitive conflict he/she endeavors to re-establish a balance or equilibrium between his/her internal thinking processes and the way he/she is perceiving the external world. This process is known as equilibration. As Rodgers (1978) points out:

Development, as cognitive developmental theorists see it, therefore, 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. (p. 9)
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; but rather, the cognitive conflict is interpreted or filtered. 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 the student 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. The student may actually see a number of legitimate perspectives to the situation or problem. It may not be as important to find the "right" answer. 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 stage of thinking.

As Perry (1968) points out, "We do depend heavily on . . . particular concepts of assimilation of an experience to extant structure (or more broadly, "schema") and the accommodation of structure by transformations and recombinations which can result in new and more differentiated structuring of experience" (p. 204). According to Perry, 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 schema is particularly relevant to this study in that it focuses on cognitive development during the traditional college years. Robert White in his Foreword to Perry's (1968) book boldly 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" (p. v).

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 (1968) points out, the positions in commitment are not seen as structural and tend to be developed in individuals beyond the college years. Perry (1968) graphically describes his schema in *Forms of Intellectual and Ethical Development In The College Years*. This schema is summarized in the following paragraphs.

There are two assumptions common in the positions of dualism. There are but two categories of thinking: right and wrong. There is nothing that cannot be put into one of these two groupings. Secondly, anything that does not appear to fall in one of these two absolute categories exists due to some error or mistake.

In Position 1, everything can be accounted for absolutely. There is only right and wrong. No uncertainty is perceived, and, hence it does not exist. From this Position's perspective, as Perry points out, "... division is between the familiar world of
At Position 2, "two world" thinking still exists. Perceived elements of uncertainty can be attributed to errors committed by authorities, i.e., teachers, parents, clergy, etc. Nonetheless, a new element of reasoning has been encountered. Complexity and uncertainty, though not legitimimized, 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" (p. 87).

Information at Position 3 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.

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

Multiplicity is defined as pervasive uncertainty by Perry. It exists at Position 4. In this position the individual may reason in a manner which is exemplified by extreme confusion. No one right answer exists for most questions. The primary assumption which distinguishes this position from others is its plurality of thinking without clear internal structure. An individual at this
position might be heard to say, "Anyone has a right to his own opinion" (Perry, 1968). No differentiation amongst opinions is implied or acceptable.

Positions 5 and 6 are relativistic in nature. In these positions a plurality of thinking is also present. 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, an individual becomes increasingly aware of the relativistic perspective. One moves toward integrating his or her way of reasoning with the environment or context. Characterizations such as "better" or "worse" are more relevant than "right" or "wrong." Perry (1968) 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 signals the dawn of commitment in relativism. Non-absolute reasoning is applied to questions of one's own identity. 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" (p. 137). Non-absolute commitments are anticipated but not yet made.
Commitment continues to become more clearly defined through one's actions, values, and reasoning in Positions 7, 8, and 9. Perry suggests that the changes in these positions are less structural, and directed more toward clarification and the formulation of one's identity.

As noted previously, the primary research for Perry's theory was accomplished with undergraduates through the Bureau of Study Counsel at Harvard University. Initial studies consisted of extensive interviews by trained personnel with appropriate protocols in order to ascertain the subjects' levels of cognitive development. In order to expand Perry's theory and to assist in the determination of how cognitive change takes place, additional studies have been conducted by Knefelkamp (1974), Widick (1975), Kitchener (1977), and King (1978).

Rodgers (1977) randomly sampled freshmen at The Ohio State University for three consecutive years. He found that 85 percent of those measured were dualistic, 14 percent were in a transitional or multiplistic category, and less than 1 percent were relativistic. In his 1977 study of freshmen at Ohio Dominican College, he found 96 percent of the freshmen sampled to be dualistic, and 4 percent transitional between Positions 3 and 4. A similar study of Denison University freshmen found 60 percent of the subjects at dualistic positions, 28 percent
in transition between Positions 3 and 4, and 12 percent at relativistic positions.

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 society including higher education. Postulating seven major dimensions of development that occur 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 provide greater specificity and concreteness to these general abstractions.

Although his theoretical formulations have their roots in the psychosocial or ego identity theory of Erikson, Chickering emphasizes the concept of late adolescence to early adulthood (the 17-23 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" (1969, p. 5). This point of view strives to:
a) Explicate the developmental tasks facing the 17-23 year old, especially as those tasks pertain to college students.

b) Show that college can make a difference. That is, it can affect the rate and direction of an individual's development.

c) Examine the college environment. That is, 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 labeled as "developmental tasks," "stages of development," "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, and
(c) social and interpersonal competence leading to an enhanced sense of mastery of the college environment.

2) **Managing Emotions** - (a) Developing an awareness of one's emotions, and (b) integration of emotions within the stream of ongoing decisions and behavior—i.e., achieving new and more useful patterns of expression and internal control of one's emotions, especially in the areas of aggression and sex.

3) **Developing Autonomy** - (a) Emotional and instrumental independence, and (b) recognition of one's interdependencies with others.

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

4) **Establishing Identity** - (a) Conceptions concerning body and appearance, (b) clarification of sexual identification, and (c) emergence of a mature lifestyle.

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 of primary concern during the student's junior, senior, and post-graduate years in college.

5) **Freeing of Interpersonal Relationships** -
(a) Developing an increased capacity for tolerance, and
(b) shift in the quality of intimate relationships toward greater depth.

6) **Clarifying Purpose** - (a) Avocational and recreational interests, (b) vocational plans and aspirations, and (c) general life style considerations.

7) **Developing Integrity** - (a) Humanizing of values, (b) personalizing of values, and (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; and

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. (1969, p. 5)

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, 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. (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.

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 over-development, 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. (1969, pp. 306-307)

In developing his theoretical formulation, 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.

Since 1969, the most comprehensive effort to develop an instrument to measure Chickering's theory has been undertaken by Judith Prince, Theodore Miller, and Roger Winston. The Student Development Task Inventory (1974) 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" (Prince, Winston, 1971, p. 14).

Three of Chickering's seven vectors are assessed by the Student Development 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 developmental areas. The SDTI-I was developed as an "action-oriented tool," that is, for assessing and facilitating individual student's growth and development in the college setting. Hence, its use as a tool for research into the development of college age students as a group was initially limited. A revised edition (SDTI-II) reports research recently undertaken and reports additional potential uses of the instrument.

Beyond these efforts, and until recently, little scholarly work has been done to further explore the questions and theoretical formulations advanced by Chickering. A major reason has been the lack of more sophisticated instrumentation to assist in the further study of college students in terms of dimensions suggested by Chickering. 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 will be discussed in detail elsewhere in this paper.

**Environmental Assessment**

Colleges differ from one another in many ways (Feldman and Newcomb, 1969). Until recently, 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. (p. 5)

In the past decade, however, a number of studies have begun focusing upon students at several colleges or universities at the same time, using consistent sampling techniques and instrumentation in order to determine the differential impact of the college experience.

Murray (1938) conceptualizes 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) notes that in the college setting the press is seen as pressures, stresses, and conformity--demanding influences within the college or university's culture.

Walsh (1973) reviews a number of conceptual approaches used to analyze the interaction between an individual and the press of the environment (person-environment interaction):

1) Barker (1968) through his Behavior Setting Survey obtained data suggesting a positive relationship between the number of individuals in a given environment
and what is likely to take place in it. This model deals with the environment only in the broadest of terms.

2) Another model used to describe and differentiate college environments is offered by Clark and Trow (1966). Their typology defines the environment in terms of attitudes, values, behaviors, and member roles. From these they define four student subcultures: academic, collegiate, nonconforming, and vocational. Instrumentation of this model is operationalized through the College Student Questionnaire (Peterson, 1968). This behavioral instrument measures characteristics of those in the environment rather than their perceptions of it.

3) Using the Environmental Assessment Technique, Astin and Holland (1961) define college environments according to their mirroring of six personality types: realistic, investigative, artistic, social, enterprising, and conventional. They conjecture that different college types impact differentially on students. Chickering (1965) and other authors suggest that demographic characteristics as measured by the Environmental Assessment Technique may not be as important directly as they are in creating the propensity for certain conditions which have impact.

4) Pervin (1967) measures students' perceptions of their college environment with the Transactional Analysis of Personality and Environment. He found that students report their college experiences to be most satisfying when
there is significant congruence between their personal characteristics and the characteristics they perceive in the college milieu.

5) Using data generated in the 1950's and early 1960's, Pace (1963) developed the College and University Environment Scales (CUES). The instrument's 150 items measure: campus facilities, rules and regulations, faculty, curricula, instruction, student life, and other variables. Students are asked to respond "true" or "false" as to whether their perceptions of each statement are descriptive of their college. The responses are divided into five subscales: practicality (enterprise, organization, material benefits, and social activities), community (friendliness, cohesiveness, and group-orientation), awareness (self-understanding, reflectiveness, and identity), propriety (considerate, conventional), and scholarship (intellectuality, scholasticity).

The purpose of the CUES, simply put, is to assist the college or university in determining the "climate" as perceived by students. The instrument has a significant normative base. Analytically, the normed colleges are divided into categories based on such variables as: ownership, selectivity, geographical region, and curriculum.

The CUES has been used successfully in assisting colleges and universities to accurately identify students'
perceptions of their environment. This has obvious implications for possible modification of the college's atmosphere in a controlled and developmental fashion. As Feldman and Newcomb (1969) 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. (p. 125)

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 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 influences on 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. 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. (1969, p. 144)

Anecdotally, Pace (1967) reports that females score consistently higher than males on the variables of: harm
avoidance, emotionality, impulsiveness, and nurturance. He suggests that further investigation of male-female comparisons would be helpful in determining sex role perceptions.

To conclude, it can be noted that though a reasonable amount of research investigation has been accomplished utilizing instrumentation grounded in psycho-social theory, cognitive development, and studies on the impact of the college environment on students, little has been undertaken combining these types of measurements at the same time with like sample groups. In order to maximize the impact of college on students it seems appropriate to consider assessing, structuring, and evaluating environments based upon all three theoretical schemes. Additionally, in that a given campus environment may facilitate or inhibit psychosocial or cognitive development, assessment of differential college environments is called for.

If student personnel workers are to be impactful on the learning environment, they must have a sound baseline upon which to build. To that end this review and investigation is directed.
CHAPTER III

DESIGN OF THE STUDY

The purpose of this study is to investigate the developmental impact of the college experience on women students. More specifically, this project has gathered information on the developmental levels of freshmen and senior women 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 on three dimensions of Chickering's theory of psychosocial development (developing identity, freeing interpersonal relationships, and developing purpose) and on Perry's positions of intellectual development. An environmental assessment survey developed by Pace (the College and University Environment Scales II) was also administered in order to determine the degree to which environments at the two institutions were perceived as different or similar and the degree to which freshman and senior women would have similar or different perceptions.
It is hypothesized:

1) That freshman women and senior women within each institution and between individual institutions will perceive their college environments differently.

2) That senior women will have achieved greater levels of resolution of developing identity, freeing interpersonal relationships, and developing purpose than will have freshmen women at the respective institutions.

3) That freshman women at Kenyon College will manifest a greater level of resolution of developing identity, freeing interpersonal relationships, and developing purpose than will have freshman women at Ohio State.

4) That senior women at Kenyon College will manifest a greater level of resolution of developing identity, freeing interpersonal relationships, and developing purpose than will have senior women at Ohio State.

5) That senior women will have achieved more advanced positions of intellectual development as measured by Perry's theory than will have freshman women at the respective institutions.

6) That freshman women at Kenyon College will have achieved more advanced positions of intellectual development as measured by Perry's theory than will have freshman women at Ohio State.
7) That senior women at Kenyon College will have achieved more advanced positions of intellectual development as measured by Perry's theory than will have senior women at Ohio State.

A further purpose of this study is to offer a cross-sectional baseline for further longitudinal investigation of students at these institutions. Additionally, this study provides information relative to this research paradigm and the appropriateness of the several instruments employed in studies of this nature.

Methodology

Subjects

The population sampled for this study was made up of freshman and senior women at Kenyon College and the Arts and Sciences Curriculum 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.

-- Are 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.

— Are 17-19 years of age.

— Have declared Arts and Sciences as their intended college academic program.

Similarly, for purposes of this study, senior students are defined as follows:

Kenyon College:

— Have attended Kenyon College for four consecutive years (including possible study semester or year abroad).

— Plan to graduate in May, 1980.

— Are 21-23 years of age.

The Ohio State University:

— Have attended The Ohio State University for four consecutive years (including possible study quarter[s] or year abroad).

— Plan to graduate in June, 1980.

— Are 21-23 years of age.

— Are majoring in the College of Arts and Sciences.

The Ohio State University population is 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 can 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 and its comparison with developmental change at Kenyon.

From the population identified, a stratified sample of at least ten percent (10%) was randomly selected; population lists were provided by the two institutions. Given the nature of this study (descriptive, exploratory, ex post facto, cross-sectional), and given constraints associated with population size, instrument administration, and scoring, this sampling is considered to be sufficiently large to obtain meaningful results (see Table 1).

A follow up of the persons who failed to initially respond to the request to participate in the study was done as a second phase of the data-gathering process. The additional subjects increased the respondent pool only slightly. Many of the subjects who responded to follow-up phone calls or correspondence (see Appendices I-2, I-3, I-4, I-5, I-8) indicated that they either misplaced the instrument packet or were under some press of time regarding other pursuits.

Gay (1976) indicates that a 10% sample size provides adequate numbers for meaningful data analysis.
Table 1
Populations, Sample Sizes, and Respondents

<table>
<thead>
<tr>
<th>Institution/Class</th>
<th>Size of Population</th>
<th>Subjects Solicited</th>
<th>Percentage of Population</th>
<th>Actual Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon Freshmen</td>
<td>168</td>
<td>43</td>
<td>11.3</td>
<td>19</td>
</tr>
<tr>
<td>Kenyon Seniors</td>
<td>137</td>
<td>45</td>
<td>16.8</td>
<td>23</td>
</tr>
<tr>
<td>Ohio State Freshmen*</td>
<td>739</td>
<td>137</td>
<td>5.5</td>
<td>41</td>
</tr>
<tr>
<td>Ohio State Seniors*</td>
<td>173</td>
<td>71</td>
<td>15.0</td>
<td>26</td>
</tr>
<tr>
<td>Totals</td>
<td>1217</td>
<td>296</td>
<td>9.0</td>
<td>109</td>
</tr>
</tbody>
</table>

*Notes individuals in the Arts and Sciences Curriculum
Three of the four groups met this criteria. The fourth, Ohio State Freshmen women, while having the smallest percentage (5.5), had the highest actual respondents.

Design

As indicated above, the nature of this study is ex post facto and 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. (1973, p. 379)

The 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 here. As stated in more detail elsewhere, it is the intention of this study to systematically describe freshman and senior women at Kenyon College and in the Arts and Sciences Curriculum 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 relationships existing between developmental variables, class (i.e., freshman and senior), and institutional characteristics.

A cross-sectional version of a two-group pretest-posttest design is used. This is graphically portrayed as follows:

\[ O_1 \quad X_1 \quad O_2 \]
\[ O_1 \quad X_2 \quad O_2 \]

In this instance, \( O_1 \) refers to the observation of freshmen and \( O_2 \) refers to the observation of seniors. \( X_1 \) and \( X_2 \) refer to the four-year collegiate experiences at Kenyon and Ohio State, respectively. Both \( O_1 \) and \( O_2 \) in a cross-sectional design are measured at the same time.

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

```
INPUT  THROUGH-PUT  OUTPUT
```

![Diagram](image-url)
At points A (INPUT), the developmental characteristics of freshmen were assessed at Kenyon \(A_1\) and Ohio State \(A_2\) in 1980. Points C (OUTPUT) represent the developmental characteristics of seniors at Kenyon \(C_1\) and Ohio State \(C_2\) during the latter part of their final year in college. Points \(B_1\) and \(B_2\) (THROUGH-PUT) represent the assessment of the perceptual characteristics of the respective college environments.

Ideally, seniors should be assessed after being exposed to the college environment for an entire four-year period. Time constraints and the cross-sectional nature of this study, however, necessitated administering all instruments to students in the Winter and Spring 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).

Instrumentation

To assess student development along the developmental dimensions discussed earlier, and to assess student
perceptions of the college environment, five instruments have been selected for use in this study. In the area of cognitive intellectual development, a Perry Instrument (Widick, 1975; Knefelkamp, 1974) was employed. In the area of psychosocial development, the following three instruments, which have referents in the work of Chickering, were administered:

- The Erwin Identity Scale (Erwin, 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 Scaled (CUES II) developed by Pace in 1969. A more detailed discussion of all instruments cited above follows:

**Perry Instrument (PI)**

An instrument was developed by Widick (1975) and Knefelkamp (1974) to assess a person's intellectual development along the schema proposed by William Perry. This instrument, through the use of five sentence completion stems and two essay questions, seeks to obtain a sample of a person's thinking. While the instrument asks questions based on issues of content, it is the process of thought or conceptualization that is actually being assessed.
Responses to each stem or essay are "scored" by qualified raters; ratings are made and interpreted consistent with Perry's theory. The rating procedure normally requires two raters. Each subject's responses are analyzed using structural cues, attitudinal/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/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.

A definitive scoring manual for the instrument developed by Knefelkamp and Widick has yet to be published. Preliminary scoring manuals and studies using the instrument at various institutions (Widick, 1975; Knefelkamp, 1974; Rodgers and Widick, 1978), however, indicate that the instrument does seem to validly discriminate between persons in the 18-35 years 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 qualified raters and the amount of time required to rate the completed instrument are practical limitations to its more widespread use. To date, however, the Knefelkamp/
The Widick instrument seems to be one of the most viable assessment tools for obtaining a sample of a student's thinking relative to the constructs advanced by Perry.

A copy of the Knefelkamp/Widick instrument can be found in Appendix A.

**The Iowa Instruments**

Three instruments have recently (1978) been 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 in conjunction with the Iowa Student Development Project (King, 1978), these instruments and the Chickering vector each purports to be primarily concerned with are:

- The Erwin Identity Scale (Erwin, 1978) -- Establishing Identity
- The Mines-Jensen Interpersonal Relationship Inventory (Mines and Jensen, 1978) -- Freeing Interpersonal Relationships
- The Barratt Developing Purposes Inventory (Barratt, 1978) -- Developing Purpose

The relative 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.

The Erwin Identity Scale (EIS). The Erwin Identity Scale (EIS) was developed by Erwin in 1978. As its title suggests, the instrument attempts to assess individuals on the student development vector of 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 this instrument the lack of available instrumentation to assess the construct of identity.

To review, establishing identity is one of the developmental vectors in Chickering's scheme. As described by Chickering, it is "that solid sense of self" that evolves as the first three of the 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, developing 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. (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). (1978, pp. 4-5)

Studies using an initial version of the EIS may be summarized as follows:

1) Reliability estimates, indicating the degree to which items within each subscale measure a common characteristic, were satisfactory (see Tables 2 and 3).
### Table 2
Freshmen and Seniors

<table>
<thead>
<tr>
<th>Sub-Scale</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 3
High School and Graduate Students

<table>
<thead>
<tr>
<th>Sub-Scale</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>

(Erwin, 1978, p. 29)
2) A moderate degree of relationship was found between the EIS subscale measures and lack of 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 4.

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 is postulated by Chickering, the EIS is validly measuring a conceptualization of identity which is discrepant from

| Table 4 |
| Freshmen and Seniors--Inter-Scale Correlations |
|---------|------------------------------------------------|
|           | Confidence | Sexual Identity | Body and Appearance | PI |
| Sexual Identity | .81         |                |                    |    |
| Conceptions About Body and Appearance | .63         | .54            |                    |    |
| Personal Integration | .81         | .52            | .41                |    |
| Lack of Anxiety | .67         | .42            | .47                | .71 |

(Erwin, 1978, p. 26)
Chickering's, or the EIS is not validly measuring Chickering's concept of identity.

Later studies conducted by Erwin in 1978 indicated 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.

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) 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 ACT 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 ACT inventory. . . . (Erwin, 1978, pp. 181-182)
7) A factor analysis of the 58 items of the EIS defines 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; Erwin postulates the need for additional subscales to adequately define the construct.

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

The Mines-Jensen Interpersonal Relationship Inventory (MJIRI). The Mines-Jensen Interpersonal Relationship Inventory (MJIRI) was developed by Mines and his colleagues at the University of Iowa in 1978. This instrument attempts to assess student development on Chickering's vector of 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. (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 towards 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 MJIRI 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. Recent studies by Mines (1978) using the MJIRI had three purposes:

1) To revise earlier versions of the MJIRI,  
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 are found to be moderate. Reliability information on the scales obtained
as a result of three administrations of the instrument over an eight-month period can be found in Table 5. Sub-scale intercorrelations were low as postulated, but not orthogonal. These intercorrelations 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 scales. 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 four-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 eight-month retest. The means for both testings were ordered in the theoretically predicted direction as suggested by Chickering (1969). (1978, p. 4)

Additional validity information is not available at this time.

As the reader can perceive, work using the MJIRI is in its early stages. The instrument does appear to be moderately successful, however, in assessing students’ development in the area of freeing interpersonal relationships, and is thus included in this investigation. A copy of the Mines-Jensen Interpersonal Relationship Inventory can be found in Appendix C.

The Barratt Developing Purposes Inventory (DPI). 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
### TABLE 5
Mines-Jensen Interpersonal Relationship Inventory
Reliabilities Of The Scales

<table>
<thead>
<tr>
<th>Testing</th>
<th>Scale</th>
<th>No. of Items</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUMMER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Testing</td>
<td>Tolerance</td>
<td>20</td>
<td>.65</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
<td>22</td>
<td>.68</td>
</tr>
<tr>
<td>4-MONTH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retest</td>
<td>Tolerance</td>
<td>20</td>
<td>.66</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
<td>22</td>
<td>.68</td>
</tr>
<tr>
<td>8-MONTH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retest</td>
<td>Tolerance</td>
<td>20</td>
<td>.44</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
<td>22</td>
<td>.72</td>
</tr>
</tbody>
</table>

(Mines, 1978, p. 10)

### TABLE 6
Mines-Jensen Interpersonal Relationship Inventory
Interscale Correlations For Tolerance and Quality Scales

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

(Mines, 1978, p. 10)
is an often stated goal advanced for students by educational institutions. This goal, however, is often stated 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, and
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) still 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, however, used scale definitions modified somewhat from what Chickering had written. 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 towards 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 lifestyle. (Barratt, 1978, pp. 4-6)

Form 3 (DPI-3) of the DPI reflects a revised scoring technique of Form DPI-2. Six new scales 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 scale 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 towards school work and instructors and attitudes towards college.

2) Professional Behaviors: This scale 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 scale 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 scale 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 scale 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 scale 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 interests. 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 scale constructs in DPI-2 do appear to measure more consistently. These reliabilities are reported in Table 7. Interscale correlations for DPI-2 (as reported in Table 8) indicate that while the scales are each reflecting separate constructs, there is moderate overlap between the domains being assessed. Test-retest correlations using the DPI-2 show stability over time. These correlations are reported in Table 9.

For the experimental scoring technique, reliabilities are more consistent than those achieved.

TABLE 7
Scale 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</td>
<td>.53</td>
<td>.27</td>
<td>.70</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td>.73</td>
<td>.50</td>
<td>.79</td>
</tr>
<tr>
<td>Style of Life</td>
<td>.77</td>
<td>.79</td>
<td>.81</td>
</tr>
</tbody>
</table>

(Barratt, 1978, p. 15)
TABLE 8  
Inter-scale Correlations, Standard Scoring Technique  
Developing Purposes Inventory-2 (DPI-2)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Summer 1977</th>
<th>Fall 1977</th>
<th>Spring 1978</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>V1</td>
<td>LS</td>
<td>V1</td>
</tr>
<tr>
<td>ARL</td>
<td>.50</td>
<td>.50</td>
<td>.28</td>
</tr>
<tr>
<td>V1</td>
<td>.64</td>
<td></td>
<td>.68</td>
</tr>
</tbody>
</table>

(Barratt, 1978, p. 15)

TABLE 9  
Test-Retest Correlations by Scale  
Developing Purposes Inventory-2 (DPI-2)

<table>
<thead>
<tr>
<th>Scale</th>
<th>3-Month Retest</th>
<th>6-Month Retest</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARL</td>
<td>.611</td>
<td>.627</td>
</tr>
<tr>
<td>V1</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)
using earlier scoring techniques. Interscale correlations are also much lower—a desirable occurrence. Tables 10 and 11 report these correlations.

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

**TABLE 10**

Scale Reliabilities In Cronbach's Alpha,
Revised Scoring Technique
Developing Purposes Inventory-2 (DPI-2)

<table>
<thead>
<tr>
<th>Sub-scale</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 11
Inter-scale Correlations,
Revised Scoring Technique
Developing Purposes Inventory-2 (DPI-2)

<table>
<thead>
<tr>
<th>Sub-scale</th>
<th>Professional</th>
<th>Career</th>
<th>Recreation-Activities</th>
<th>Recreation-Social</th>
<th>Life Style</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUMMER 1977</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Behaviors</td>
<td>.52</td>
<td>.38</td>
<td>.17</td>
<td>.13</td>
<td>.31</td>
</tr>
<tr>
<td>Professional Behaviors</td>
<td>.51</td>
<td>.34</td>
<td>.13</td>
<td>.31</td>
<td>.31</td>
</tr>
<tr>
<td>Career Behaviors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation-Activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation-Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FALL 1977</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Behaviors</td>
<td>.39</td>
<td>.52</td>
<td>.06</td>
<td>.08</td>
<td>.21</td>
</tr>
<tr>
<td>Professional Behaviors</td>
<td>.56</td>
<td>.30</td>
<td>-.08</td>
<td>.34</td>
<td>.34</td>
</tr>
<tr>
<td>Career Behaviors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation-Activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation-Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SPRING 1978</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Behaviors</td>
<td>.75</td>
<td>.57</td>
<td>.42</td>
<td>.59</td>
<td>.53</td>
</tr>
<tr>
<td>Professional Behaviors</td>
<td>.19</td>
<td>.15</td>
<td>.44</td>
<td>.34</td>
<td>.34</td>
</tr>
<tr>
<td>Career Behaviors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation-Activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation-Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Barratt, 1978, pp. 16-17)
College and University Environment Scales (CUES II)

As noted by Astin (1968):

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. (p. 2)

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

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

2) Interpretative - Identifying those environmental
differences that may be related to differential college
influences 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 similar to or different from those held
by students in the Arts and Sciences Curriculum at The Ohio
State University? Are perceptions of the environment held
by freshmen and seniors within each institution similar or
different?

2) What inferences might be made as to the direction
and amount of change of Kenyon College students 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 be asked as 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 notes 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. (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 first 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, eliminated "poor" items
identified in CUES I, and contains new items reflecting changes in the higher education setting. CUES II consists of 100 of the original 150 items found in CUES I. In addition, 60 items of an "experimental" nature are included in CUES II. Approximately 30 minutes are required for the student to complete the CUES.

The 160 items in CUES II 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 CUES II describe are as follows:
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 the 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 of 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.

(Pace, 1969, pp. 11-12)

In interpreting CUES II results from students at Kenyon and the Arts and Science Curriculum at Ohio State, the following were explored:

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

2) Comparisons of the five CUES 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.

The considerable use of CUES I and CUES 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 CUES 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 CUES, is a concept buttressed by a good deal of concurrent validity. (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, 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) 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 institutions over time:

Test-retest comparisons made from comparable samples of reporters over a one- or two-year period, or comparisons of scores from different groups judged to be qualified reporters... have been tabulated and summarized for 25
TABLE 12
Distribution of Item-Scale Correlations:
CUES, Second Edition

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Practicality</th>
<th>Community</th>
<th>Awareness</th>
<th>Propriety</th>
<th>Scholarship</th>
</tr>
</thead>
<tbody>
<tr>
<td>.90-.99</td>
<td>1</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>.80</td>
<td>3</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>.70</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>.60</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>.50</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>.40-.49</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Number of Items: 20 20 20 20 20 20

(Pace, 1969, p. 38)
<table>
<thead>
<tr>
<th>Practicality</th>
<th>Community</th>
<th>Awareness</th>
<th>Propriety</th>
<th>Scholarship</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practicality</td>
<td>19</td>
<td></td>
<td></td>
<td>1</td>
<td>20</td>
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<td>Community</td>
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<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Awareness</td>
<td></td>
<td></td>
<td>20</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Propriety</td>
<td></td>
<td>1</td>
<td>19</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Scholarship</td>
<td></td>
<td></td>
<td></td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

(Pace, 1969, p. 39)
**TABLE 14**
Median Correlations Of Items With Their Own Scale Score And With Each Of The Other Scale Scores: CUES, Second Edition

<table>
<thead>
<tr>
<th></th>
<th>Practicality</th>
<th>Community</th>
<th>Awareness</th>
<th>Propriety</th>
<th>Scholarship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practicality</td>
<td>.62</td>
<td>.10</td>
<td>-.20</td>
<td>.09</td>
<td>-.35</td>
</tr>
<tr>
<td>Community</td>
<td>.11</td>
<td>.72</td>
<td>.08</td>
<td>.40</td>
<td>.09</td>
</tr>
<tr>
<td>Awareness</td>
<td>-.24</td>
<td>.10</td>
<td>.76</td>
<td>.08</td>
<td>.43</td>
</tr>
<tr>
<td>Propriety</td>
<td>.04</td>
<td>.43</td>
<td>.01</td>
<td>.65</td>
<td>.09</td>
</tr>
<tr>
<td>Scholarship</td>
<td>-.43</td>
<td>.14</td>
<td>.49</td>
<td>.13</td>
<td>.80</td>
</tr>
</tbody>
</table>

(Pace, 1969, p. 39)
### TABLE 15
Intercorrelations Of Scale Scores
CUES, Second Edition

<table>
<thead>
<tr>
<th></th>
<th>Practicality</th>
<th>Community</th>
<th>Awareness</th>
<th>Propriety</th>
<th>Scholarship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practicality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness</td>
<td>-.34</td>
<td>.09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propriety</td>
<td>.10</td>
<td>.53</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scholarship</td>
<td>-.50</td>
<td>.12</td>
<td>.56</td>
<td>.12</td>
<td></td>
</tr>
</tbody>
</table>

(Pace, 1969, p. 39)
TABLE 16
Reliability Estimates:
CUES, Second Edition

<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>

(Pace, 1969, p. 44)

With five scale scores for each of 25 institutions there are 125 comparisons. Of this number 80 percent have differed by four 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 three points. The chances are four out of five that, with a comparable sample, the obtained score will not differ by more than three points; and the chances are three out of five that it will not differ by more than two points.

(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.
Limitations normally associated with descriptive, cross-sectional studies are inherent in the design of this portion of the study pertaining to environmental assessment. 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, no matter what their personality characteristics.

2) The freshmen sampled may in fact be different than the seniors were when they entered their respective institutions. It should be noted, however, that no major national or international event, such as the Viet Nam War, the assassination of an important political personality, the ending of the military draft, etc., has occurred that might suggest a strong reason to suspect such a difference.

3) Results can be generalized no further than the institutions of this study. Nonetheless, directions for further investigation can be suggested.

A copy of the College and University Environment Scales, Second Edition (CUES II), 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</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 does not alter the intended meaning of the individual items.

Data Collection

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

1) Sample selection took place.

2) Students were notified through the mail that they had been selected as possible participants in the study. The letter which they received provided details of the project and indicated the nature of their participation.
Voluntary participation and respondent anonymity was emphasized.

3) Each student selected to take part in the study was asked to return a postcard on which she indicated willingness to participate.

4) Efforts were made through telephone contact to encourage participation.

5) A second letter was sent to all who agreed to participate elaborating on the instrument administration and expressing appreciation for the participant's willingness to assist with the project (see Appendix I).

6) An open information session was held for participants at each institution to ask any questions they might have. Previous correspondence noted specific times and places.

7) The instruments were administered either in group settings or mailed to the subjects for completion within a reasonable timeframe. Human Subjects consent forms were distributed with the instrument packets. The time required for administering the set of five instruments is as follows:

- Perry Instrument ....... 35 minutes
- Erwin Identity Scale .... 30 minutes
- Mines-Jensen Interpersonal Relationship Inventory .... 30 minutes
- Barratt Developing Purposes Inventory .... 30 minutes
- College and University Environment Scale II .... 30 minutes
The total time required is 155 minutes (two hours, 35 minutes).

8) To again investigate for the possibility of non-respondent bias, those who indicated that they would participate but did not were again contacted and asked to complete the various instruments.

Data Analysis

The nature of this study is exploratory, descriptive, ex post facto, and cross-sectional. The analysis of the data was undertaken as follows:

Student Group Profiles

This section of the analysis is purely descriptive. Individual scores on the five instruments being used are grouped; class (i.e., freshman and senior), institution (i.e., Kenyon and Ohio State), and class by institution profiles are noted. Where appropriate, group data such as frequencies, means, medians, ranges, standard deviations, etc., are 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 elsewhere in this paper, in interpreting CUES II results from students at Kenyon and the Arts and Sciences Curriculum at Ohio State, the following is being explored:

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

2) Comparisons of the five 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.
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 by using Multivariate Analysis of Variance (MANOVA) and Analysis of Variance (ANOVA) techniques. For each of the three instruments, a 2 x 2 (Class by Institution) Multivariate Analysis of Variance was conducted, with the scores on the subscales of the instrument representing the multiple dependent variables. Appropriate tests of significance (Roa's R = Roa's F approximation statistic) were made to test for overall main class effects, overall main institution effects, and overall class by institution interaction effects. Where appropriate, follow up two-way ANOVA's were performed to analyze main class, main institution, and class by institution interaction effects for each of the subscales of each of the three instruments. Dunn's Technique for making post-hoc comparisons was employed to follow up on any significant main or interaction effects.

Analysis of the data from the Knefelkamp/Widick Instrument took two forms. The first procedure used a technique 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 class and institution as the two independent variables. Main effects for class and institution were examined, as well as class by institution interaction effects. Dunn's Technique for post-hoc pairwise comparisons was used to further investigate any significant effects.

The second procedure in analyzing the Knefelkamp/Widick Instrument data was to examine whether membership in each of the four groups being examined (Kenyon seniors, Kenyon freshmen, Ohio State seniors, Ohio State freshmen) is related to the scores obtained on the Knefelkamp/Widick Instrument. First, both group membership and Perry scale scores were treated as nominal data. A measure of association, Eta, was used to examine the relationships which exist. Secondly, the Perry data again is examined as a continuous measure. Group membership is 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
can be made as to the effects of college attendance on student development at the institutions examined. Any such inferences are subject, however, to the limitations of cross-sectional, ex post facto investigation which is conducted at selected institutions for exploratory and descriptive purposes. In this cross-sectional investigation, as noted earlier, it is assumed that the freshmen sampled are no different than the seniors were when they entered their respective institutions. Research of a longitudinal nature is necessary to overcome this limitation. Secondly, the results of this study can only be generalized to the populations currently examined at Kenyon and at Ohio State. Further study is needed to allow generalizations to other generations of Kenyon and Ohio State students or to students at other institutions.
CHAPTER IV

RESULTS OF THE STUDY

This chapter contains a restatement of the hypotheses of the study and a description of the results.

The seven hypotheses were:

1) That freshman women and senior women within each institution and between institutions will perceive their college environments differently.

2) That senior women will have achieved greater levels of resolution of developing identity, freeing interpersonal relationships, and developing purpose than will have freshman women at the respective institutions.

3) That freshman women at Kenyon College will manifest a greater level of resolution of developing identity, freeing interpersonal relationships, and developing purpose than will have freshman women at Ohio State.

4) That senior women at Kenyon College will manifest a greater level of resolution of developing identity, freeing interpersonal relationships, and developing purpose than will have senior women at Ohio State.

5) That senior women will have achieved more advanced positions of intellectual development as measured
by Perry's theory than will have freshman women at the respective institutions.

6) That freshman women at Kenyon College will have achieved more advanced positions of intellectual development as measured by Perry's theory than will have freshman women at Ohio State.

7) That senior women at Kenyon College will have achieved more advanced positions of intellectual development as measured by Perry's theory than will have senior women at Ohio State.

Perceptions of the Environment

The College and University Environment Scales (CUES II) was administered to the subjects at the respective institutions for two purposes:

1) To determine if there are differences between the perceived environments of Kenyon College and The Ohio State University.

2) To determine if there are differential influences in the environments and relate them to developmental measures.

The CUES II measures the perceived general climate of the college/university setting through a series of statements reflecting course of study, campus rules, attitudes, characteristics of the faculty, patterns and styles of communication, interests, out-of-classroom activities, and the general degree of student awareness.
The statements are then grouped into five dimensions:
Practicality, Community, Awareness, Propriety, and Scholarship. The specific characteristics of each dimension are defined elsewhere in this work.

Based upon Pace's (1969) definitions, Ohio State is considered a General University (GU). Institutions in this group include either public or private universities with extensive graduate programs and moderate standards of selectivity. Kenyon is a Highly Selective Liberal Arts College (SLA). As the definition implies, the category includes institutions which have an undergraduate focus, rigorous acceptance criteria, and strong groundings in liberal education.

The different perceptions between classes and institutions are summarized in Figures 1 through 5. On the Practicality Scale all groups except Kenyon freshmen fell within the range of the appropriate national norm. Kenyon women, with a raw score of 15, perceived a higher level of practicality, i.e., a more practical environment, than did similarly normed groups. Ohio State women scored higher than Kenyon women. Additionally, seniors scored higher respectively than did freshmen.

All four categories of subjects scored above means within respective normed groups on the Community Scale as noted in Figure 2. Seniors at both institutions perceived slightly less community, i.e., friendliness, cohesiveness
Bars represent ranges for national samples of General Universities (GU) or Highly Selective Liberal Arts Colleges (SLA) respectively.

1 = Freshmen women sampled at the respective institutions.

2 = Senior women sampled at the respective institutions.

3 = Mean score for similar institutions sampled nationally.

FIGURE 1
CUES II Practicality Scale
National Ranges, Means and Individual Institution Scores
OSU                      Kenyon
CUES Scores

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
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<td>20</td>
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</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Bars represent ranges for national samples of General Universities (GU) or Highly Selective Liberal Arts Colleges (SLA) respectively.

1 = Freshmen women sampled at the respective institutions.

2 = Senior women sampled at the respective institutions.

3 = Mean score for similar institutions sampled nationally.

FIGURE 2
CUES II Community Scale
National Ranges, Means and Individual Institution Scores
Bars represent ranges for national samples of General Universities (GU) or Highly Selective Liberal Arts Colleges (SLA) respectively.

1 = Freshmen women sampled at the respective institutions.

2 = Senior women sampled at the respective institutions.

3 = Mean score for similar institutions sampled nationally.

FIGURE 3

CUES II Awareness Scale
National Ranges, Means and Individual Institution Scores
Bars represent ranges for national samples of General Universities (GU) or Highly Selective Liberal Arts Colleges (SLA) respectively.

1 = Freshmen women sampled at the respective institutions.

2 = Senior women sampled at the respective institutions.

3 = Mean score for similar institutions sampled nationally.

FIGURE 4
CUES II Propriety Scale
National Ranges, Means and Individual Institution Scores
Bars represent ranges for national samples of General Universities (GU) or Highly Selective Liberal Arts Colleges (SLA) respectively.

1 = Freshmen women sampled at the respective institutions.

2 = Senior women sampled at the respective institutions.

3 = Mean score for similar institutions sampled nationally.

**FIGURE 5**

CUES II Scholarship Scale
National Ranges, Means and Individual Institution Scores
and loyalty, than did their freshman counterparts. As a group Kenyon students achieved a higher score than Ohio State students.

Figure 3 indicates two variations from respective normed groups on the Awareness scale. Ohio State freshmen scored three points above the upper range limit for General Universities. Conversely, Kenyon seniors scored six points below the lower limit of the range for Selective Liberal Arts colleges. Freshmen at both institutions perceived elements of concern and emphasis on the campus along such variables as: self-understanding, search for identity, creativity, and appreciation for the arts than did their senior counterparts. OSU freshmen scored eight points higher than seniors. Kenyon freshmen scored six points higher than seniors.

Students at both institutions scored within normed ranges on the Propriety Scale as noted in Figure 4. As in the previous scale, freshmen scored higher than seniors within each institution suggesting that they perceive a more considerate, proper and conventional campus environment. While both Kenyon groups scored within range, freshmen scored ten points higher than did seniors.

The most dramatic differences between institutions was manifest on the Scholarship Scale (see Figure 5). While only a six point raw score difference was found between freshmen, a fifteen point difference existed
between seniors. In both cases Kenyon students reported higher intellectual and scholastic rigor in their environments than did Ohio State subjects. Based on the CUES II categories within which the respective institutions fall one might expect differences. The dramatic variance between seniors is nonetheless noteworthy.

By converting CUES II raw scores to percentile equivalents a graphic comparison of freshmen and seniors at both institutions along all five scales is possible.

By summarizing the information in Figure 6 one can readily note similarities and differences. On the Scales of Practicality, Community, and Awareness, freshmen and seniors at the respective institutions appear to have similar perceptions: generally within fifteen percentile points of one another. Ohio State subjects continue that similarity on the Propriety Scale. Dramatically, Kenyon freshmen view the propriety of their environment over fifty percentile points higher than seniors. Kenyon students hold similarly high perceptions on the Scholarship Scale. Seniors scored at the 98th percentile and freshmen at the 93rd percentile as opposed to Ohio State seniors at the 43rd percentile and freshmen at the 77th percentile.

Ultimately it can be noted that perceptual differences seem to exist between freshmen and seniors at each institution based upon CUES II scores and percentile equivalents. Additionally differences do indeed exist
FIGURE 6

Percentile Equivalents for CUES II Scores for Freshman and Senior Women at Ohio State University and Kenyon College
across institutions though the degree of difference varies from class to class and institution to institution.

The most notable change between freshmen and seniors at Kenyon occurred on the Propriety Scale. Seniors perceived the environment as being much less "proper" than did freshmen.

At Ohio State the largest difference between freshmen and seniors was on the Scholarship Scale. Seniors reported less intellectual rigor than did freshmen.

Between institutions there were numerous differences. Generally stated, Kenyon students perceived their environment as being less practical, with a higher community orientation, and having more emphasis on intellectual rigor than did Ohio State students.

Cognitive Development as Measured by Perry Scores

Table 17 notes descriptive information on the Perry scheme of intellectual development. Kenyon freshmen and seniors had higher mean scores than did respective groups at Ohio State. Mean totals for seniors were 338 points higher than freshmen across institutions. Kenyon freshmen scored comparably to Ohio State seniors.

A measure of association, eta, was utilized to determine the relationship between the means of continuous scale scoring and the more traditional nominal scale scoring of the Knefelkamp/Widick Instrument. With
### TABLE 17
Mean and Standard Deviation Perry Scores by Class and Institution

<table>
<thead>
<tr>
<th>Institution</th>
<th>Class</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freshmen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenyon</td>
<td>Freshmen</td>
<td>3.097</td>
<td>.49</td>
<td>19</td>
<td>3.31</td>
<td>.511</td>
<td>23</td>
<td>3.214</td>
<td>.49</td>
<td>42</td>
</tr>
<tr>
<td>OSU</td>
<td>Freshmen</td>
<td>2.648</td>
<td>.42</td>
<td>40</td>
<td>2.97</td>
<td>.589</td>
<td>26</td>
<td>2.775</td>
<td>.514</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>Seniors</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Kenyon</td>
<td>Seniors</td>
<td>3.31</td>
<td>.511</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>OSU</td>
<td>Seniors</td>
<td>2.97</td>
<td>.589</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Kenyon</td>
<td>Total</td>
<td>3.214</td>
<td>.49</td>
<td>42</td>
<td>3.31</td>
<td>.511</td>
<td>23</td>
<td>3.214</td>
<td>.49</td>
<td>42</td>
</tr>
<tr>
<td>OSU</td>
<td>Total</td>
<td>2.775</td>
<td>.514</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.792</td>
<td>.475</td>
<td>59</td>
<td>3.13</td>
<td>.574</td>
<td>49</td>
<td>2.945</td>
<td>.547</td>
<td>108</td>
</tr>
</tbody>
</table>

### TABLE 18
Analysis of Variance of Perry Scores by Class and Institution

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution</td>
<td>1</td>
<td>3.906</td>
<td>3.906</td>
<td>16.279**</td>
</tr>
<tr>
<td>Class</td>
<td>1</td>
<td>1.795</td>
<td>1.795</td>
<td>7.483*</td>
</tr>
<tr>
<td>Institution by Class</td>
<td>1</td>
<td>.076</td>
<td>.076</td>
<td>.317</td>
</tr>
<tr>
<td>Within Cells</td>
<td>104</td>
<td>24.957</td>
<td>.239</td>
<td>3777.491</td>
</tr>
<tr>
<td>Total</td>
<td>107</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .01
** p < .001
continuous scoring as the dependent variable $\eta$ is computed as $0.9823$. A very high degree of relationship between the two modes of scoring was thus noted.

The ANOVA, as noted in Table 18, for the Independent Variable - Institution was found to be significant, $F(1,104) = 16.279, p < .001$. Kenyon students achieved higher Perry scores than did Ohio State students. The Independent Variable - Class was also found to be significant, $F(1,103) = 7.483, p < .01$. As a group seniors achieved higher scores than freshmen. The interaction - Class by Institution was not significant, $F(1,104) = 3.17, p < .06$.

Point-biserial correlation coefficients were computed for: Kenyon freshmen and Kenyon seniors, Ohio State freshmen and Ohio State seniors, Kenyon freshmen and Ohio State freshmen, and Kenyon seniors and Ohio State seniors. Of these dichotomous groups significance was achieved at the .05 level in all but Kenyon freshmen and Kenyon seniors.

Hence, this investigation suggests that there may be significant differences between freshmen and seniors when viewed as groups and freshmen and seniors at Ohio State. There would not appear to be significant differences between scores of freshmen and seniors at Kenyon. Based upon these analyses evidence exists to support
Hypotheses 6 and 7. Hypothesis 5 is supported at Ohio State but not at Kenyon.

Identity as Measured by the Erwin Identity Scale

Analysis of group score results of the Erwin Identity Scale (EIS) indicate mean differences between the classes and institutions assessed. To review, the Erwin Identity Scale is designed to interpret one's level of identity achievement through the use of three subscales—Confidence, Sexual Identity, and Conceptions About Body and Appearance. Table 19 summarizes results of the three subscales.

On the Confidence subscale the mean score for Ohio State seniors (68.000) was highest among groups assessed. As discreet groupings, seniors achieved higher means than freshmen and Ohio State students higher than those at Kenyon.

On the Sexual Identity subscale, Ohio State seniors, with a mean score of 84.500, reported results over five points higher than Ohio State freshmen, Kenyon seniors, or Kenyon freshmen. While Kenyon seniors had a higher mean score than Kenyon freshmen, the difference was slight (.348). Ohio State students in general and Ohio State seniors specifically had higher mean scores than Kenyon students in general and Kenyon freshmen specifically.
TABLE 19
Mean and Standard Deviation Scores for Erwin Identity Scale by Class and Institution

<table>
<thead>
<tr>
<th>Institution</th>
<th>Confidence Subscale</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freshmen</td>
<td>Seniors</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>Kenyon</td>
<td>61.368</td>
<td>11.86</td>
<td>19</td>
<td>65.304</td>
</tr>
<tr>
<td>OSU</td>
<td>63.170</td>
<td>7.76</td>
<td>41</td>
<td>68.000</td>
</tr>
<tr>
<td>Total</td>
<td>62.600</td>
<td>9.19</td>
<td>60</td>
<td>66.735</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Institution</th>
<th>Sexual Identity Subscale</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freshmen</td>
<td>Seniors</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>Kenyon</td>
<td>79.000</td>
<td>10.65</td>
<td>19</td>
<td>79.348</td>
</tr>
<tr>
<td>OSU</td>
<td>78.976</td>
<td>8.38</td>
<td>41</td>
<td>84.500</td>
</tr>
<tr>
<td>Total</td>
<td>78.983</td>
<td>9.97</td>
<td>60</td>
<td>81.082</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Institution</th>
<th>Conceptions About Body and Appearance Subscale</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freshmen</td>
<td>Seniors</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>Kenyon</td>
<td>60.947</td>
<td>10.76</td>
<td>19</td>
<td>61.826</td>
</tr>
<tr>
<td>OSU</td>
<td>57.586</td>
<td>8.77</td>
<td>41</td>
<td>63.269</td>
</tr>
<tr>
<td>Total</td>
<td>58.650</td>
<td>9.48</td>
<td>60</td>
<td>62.592</td>
</tr>
</tbody>
</table>
The results of the third Erwin subscale, Conceptions About Body and Appearance, indicated that Ohio State seniors again had the highest mean score (63.269) among groups assessed. Additionally, Kenyon students as a group had a higher mean score (61.429) than Ohio State students (59.791).

To further investigate the group data from the Erwin Identity Scale both multivariate and univariate analyses of variance were computed (Table 20). The effect Institution by Class was found to be nonsignificant (Pillia's V = .035, p > .05). Likewise, the effects Class (Pillia's V = .046, p > .05) and Institution (Pillia's V = .071, p > .05) were also found to be nonsignificant. These analyses would suggest that significant differences between Kenyon and Ohio State students and freshmen and seniors are not present on the Erwin Identity Scale.

Results of the Mines-Jensen Interpersonal Relationship Inventory

The overall results from the administration of the Mines-Jensen Interpersonal Relationship Inventory (M-JIRI) are reported in this section. As stated in greater detail elsewhere in this research, the M-JIRI purports to assess psychosocial development in "college-aged" individuals on the variable of Freeing Interpersonal Relationships as postulated by Chickering. This instrument involves assessing students on two subscales--Tolerance and Quality of
### TABLE 20

Analysis of Variance for Erwin Identity Scale Scores by Class and Institution

<table>
<thead>
<tr>
<th>Source</th>
<th>Multivariate</th>
<th>Univariate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank F Pillia's V</td>
<td>df F</td>
</tr>
<tr>
<td>Institution</td>
<td>3 2.606 .971</td>
<td>1 1.320</td>
</tr>
<tr>
<td>Confidence</td>
<td></td>
<td>1 1.808</td>
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<tr>
<td>Sexual Identity</td>
<td></td>
<td>1 .245</td>
</tr>
<tr>
<td>Conception of Body</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td>3 1.648 .046</td>
<td>1 5.014</td>
</tr>
<tr>
<td>Confidence</td>
<td></td>
<td>1 2.370</td>
</tr>
<tr>
<td>Sexual Identity</td>
<td></td>
<td>1 2.871</td>
</tr>
<tr>
<td>Conception of Body</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institution by Class</td>
<td>3 1.241 .035</td>
<td>1 .052</td>
</tr>
<tr>
<td>Confidence</td>
<td></td>
<td>1 1.842</td>
</tr>
<tr>
<td>Sexual Identity</td>
<td></td>
<td>1 1.539</td>
</tr>
<tr>
<td>Conception of Body</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>103</td>
<td>105</td>
</tr>
<tr>
<td>Confidence</td>
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<td>105</td>
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<td>Sexual Identity</td>
<td></td>
<td>105</td>
</tr>
<tr>
<td>Conception of Body</td>
<td></td>
<td>105</td>
</tr>
</tbody>
</table>
# TABLE 21

Mean and Standard Deviation Scores for Mines-Jensen Interpersonal Relationship Inventory by Class and Institution

<table>
<thead>
<tr>
<th>Institution</th>
<th>Class</th>
<th>Tolerance Subscale</th>
<th>Total</th>
<th>Quality of Relationships Subscale</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Freshmen</td>
<td>Seniors</td>
<td></td>
<td>Freshmen</td>
<td>Seniors</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Kenyon</td>
<td>59.895</td>
<td>3.87</td>
<td>19</td>
<td>61.261</td>
<td>4.01</td>
</tr>
<tr>
<td>OSU</td>
<td>56.049</td>
<td>7.42</td>
<td>41</td>
<td>61.308</td>
<td>4.71</td>
</tr>
<tr>
<td>TOTAL</td>
<td>57.267</td>
<td>6.72</td>
<td>60</td>
<td>61.286</td>
<td>4.35</td>
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<tr>
<td>Kenyon</td>
<td>69.579</td>
<td>6.83</td>
<td>19</td>
<td>72.260</td>
<td>6.13</td>
</tr>
<tr>
<td>OSU</td>
<td>67.976</td>
<td>6.70</td>
<td>41</td>
<td>70.038</td>
<td>7.11</td>
</tr>
<tr>
<td>TOTAL</td>
<td>68.483</td>
<td>6.72</td>
<td>60</td>
<td>71.082</td>
<td>6.70</td>
</tr>
</tbody>
</table>
Relationships. Outcomes provide answers to parts of Hypotheses 2, 3 and 4.

Descriptive data on the M-JIRI are reported in Table 21. On the Tolerance subscale, the highest group mean score was achieved by Ohio State seniors (61.308). This mean was only slightly higher than the 61.261 scored by Kenyon seniors. Kenyon freshmen (59.895) had a mean score over three points higher than Ohio State freshmen (56.649). The 5.259 difference between Ohio State freshmen and seniors is particularly noteworthy when compared to the 1.366 difference between Kenyon class means. This would seem to suggest a relatively high level of advancement between the freshman and senior years at Ohio State and a significantly lower level of change between freshman and senior years at Kenyon.

The Quality of Relationships subscale, also reported in Table 21, suggests that Kenyon seniors (72.260) have achieved greater levels of trust, independence, and individuality than their freshman counterparts (69.579) or seniors (70.038) and freshmen (67.976) at Ohio State based upon group mean scores. As a group, Kenyon students (71.048) had a higher mean than Ohio State students (68.776). Additionally, seniors in general (69.651) had a higher mean than freshmen (68.483).
### TABLE 22

Analysis of Variance for Mines-Jensen Interpersonal Relationships Inventory by Class and Institution

<table>
<thead>
<tr>
<th>Source</th>
<th>Multivariate</th>
<th>Univariate</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Institution</td>
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<td>1.789</td>
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<tr>
<td>Tolerance</td>
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<tr>
<td>Quality of Relationships</td>
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<td></td>
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<tr>
<td>Class</td>
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<td>4.550</td>
</tr>
<tr>
<td>Tolerance</td>
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<td></td>
</tr>
<tr>
<td>Quality of Relationships</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institution by Class</td>
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<td>1.873</td>
</tr>
<tr>
<td>Tolerance</td>
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<td></td>
</tr>
<tr>
<td>Quality of Relationships</td>
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<td></td>
</tr>
<tr>
<td>Residual</td>
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<tr>
<td>Quality of Relationships</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05
Multivariate and univariate analyses on the M-JIRI are reported in Table 22. The Institution by Class effect was nonsignificant (Pillia's $V = .035$, $p > .05$).

The univariate analysis of the Tolerance subscale within the Class effect was significant, $F(1,105) = 8.578$, $p < .05$. The multivariate analysis for the Class effect was found to be significant (Pillia's $V = .080$, $p < .05$).

To further substantiate the significance noted in the Class effect a discriminant analysis was done. The results are reported in Table 23. The structural coefficient of .966 suggests that the Tolerance subscale has the nearly perfect ability to discriminate between freshmen and seniors. This data implies that one could determine with a high level of accuracy whether a subject were a freshman or senior based upon the score that he/she achieved on the

Table 23

Discriminant Analysis for the Effect-Class Mines-Jensen Interpersonal Relationship Inventory

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Discriminant Function</th>
<th>Structural Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolerance</td>
<td>.868</td>
<td>.966</td>
</tr>
<tr>
<td>Quality of Relationships</td>
<td>.276</td>
<td>.585</td>
</tr>
</tbody>
</table>
M-JIRI Tolerance subscale. A higher score would indicate the subject is likely to be a senior. A lower score would suggest a freshman. The Quality of Relationships subscale has a structural coefficient of .585. This implies that the subscale has a diminished ability to discriminate between freshmen and seniors in comparison to the Tolerance subscale.

The Institution effect was not found to be significant (Pillia's V = .033, p > .05). Institutional membership cannot be determined with assurance based upon the scores obtained from this administration of the M-JIRI.

**Comparison of Results from the Barratt Developing Purposes Inventory**

A summary of results from the administration of the Barrett Developing Purposes Inventory (DPI) provides additional answers to a portion of Hypotheses 2, 3 and 4. Specifically addressed are the differences between classes and institutions on the variable of developing purpose as measured by Barrett. The six subscales of the instrument are: Student Behaviors, Professional Behaviors, Career Behaviors, Recreation-Activities, Recreation-Social, and Life Style.

Before reporting the data resultant from the administration of the DPI it should be noted that lower mean scores represent a higher level of achievement or mastery.
### TABLE 24
Mean and Standard Deviation Scores for Barratt Developing Purposes Inventory by Class and Institution

<table>
<thead>
<tr>
<th>Class</th>
<th>Life Style Subscale</th>
<th>Career Behaviors Subscale</th>
<th>Recreation-Social Subscale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freshmen</td>
<td>Seniors</td>
<td>Freshmen</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>Institution</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>Kenyon</td>
<td>26.474</td>
<td>6.58</td>
<td>19</td>
</tr>
<tr>
<td>OSU</td>
<td>24.171</td>
<td>4.85</td>
<td>41</td>
</tr>
<tr>
<td>TOTAL</td>
<td>24.900</td>
<td>5.50</td>
<td>60</td>
</tr>
</tbody>
</table>

### Career Behaviors Subscale

<table>
<thead>
<tr>
<th>Class</th>
<th>Career Behaviors Subscale</th>
<th>Career Behaviors Subscale</th>
<th>Career Behaviors Subscale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freshmen</td>
<td>Seniors</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>Institution</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>OSU</td>
<td>16.293</td>
<td>4.84</td>
<td>41</td>
</tr>
<tr>
<td>TOTAL</td>
<td>17.183</td>
<td>5.41</td>
<td>60</td>
</tr>
</tbody>
</table>

### Recreation-Social Subscale

<table>
<thead>
<tr>
<th>Class</th>
<th>Recreation-Social Subscale</th>
<th>Recreation-Social Subscale</th>
<th>Recreation-Social Subscale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freshmen</td>
<td>Seniors</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>Institution</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>Kenyon</td>
<td>11.421</td>
<td>1.80</td>
<td>19</td>
</tr>
<tr>
<td>OSU</td>
<td>11.195</td>
<td>1.60</td>
<td>41</td>
</tr>
<tr>
<td>TOTAL</td>
<td>11.267</td>
<td>1.66</td>
<td>60</td>
</tr>
</tbody>
</table>
### TABLE 24 (continued)

<table>
<thead>
<tr>
<th>Institution</th>
<th>Freshmen</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>Seniors</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>Total</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenyon</td>
<td>Recreation-Activities Subscale</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>Freshmen</td>
<td>10.842</td>
<td>2.50</td>
<td>19</td>
<td>10.174</td>
<td>2.82</td>
<td>23</td>
<td>10.476</td>
<td>2.67</td>
<td>42</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>11.067</td>
<td>2.36</td>
<td>60</td>
<td>11.204</td>
<td>2.83</td>
<td>49</td>
<td>11.128</td>
<td>2.57</td>
<td>109</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSU</td>
<td>Professional Behaviors Subscale</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>Freshmen</td>
<td>24.474</td>
<td>5.22</td>
<td>19</td>
<td>21.826</td>
<td>4.43</td>
<td>23</td>
<td>23.024</td>
<td>4.93</td>
<td>42</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>24.383</td>
<td>4.82</td>
<td>60</td>
<td>22.224</td>
<td>4.36</td>
<td>49</td>
<td>23.413</td>
<td>4.72</td>
<td>109</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student Behaviors Subscale</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>Freshmen</td>
<td>20.263</td>
<td>5.03</td>
<td>19</td>
<td>19.261</td>
<td>5.24</td>
<td>23</td>
<td>19.714</td>
<td>5.11</td>
<td>42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 24 outlines descriptive data from the DPI administration at Kenyon and Ohio State. Along the Life Style subscale, Kenyon seniors (24.087), Ohio State freshmen (24.171) and Ohio State seniors (24.192) had very similar mean scores. Kenyon freshmen (26.474) reported a lower level of achievement. As groups, Ohio State students, with an aggregate mean of 24.179, reported slightly greater mastery than the 25.167 of Kenyon students. Seniors (24.143) were slightly more advanced than freshmen (24.900).

The most advanced score on the Career Behaviors subscale was achieved by Ohio State seniors (15.000). This would suggest a greater clarity of career decidedness and knowledge than Ohio State freshmen (16.293), Kenyon seniors (18.608), and Kenyon freshmen (19.105). As a group, Ohio State students, with a mean of 15.791, reported a score over three points more advanced than the 18.833 Kenyon mean score. The difference between the senior group mean and freshman group mean was only .489.

Though Ohio State seniors (11.154) had the highest level of achievement on the Recreation-Social subscale, the difference was so slight so as to barely be discernible from the mean scores of the other three groups (11.195, 11.421, 11.478). Ohio State, as a group, had a score of 11.179. This is slightly more advanced than the 11.452 of Kenyon. Freshmen (11.267) had a slightly more advanced score than seniors (11.306).
The scores on the Recreation-Activities subscale reflect the subjects' abilities to meaningfully reduce the number of activities they participate in while at the same time remain open to new recreational ideas. The highest achievement on this subscale was the mean score of 10.174 reported by Kenyon seniors. Kenyon freshmen reported a mean of 10.842. Conversely, Ohio State seniors (12.115) had a lower level of achievement on this subscale than Ohio State freshmen (11.170). From reported mean scores, freshmen appear to be slightly more advanced than seniors. Likewise, Kenyon students seem more advanced than Ohio State students.

The Professional Behaviors subscale reflects a student's attitude and actions toward the coursework in his/her college major or chosen profession. Scoring indicates the Kenyon seniors, with a group mean of 21.826, achieved highest amongst the groups measured. Ohio State seniors (22.577) were only slightly behind. Kenyon and Ohio State freshmen had similar scores, 24.474 and 24.341 respectively.

The last Barratt subscale is Student Behaviors. This scale measures the degree to which the subject has mastered the skills called upon to succeed in college, e.g., study habits, study attitudes, and general perceptions of the faculty and administration. As with three of the previous subscales, Kenyon senior women (19.261) achieved
## TABLE 25

Analysis of Variance for Barratt Developing Purposes Inventory by Class and Institution

<table>
<thead>
<tr>
<th>Source</th>
<th>Multivariate</th>
<th></th>
<th>Univariate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank</td>
<td>F</td>
<td>Pillia's V</td>
<td>df</td>
</tr>
<tr>
<td>Institution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life Style</td>
<td>6</td>
<td>3.893</td>
<td>.189**</td>
<td>1</td>
</tr>
<tr>
<td>Career Behaviors</td>
<td>1</td>
<td>10.325*</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Recreation-Social</td>
<td>1</td>
<td>.637</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Recreation-Activities</td>
<td>1</td>
<td>5.124*</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Professional Behaviors</td>
<td>1</td>
<td>.111</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Student Behaviors</td>
<td>1</td>
<td>.111</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Class</td>
<td></td>
<td>1.282</td>
<td>.071</td>
<td>1</td>
</tr>
<tr>
<td>Life Style</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Career Behaviors</td>
<td>1</td>
<td>.802</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Recreation-Social</td>
<td>1</td>
<td>.001</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Recreation-Activities</td>
<td>1</td>
<td>5.656*</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Professional Behaviors</td>
<td>1</td>
<td>5.656*</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Student Behaviors</td>
<td>1</td>
<td>2.610</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Institution by Class</td>
<td>6</td>
<td>1.017</td>
<td>.058</td>
<td>1</td>
</tr>
<tr>
<td>Life Style</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Career Behaviors</td>
<td>1</td>
<td>.159</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Recreation-Social</td>
<td>1</td>
<td>.020</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Recreation-Activities</td>
<td>1</td>
<td>2.587</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Professional Behaviors</td>
<td>1</td>
<td>2.587</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Student Behaviors</td>
<td>1</td>
<td>2.587</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Residual</td>
<td>100</td>
<td>105</td>
<td>105</td>
<td>105</td>
</tr>
</tbody>
</table>

*p < .05
highest among groups. Similarly, Ohio State senior women lagged only slightly behind. Both freshman groups noted lower levels of achievement than seniors by approximately one and one-half points.

To further investigate the results of the Barratt Developing Purposes Inventory both univariate and multivariate analyses were performed. Both are reported in Table 25. The Institution by Class effect was found to be nonsignificant (Pillia's $V = .058$, $p > .05$). Univariate analysis of the Professional Behaviors subscale within the Class effect noted significance, $F(1,105) = 5.656$, $p < .05$. A multivariate analysis of the Class effect failed to determine significance (Pillia's $V = .071$, $p > .05$).

The main effect--Institution--for the DPI was significant (Pillia's $V = .189$, $p < .05$). Univariate analysis of the Career Behaviors subscale, $F(1,105) = 10.325$, $p < .05$, and the Recreation-Activities subscale, $F(1,105) = 5.124$, $p < .05$, also determined significance.

A discriminant analysis was calculated for the various subscales where significance was noted for the Institution effect. Interpretation of the structural coefficients suggests that the Career Behaviors subscale ($.649)$ and the Recreation-Activities subscale ($-.457$) have the ability to discriminate between Kenyon and Ohio State women.
### TABLE 26
Discriminant Analysis of the Effect-Institution Barratt Developing Purposes Inventory

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Discriminant Function</th>
<th>Structural Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Style</td>
<td>.092</td>
<td>.211</td>
</tr>
<tr>
<td>Career Behaviors</td>
<td>1.040</td>
<td>.649</td>
</tr>
<tr>
<td>Recreation-Social</td>
<td>.118</td>
<td>.161</td>
</tr>
<tr>
<td>Recreation-Activities</td>
<td>-.564</td>
<td>-.457</td>
</tr>
<tr>
<td>Professional Behaviors</td>
<td>-.594</td>
<td>-.067</td>
</tr>
<tr>
<td>Student Behaviors</td>
<td>.091</td>
<td>-.120</td>
</tr>
</tbody>
</table>

Note: Subscales with structural coefficients greater than +/- .45 are considered discriminators.
A subject with a high score on the Career Behaviors subscale would tend to be a Kenyon student. Conversely, a low score would likely indicate an Ohio State student.

The negative structural coefficient on the Recreation-Activities subscale implies that a low score would tend to identify a Kenyon woman. And a high score would suggest an Ohio State student. In reviewing this data, the reader is again reminded that a lower mean score indicates a greater level of mastery of the particular subscale task.

In summary, mean scores on the various Developing Purposes Inventory subscales seem to support Hypotheses 2, 3, and 4. Further tests of significance and discriminant analyses suggest that only on the Professional Behaviors subscale can it be reasonably concluded that seniors have achieved greater levels of mastery than freshmen. These same tests did not support the contention that Kenyon seniors and freshmen have developed more clarity and focus to purposes than their respective Ohio State counterparts.

Summary of Results for the Various Instruments

Due to the fact that this study is based upon seven hypotheses (see page 81) and five instruments, a summation of results in a graphic manner is included for the purpose of clarity.
Figure 7 offers a representation of all means in relation to the previously advanced hypotheses. Examination reveals that there appears to be support for the majority of hypotheses.

Figure 8 presents, based upon the statistical analyses, the specific hypotheses that are supported.
<table>
<thead>
<tr>
<th>Instruments and Subscales</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>CUES</td>
<td>X</td>
</tr>
<tr>
<td>Perry</td>
<td></td>
</tr>
<tr>
<td>EIS-Confidence</td>
<td>X X</td>
</tr>
<tr>
<td>EIS-Sexual Identity</td>
<td>X X</td>
</tr>
<tr>
<td>EIS-Conceptions</td>
<td>X X</td>
</tr>
<tr>
<td>M-JIRI-Tolerance</td>
<td>X X</td>
</tr>
<tr>
<td>M-JIRI-Quality</td>
<td>X X X</td>
</tr>
<tr>
<td>DPI-Life Style</td>
<td>X X</td>
</tr>
<tr>
<td>DPI-Career</td>
<td>X</td>
</tr>
<tr>
<td>DPI-Recreational-Social</td>
<td></td>
</tr>
<tr>
<td>DPI-Recreational-Activities</td>
<td></td>
</tr>
<tr>
<td>DPI-Professional</td>
<td>X X</td>
</tr>
<tr>
<td>DPI-Student</td>
<td>X X X</td>
</tr>
</tbody>
</table>

X indicates hypothesis supported
indicates hypothesis does not apply

**FIGURE 7**
Cell Means Which Support the Hypotheses
### Instruments and Subscales

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUES Perry</td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>EIS-Confidence</td>
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<td>X</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>EIS-Sexual Identity</td>
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<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>EIS-Conceptions</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M-JIRI-Tolerance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M-JIRI-Quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>DPI-Life Style</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>DPI-Career</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPI-Recreational-Social</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPI-Recreational-Activities</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>DPI-Professional</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>DPI-Student</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

X indicates hypothesis supported

indicates hypothesis does not apply

1 supported at Ohio State only

Note: The nature of CUES scores does not lend itself to analysis beyond means.

**FIGURE 8**

Analysis of Variance or Discriminant Analysis Which Support the Hypotheses
CHAPTER V

DISCUSSION OF THE STUDY

The research presented in this work represents an initial step toward providing sound comparative data on the development and environmental perceptions of freshman and senior women at two institutions. It is the product of untold hours of effort on this writer's part as well as the part of numerous other committed professionals.

This chapter is designed to: 1) review the hypotheses, results and conclusions of the research, 2) to discuss the limitations of the study, and 3) to explicate implications for future efforts.

Review of the Results

The seven hypotheses of this study postulated that:

-- Kenyon women would perceive their college environment differently than Ohio State women and that freshmen women would have different perceptions of their environment than senior women.

-- Seniors would have achieved greater mastery of certain psychosocial development tasks and more advanced positions of cognitive development than freshman women.

-- Kenyon women, by class, would have achieved greater mastery of certain psychosocial development tasks and more advanced positions
of cognitive development than Ohio State women, by class.

The section to follow will discuss the major findings of the research and offer explanations for the outcomes.

Discussion of Environmental Perceptions

By administering the College and University Environment Scales it was determined that the four groups perceived their environments somewhat differently. Thus, Hypothesis 1 is supported. An examination of several of the CUES II scales offers potential reasons for the variance.

Ohio State women reported that they perceived their college environment as being "practical." This would seem to suggest an emphasis on how the educational process offers information relevant to success after graduation in professional or personal pursuits. The large scale and high level of complexity inherent in the Ohio State milieu may contribute to this perception.

The fact that freshmen reported more practicality than seniors at the respective institutions would suggest a decrease in one's need to "operate within the system" through time. Additionally it is possible that the four years the seniors have spent at college have assisted them in finding the appropriate routes through the maze of education.
Kenyon College, being a small institution in a rural setting, with a low faculty-to-student ratio, prides itself on the community orientation of the campus. CUES scores on the Community Scale support this contention. Both freshman and senior women reported a strong community atmosphere. The fact that most students are required to live on campus obviously reinforces a sense of togetherness and commonality. Students further reported that faculty members often know them by name and seem to show a genuine interest in them. Conversely, few undergraduates (approximately 30%) reside in campus housing at Ohio State. Group orientation generally exists only in moderate-sized sub-groupings such as social clubs, recreational activities, and ad hoc academic groups. The regular all-campus convocations at Kenyon would be unthinkable at Ohio State. Additionally, in that all students at Kenyon are majoring in the liberal arts, there is a common understanding of academic expectations.

Results of the Awareness Scale indicated that freshmen at both schools noted greater campus emphasis toward self-understanding, creativity, the fine arts, and understanding of the future of mankind than seniors did. Due to the fact that freshmen were surveyed after being at college six months, one must assume that to a degree their responses represent a prediction of what they expect through the remainder of their college tenure. Judging
from the lower senior scores it appears as though their expectations are not accomplished through time. It is also possible that during the first few months after the student leaves the established values and patterns of home, that the bombardment of new people, values, places, ideas, etc., represented on the campus may have the effect of distorting the experiences making them "bigger than life."

For the seniors, conversely, the uncertainty of leaving the campus for the "real world" and all it forbodes may lead to a foreclosing of the unbridled philosophical discussions and searches for meaning of the college years. Rather than expanding their horizons they are searching for a means of controlling the variables of their lives. The "real world" is not always tolerant of questioning, dissent, nonconformity, and personal expression.

Based upon admission criteria and academic standards the variance between Kenyon and Ohio State on the Scholarship Scale was expected. Kenyon freshman women come in expecting scholastic rigor and intellectual stimulation. Kenyon seniors leave college feeling that the prophecy has been fulfilled. Kenyon seniors had a higher score than did freshmen. On the other hand, Ohio State freshman women come in with relatively high scholastic expectations when compared with other General Universities. Ohio State seniors scored significantly lower than freshmen. It would seem that at Ohio State in the Arts and Sciences Curriculum
that an expectation of high academic achievement and scholarship does not exist through time. Some explanation for this phenomenon may be found by comparing the Scholarship and Practicality Scales. For some number of the women sampled it may be difficult to correlate the practical aspects (material benefits, social activities, leadership, enterprise) and scholarly aspects of the college experience.

It is important to note that freshmen women at the respective institutions consistently scored higher than senior women on the several CUES scales. The only exception was in that Kenyon seniors outscored freshmen slightly on the Scholarship Scale. It is logical that expectations are tempered through time with reality. Nonetheless, this factor merits the attention of both Kenyon and Ohio State. It will be discussed in greater detail in a later section of this chapter.

To conclude, the results of the CUES administration indicates that there are differential environmental impacts on students at the respective institutions. Ohio State seems to provide greater practicality and potential for awareness expansion. Kenyon offers an educational community in the classic sense. Additionally Kenyon women feel as though there is an extremely high level of scholarly activity and academic rigor.
Discussion of Cognitive Development Results

Mean score results of the Perry Instrument as reported in Table 17 (page 93) support Hypotheses 5, 6 and 7. Senior women did achieve higher scores (3.13) than did freshman women (2.79). Kenyon freshmen (3.09) and seniors (3.31) achieved higher scores than Ohio State freshmen (2.65) and seniors (2.97) respectively. More robust statistical methods went on to support the fact that there is significant change between the freshman and senior years for this sample group. Intellectual growth does take place at Kenyon and Ohio State.

Kenyon freshman women appear to be beginning their college life at a slightly more advanced point than their Ohio State counterparts. Having developed through four years, that slight advantage continues for Kenyon senior women over Ohio State senior women.

From a qualitative perspective, all four of the groups measured had scores clustered around Perry's Position 3. While "uncertainty" in thinking is acceptable at this Position, it is so only with the understanding that the future promises to bring a clarified and more absolute answer. The higher scores of Kenyon senior women would seem to indicate that they are perceiving alternatives to dualistic thinking as being legitimate.

Perry (1968) implies that as one moves through the college years there may be drastic revolution in reasoning
whereby thinking in absolute terms becomes the exception rather than the norm. For the majority of the senior women in the sample this revolution apparently has not taken place.

Ultimately, while quantitative measurements indicate statistically significant differences in cognitive levels between the freshman and senior years, qualitative analysis vis-a-vis Perry's scheme does not indicate the positional advancement on the part of seniors one might expect after the college experience. An explanation of this phenomenon lies in the very basics of the theory. As a student's mode of reasoning falls into disequilibrium with the domain of the college, an attempt is made to reestablish a static balance. This resolution is accomplished through either accommodation—a new mode of thinking—or assimilation—filtering environmental stimuli to bring them in concert with existing thinking. It would appear as though the latter is taking place. Another explanation for the comparatively modest change in the complexity of reasoning may be found in the level of external stimulation found at the respective campuses. By reviewing Perry Instrument scores of the various subject groups and comparing them with CUES Scale results the issue clarifies. Freshman women perceived the campus environment as facilitating self-understanding, creativity, experimentation, cohesiveness, and friendships more than
senior women. One can infer that neither Kenyon nor Ohio State consistently maintains an atmosphere whereby there is a press upon students to consider transforming their thinking toward more advanced structural levels.

The implications of these results call for proactivity on the parts of Kenyon and Ohio State. They will be explained in a later part of this chapter.

**Discussion of Psychosocial Results**

The results of the environmental and cognitive development portions of this research offered relatively clear answers to the hypotheses. The same is not true of the psychosocial results. The six areas in which an institution can impact on a student's psychosocial growth interact in a relatively complex matrix. The following pages are designed to analyze these components emphasizing those areas germane to the instruments and Kenyon and Ohio State.

Mean scores suggest that senior women have mastered the developmental tasks of establishing identity, freeing of interpersonal relationships, and developing purpose to a level beyond that of freshman women. Additionally, Kenyon freshman women have greater levels of mastery of establishing identity and freeing of interpersonal relationships than Ohio State freshman women. Finally, mean results imply that Kenyon seniors have achieved greater mastery of
freeing interpersonal relationships and developing purpose than their Ohio State counterparts (see Figure 7). Based upon these data it would appear as though Hypotheses 2, 3 and 4 are supported. However, statistical analysis of variance supports only the hypothesis that senior women have achieved a greater level of freeing interpersonal relationships than freshman women, \( F(1,105) = 8.578, p < .05 \). Discriminant analysis indicates that the Tolerance Subscale of the M-JIRI accounts for this ability to differentiate between freshman and senior women.

After a careful analysis of the data, it appears as though there are at least five potential reasons as to why Hypotheses 2, 3 and 4 were not fully supported.

1) The three Iowa Instruments (Erwin Identity Scale, Mines-Jensen Interpersonal Relationships Inventory, and Developing Purposes Inventory) were in the early stages of their development at the time they were administered to Kenyon and Ohio State women. Barratt (1978) and Mines (1978) reported moderate success in assessing development along the respective vectors of Chickering's theory each purports to measure. Erwin (1978) reported no mean subscale score differences between freshman women and senior women. It is possible that these instruments do not measure the vectors they purport to do. Additionally, they may not have the ability to discriminate between various levels of development within each vector.
2) It is possible that Chickering's theory as operationlized by Erwin and Barratt does not fit for the women in the sample groups.

3) Recent investigations by Fannin (1977) and Hodgson and Fisher (1979) indicate that for some women Erikson's intimacy stage precedes identity formation. Chickering's construct of freeing interpersonal relationships is derived from the Eriksonian intimacy stage. This may account for the finding in this study that resolution of the task of freeing interpersonal relationships seems to have preceded the formation of a sound sense of self and the charting of a purposeful course in one's life.

4) The sample of women who participated in this study, though scientifically drawn, may not represent the populations at Kenyon and Ohio State.

5) The impacts of the environments at the respective institutions may be "pressing" on students in such a manner so as to make the observation of psychosocial development difficult. An overview of Chickering's six "Conditions for Impact: as they relate to the two institutions offers clarification.

Kenyon College clearly articulates its goals and objectives for existence to students before they arrive on campus and continues to reinforce them through time. Students regularly evaluate their reasons for being there. Kenyon still holds to many of the religious principles
which led to its conception. The objectives at Kenyon would seem to offer positive impact to students along the vectors of identity, integrity, and purpose.

The objectives of the College of Arts and Sciences at Ohio State appear much more nebulous than those at Kenyon. The numerous majors and curricula offer a diversity which may overwhelm students. Additionally, the College serves as a repository for "undecided" students. The interaction of widely-defined institutional objectives and unclear individual student objectives does not seem to positively influence development. The possible exception may be in the development of autonomy.

The most dramatic and observable difference between Kenyon and Ohio State is size. Chickering (1969, p. 185) suggests that small size is a necessary prerequisite for clarity of purpose. The smallness of Kenyon seems to provide the opportunities so useful to development. A greater percentage of the students at Kenyon can participate in theatre, varsity swimming, student governance, or debate, for example, than at Ohio State. Chickering hypothesizes that smaller institutional settings tend to foster development of identity and freeing of interpersonal relationships.

By reviewing student perceptions of classes at Kenyon and Ohio State, differences and similarities are
apparent. freshmen at ohio state are generally instructed in large groupings by teaching associates (graduate students) or junior faculty. Kenyon freshmen, seniors, and ohio state seniors usually have classes in smaller sections professed by senior faculty members. Students, through CUES responses, reported that the smaller class settings allowed for greater discussion and sharing of personal perspectives. The later milieu seems to foster development of identity and freeing of interpersonal relationships. The former, through its impersonalness and view of the teacher as the "expounding authority" tends to truncate the developmental processes.

As noted earlier, Kenyon is a residential campus. Only students who are married or whose families live in close proximity to the college are exempted from living in residence halls. Halls at Kenyon are divided into small "houses" accommodating a moderate number of residents. At Ohio State, only freshmen are required to live in the residence halls. Given the scarcity of land on the campus, the majority of residents live in highrise halls housing from 450 to 1920 students. The large numbers of residents and comparative lack of public gathering areas in the halls operate against a sense of belonging, ownership, and community.

Housing at Kenyon tends to support development of a sense of identity and freeing of interpersonal
relationships. Residence halls at Ohio State appear to allow for too much "challenge" and too little "support" to fully maximize the potential for development. As a result, the majority of students move into alternative housing during the junior and senior years. These alternatives include: Greek letter houses, apartments, and rooming houses.

At both institutions, freshman women have little choice as to the residence hall they live in. Generally, they are assigned based upon space-available after upper-classpersons have made their selections.

An overview of differential housing arrangements suggests that Kenyon residence halls provide more potential for development of identity and freeing interpersonal relationships than those at Ohio State. However, both schools seem to place a relatively low priority on maximizing the potential of campus housing as an integral part of the process of psychosocial development. If faculty members and senior administrators see the residential aspects of campus life as a custodial enterprise that is a necessary evil, the potential of development will go unfulfilled.

Chickering (1969, p. 252) outlines four conditions which promote a sound relationship between faculty members and students—accessibility, authenticity, knowledge, and the ability to talk with students. By analyzing the various
instruments in this study, an overview of students' perceptions and their relationship to development was derived.

Kenyon women, in summary, reported that faculty members were accessible to them on a regular basis. Besides spending time in the classroom, they reported meeting with faculty before and after class, during office hours, in residence halls, in dining commons, and in faculty homes. Ohio State women noted that their involvement with faculty was limited to the classroom and office hours. The opportunity for informal dialogue has obvious potential for student development. As faculty members are rewarded not only for their intellect, abilities to generate knowledge, and research, but also for their competence in teaching--using that term in its broadest definition--the likelihood of maximizing the college experience is attained.

Seniors at both institutions and freshmen at Kenyon indicated that they perceived faculty members as being very knowledgeable in their subject matter. Ohio State freshman women noted a somewhat diminished confidence in their instructors' grasp of the subject matter. This observation seems to reflect a lack of satisfaction with large sessions and graduate teaching associates. I am not certain as to whether Ohio State freshman women know what to expect of teachers. Perhaps they were led to believe that they would
have regular contact with senior professors in small group settings. One might conclude that relegating freshmen to their own corner of campus and "batch-processing" them is a disservice to both students and teachers. It appears to filter relevant development of identity and purpose.

Chickering (1969, p. 253) states, "A student's most important teacher is another student." While I do not fully support this statement, the impact other students have on one's development is important. Roommates, classmates, clubs, teams, and organic groupings all contribute to potential development. At Kenyon, the student culture is made up of a fairly narrow group as compared to Ohio State. Kenyon students come from families of reasonable means, tend not to be first-generation college students, and are comparatively similar in their political orientation. Ohio State women are much more diverse. This diversity seems to act as a developmental agent. Views and ideas are regularly challenged. These re-examinations serve to develop identity, freeing of interpersonal relationships and purpose.

As one takes a step back and looks at the interaction of Chickering's six areas of impact and their relationships to Kenyon and Ohio State, a clear statement about one institutional milieu providing more potential for development than another is not prudent. Kenyon's clear goals and objectives, modest scale, housing units designed
to maximize group interaction, and smaller class configurations serve to offer the nutrients for development. Ohio State's diverse student population, well-rounded faculty, and broad curriculum do likewise.

As such, these attributes which Chickering implies attract and detract from psychosocial task mastery potentially neutralize one another when studying them comparatively. It is my conclusion that quantitative and qualitative development is taking place at Kenyon and Ohio State. Ultimately, the true test of this statement is whether there is goodness of fit between the institution and each student. Is each student challenged and supported in a manner which stimulates growth and development? Are the various impact areas intentionally designed to stimulate growth? Or are they designed to grease the assembly line of higher education? Further discussion of these questions will take place in a later portion of this chapter.

Limitations

Though earnest efforts were made to maximize the effectiveness of this research, potential limitations are present and merit notations. The constraints of time and resources necessitated the cross-sectional design of this study. As noted in Chapter III, ideally a longitudinal design with women being measured as they began college and again upon graduation would be preferable.
By assessing subjects in Winter and Spring 1980, a portion of the impact of the freshman or senior years respectively was eliminated. Instead of assessing four college years in reality only three were measured.

At the time that students were asked to respond to the instruments in the study there were 739 freshman women at Ohio State enrolled in the Arts and Sciences Curriculum. Of that number, 137 were invited to participate. Forty-one actually completed and returned the instruments. This number accounts for 5.5% of the population. While scientific sampling techniques were employed, the small percentage of respondents in this group may limit the full meaningfulness of results for this group. Kenyon freshmen (11.3%), Kenyon seniors (16.8%), and Ohio State seniors (15.0%) all had response rates well within the acceptable range.

While Kenyon College and The Ohio State University may be representative of two types of institutions of higher learning, it would be an inappropriate leap to generalize the results beyond the two schools. This caveat also implies, though with less emphasis, to generalizing beyond the particular classes assessed. Additionally, given the diversity of Ohio State, sampling of students in curricular areas other than Arts and Sciences would add to the impact of the results. Perhaps students in the Arts
and Sciences are not representative of Ohio State undergraduate women as a whole.

A final possible limitation concerns the lack of full scale norming of the Iowa Instruments. In order to increase the confidence of the results of this study, further tests of validity and reliability on appropriate groups should be considered. While Mines, Barratt, and Erwin all noted reasonable validity and reliability on their respective instruments, their data were drawn from geographically and chronologically narrow ranges with comparatively small norm groups.

**Implications**

It is a satisfying feeling to come to this point in reporting the results of the several years of work on this study and genuinely believe that there are implications to them. The implications cluster into three categories: Means whereby Kenyon and Ohio State may alter environmental perceptions and influence development, Issues for student personnel professionals, and Suggestions for future inquiry. The following section will outline the categories and, often as not, ask questions rather than hypothesize solutions.

**Institutional Implications**

Are the results of the College and University Environment Scales indicative of what Kenyon and Ohio State
faculty and administrators want students to think about their colleges? Generally, it appears as though women students felt their campus environment met their needs. Responses fell within national ranges for most scales at the respective institutions. Kenyon prides itself on its scholastic rigor and strong community orientation. Women students shared the perception. Ohio State—a land grant institution—strives to serve the diverse needs of many in an effective and efficient way. Students accept, though begrudgingly, some inherent impersonalness. They seem pleased with the opportunities to expand their horizons through broad course offerings, diversity in students, and specialization of faculty members. One should not be lulled into complacency by the high satisfaction levels. There are areas which merit examination at both institutions. An immediate and striking issue is in the fact that freshman women consistently reported higher perceptions on the CUES Scales than senior women. Further examination of this phenomenon has implications for: recruitment, admissions, curriculum development, housing arrangements, student behavior, grading, attrition, and teaching, to name a representative grouping. For example, Ohio State senior women have a much lower perception of the scholastic rigor of the Arts and Sciences Curriculum than freshman women. More finite investigation might show cause for this phenomenon. Potential answers may be: poor teaching, lack
of privacy in the dorm, inability to find studymates, or uncertainty about course relevance to future career goals. Once the cause or causes are noted, the college can program planfully to bring about change and bring the perceptions of seniors in line with the expectations of freshmen.

Are women at Kenyon and Ohio State challenged and supported in the milieu in a way which maximizes development? In that this question asks for a definitive response, the answer is probably "no." There are points both schools could address to increase individual development through time. It is possible that cognitive development could be fostered by providing more "bite-sized" challenges to students on a regular basis. In reviewing specific essay responses from the Perry Instrument it was clear that "best classes" were those that had an interested instructor, were in a seminar format, and where students felt that learning was more important than grades. Again we are back to the issue of "batch processing." It seems as though the more means are initiated to deal with students in small groups or as individuals, the greater the likelihood that they will develop to their potentials. This issue also extends beyond the classroom. Residence halls, for example, can foster development through having "houses" with from 10 to 30 residents. In this way students can be exposed to diverse ideas and attitudes in a way that can be controlled. Larger groupings may lead to a retreat from the challenge.
Also, with moderate-sized housing, more students will have the opportunity to become involved with student governance. Growthful challenges are likely outcomes.

If indeed Kenyon and Ohio State exist to prepare students for the challenges of adult life and to be contributing members of society, then concerted efforts should be undertaken in the academic milieu to assist students in charting a course or developing a purpose to their lives. This process could extend from basic values clarification seminars, to career planning programs, and placement services. On a broader level, deliberate psychological education as an integral part of curricular and extra-curricular programs could go far in helping students to develop complex reasoning abilities in complex content areas.

While the basic unit of accomplishing the task of higher education seems to be either one-to-one or in small groups, it is incumbent on the institution to provide a unified, deliberate program whereby faculty members and administrators are held accountable for meeting students' developmental needs. This could undoubtedly be done in a manner which would not infringe on academic freedom and creativity.

Kenyon College and The Ohio State University are two very different institutions of higher education. They serve students with different ideas as to what college
ought to be. Life on campus at Kenyon revolves around activities within the confines of the College. Ohio State, on the other hand, is much more diverse according to students' perceptions. To say that both institutions should lockstep and maximize student development in the same manner would be an error. Ultimately, the task of each is to provide the optimal combinations of support and challenge within their respective communities to meet student needs. Without a committed effort to accomplish these goals, the effort will potentially fall short.

**Implications for Student Personnel Professionals**

How a student makes meaning out of the college experience is a function not only of classroom activities: but, also, activities outside of the classroom. The student personnel professional often is the force that integrates these two aspects. The challenge of helping students to span the boundary is a significant one.

The information gathered in this study suggests a number of ways student personnel workers can be impactful in helping women students develop.

At Kenyon, the data suggests programs to assist students in expanding their awareness of themselves, other students, and the greater society. Issues meriting attention might include: women's health, sex roles, career choices, racial, ethnic, and cultural understanding, environmental concerns, political discussions and
governmental affairs. In that some Kenyon women failed to see the relevance of their education to future worldly pursuits, it would seem to be appropriate to deliberately bridge activities of the classroom with vocational plans.

The strong scholastic expectations at Kenyon have the potential of raising levels of competition amongst students. Student personnel professionals can provide vehicles to balance this competition with greater cooperation and collaboration. This could be done through study groups in residence halls, intramurals emphasizing teamness, and programs designed to build self-concept. Through experiences such as these it is likely that women students at Kenyon will grow to potential both intellectually and psychosocially.

The data collected suggests that student personnel workers can be most impactful on college women at Ohio State by bringing the scale of the institution down to a more reasonable size. Both freshman and senior women scored lower on the CUES Community Scale than Kenyon women. By designing programs to house students in moderate-sized units, increase self-governance, involve students and faculty members outside of the classroom, and generally increase each student's "ownership" of the University the potential for a supportive developmental environment exists. The Ohio State University with its massize size, diverse faculty, large residence halls, and impersonal classrooms
offers an extensive challenge for each student. How staff members balance this "challenge" with appropriate amounts of "support" will have significant impact on growth and student development.

Student personnel professionals at both institutions could profit from reviewing the goals and objectives of their respective divisions. The women in this study clearly indicated that: housing arrangements, student culture, physical activities, the expense of education, potential for self-governance, belonging to groups, and their physical and mental well being had major impact on their college experience. In some cases this impact was positive and growth producing. In others it appeared to be more of a barrier or hinderance to development. Both Kenyon and Ohio State would do well to ask the question: "Is this institution providing the best possible opportunities for each student to grow intellectually, psychosocially, and physically?" The solution to this question will be answered by students, faculty members, student personnel workers, and society in due time.

Often administrators, in general, and student personnel workers, specifically, suffer from a self-imposed inferiority complex when comparing their profession to faculty members. Sometimes they see themselves as doing those college tasks which the faculty does not want to do. This research suggests that academic pursuits and activities
on campus outside the classroom must be vulcanized in a productive, planful manner in order to provide the maximum potential for student growth. The need to work together is inarguable.

**Suggestions for Future Inquiry**

The information collected, analyzed, and discussed in this study has provided a number of answers about the perceptions and development of freshman and senior women at Kenyon College and in the College of Arts and Sciences at Ohio State. While the work is extensive, there are several ways that future investigations could serve to reinforce the findings or expand their utility.

A replication of the study measuring students longitudinally could eliminate extraneous variables. For a patient investigator this could provide very scientific data. For faculty members and student personnel workers it could offer opportunities for deliberate interventions to enhance student development.

While the women in this study were being measured, a tandem investigation of freshman and senior men at Ohio State and Kenyon was taking place. A logical "next step" would be to compare the findings of these studies. Similarities and differences in perceptions of environments, intellectual development, and psychosocial task mastery could provide useful information upon which to
design environments, programs, or experiences for men and/or women students.

Kenyon and Ohio State are two very different institutions. Seldom are they studied in relation to one another. More often Kenyon is compared with the likes of Ohio Wesleyan University, Otterbein College, or Oberlin. Ohio State is often compared or measured against other Big Ten institutions or other state schools within Ohio.

Using the categories of institutions described by Pace (1969) it would be useful to compare General Universities to General Universities and Selective Liberal Arts Colleges to Selective Liberal Arts Colleges. That is not to say that the "apples to oranges" comparison of this investigation does not merit consideration.

The instruments utilized in this study were chosen as representatives of the theoretical constructs they purport to measure (Pace, 1969; Knefelkamp, 1974; Widick, 1975; Barratt, 1978; Erwin, 1978; Mines, 1978). The CUES instrument provides information based solely on student perceptions. Future studies might include data of a more behavioral nature (Walsh, 1973). Using this technique greater specificity and differentiation of environment-specific information may be possible.

Recent revisions in the Student Development Task Inventory (Winston, Miller, and Prince, 1979) offer alternative means of measuring psychosocial development.
While the SDTI-2 has eliminated some of the concerns associated with its previous form, caution is still called for in its utilization. However, when compared to the Iowa Instruments as a group, the SDTI-2 measures up nicely.

The Perry Instrument (Knefelkamp, 1974; Widick, 1975) is a sound means of measuring cognitive intellectual levels in young adults. Its utility is limited, however, due to the fact that it takes for 15 to 30 minutes per instrument to be rated. The ratings are done by at least two qualified raters. For this study alone, it took over one hundred hours to obtain results. A new instrument, of a more objective format, which would validly and reliably measure cognitive levels along Perry's theory, is called for.

Concluding Remarks

Individuals in our society seem to spend a lot of energy measuring themselves against others. Politicians and government officials make a case for increased expenditures for defense by saying that we are "behind" the Soviet Union. The "Joneses" are used as a yardstick of success or lack thereof. As soon as the professor passes back the examination, eyes unobtrusively scan from paper to paper in an attempt to make out the red letter on the top of the page. There seems to be a need to be "better." Or at very least, not be "worse."
While this research was designed to draw comparisons between freshman and senior women at Kenyon College and The Ohio State University, it was not done so to determine if one group or institution was better than another. The results indicate the several groups do perceive their college environments differently, are at different levels of cognitive development, and are at different points in mastering psychosocial tasks. Potential reasons for the differences have been explicated and programs Kenyon and Ohio State might use in making alterations, if they choose to do so, have been noted. If the respective institutions opt to make alterations in the campus milieu to maximize the potential for individual development, then the purpose of the study will truly have been served.
PLEASE NOTE:

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

These consist of pages:

144-147
149-153
155-158
160-163
165-170
APPENDIX F

BUDGET

The following represent projected costs for the project described in this proposal:

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
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<tr>
<td>Travel (10 round trips to Kenyon College 120 miles at 17¢ mile)</td>
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<tr>
<td>Postage (700 letters at 15¢ each)</td>
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<tr>
<td>Stationary/Envelopes</td>
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<tr>
<td>Instruments (330 of each)</td>
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</tr>
<tr>
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<td>$39.60</td>
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<tr>
<td>DPI (12¢ each)</td>
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<tr>
<td>CUES</td>
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</tr>
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<td>Instrument Rating and Scoring (330 of each)</td>
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<tr>
<td>Perry (15 min. each at $6/hr.)</td>
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</tr>
<tr>
<td>EIS (6¢ each)</td>
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<tr>
<td>MJIRI</td>
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<tr>
<td>DPI</td>
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<td><strong>TOTAL</strong></td>
<td><strong>$1730.19</strong></td>
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</table>
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,

[Signature]

Thomas J. Edwards
Dean of Students
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 P. Rodgers, a faculty member in Student Personnel and Psychology at Ohio State. He is also the Director of the Student Personnel Assistant Program. John Heideke and Donald Ozahan 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 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.
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 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
147 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, 53 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 Cmahan 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>Room (3rd floor, off Main Lobby), 1900 Cannon Drive</td>
<td>May 15, 1980</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>
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<tr>
<td>1739 N. High Street</td>
<td></td>
<td></td>
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<tr>
<td>Sawyer Student Center</td>
<td>Sunday</td>
<td>Noon to 5 p.m.</td>
</tr>
<tr>
<td>15 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. Onsham

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
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 SCRN JR SR
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: ____________________________

__________________________ Date: __/__/____

Signed: __________________________

Print Name: __________________________

Phone: __________________________ Year (Circle One): FR SOPH JR SR
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 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.

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
February 23, 1980

FROM: Don Omahan

TO: Kenyon 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 Kenyon 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 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!!
February 25, 1980

FROM: John Heidke

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

RE: SPECIAL REQUEST

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!!
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 cannot 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
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:

<table>
<thead>
<tr>
<th>SURVEY SITE</th>
<th>DAY</th>
<th>TIMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morrill Tower Browsing</td>
<td>Thursday</td>
<td>3 p.m. to 8 p.m.</td>
</tr>
<tr>
<td>Room (3rd floor, off Main Lobby), 1900 Cannon Drive</td>
<td>May 15, 1980</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>35 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 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
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. Omanan
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
APPENDIX J

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

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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.
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 K

Rationale for Assessment and Analysis

Throughout the process of this investigation, the researchers have 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. Such an approach, however, would offer little or no comparison between different types of higher education milieu, 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 of 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 freshmen and senior classes and between
their respective types of institutions, representatives of Kenyon College and Ohio State had expressed an interest in a separate analysis of the data for men and women students. In a more general sense, 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 issue of cognitive and psychosocial development of women at different types of education institutions (Marcia and Friedman, 1970). In addition to the nature of the research problem, two other factors 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 Robert F. Rodgers, Ph.D., an authority in the area of student development, the researchers determined to pursue the final option - a separate analysis of data for men and women. That is not to say that other approaches at data analysis are not relevant or important; however, for the reasons cited above, the approach chosen seemed most appropriate at this time given our research goals and design.
BIBLIOGRAPHY


King, P. M. *The Iowa Student Development Project.* Iowa City, Iowa: 1978.


