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SUPERIOR WOMEN COLLEGE STUDENTS; A STUDY OF THEIR SELF CONCEPTS AND ACADEMIC MOTIVATION.  
FINAL REPORT.

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To identify the traits that distinguish academically successful college women from those of average attainment, researchers measured the scores and scales recorded by 286 women in the Colleges of Agriculture, Education, and Liberal Arts and Sciences at the University of Illinois, Urbana. The components measured were: grade point average (GPA), achievement level, self concept, environment, motivation, attitude, and faculty-student relations. Data were computer analyzed. High achievers (those having a GPA of 4.0 or higher; 5.0=A) were found to be self confident, independent, purposive, had rapport with faculty, and seemed to possess broad socio-cultural awareness. The average group (those having a GPA of 3.3 through 3.8) focused mainly on the social dimensions and pleasures found in the non-intellectual aspects of university life. Environmental factors appear to have the greatest influence on academic achievement. If the college climate is viewed as intellectually stimulating and congruent with personal goals, then it is more likely that effort will be expended to achieve academic success. To create a more supportive academic environment, the university needs to have more background information on its students than it now does. (Author/JS).

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**Final Report**

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**Wilber D. Simmons**

**University of Illinois**

**Urbana, Illinois**

**May 1968**

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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Bureau of Research**

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## CHAPTER I

### THE PROBLEM

#### Introduction

The purpose of this study is to delineate trait patterns that may distinguish academically successful college women from those of average academic attainment. Changes in contemporary life are developing new forces that affect all areas of our social structure. One result is that the role of women in our society is needing and getting more attention. This has been brought about by shortages in manpower, a wider acceptance of women as intellectual equals in many professional areas, a growing militancy among women to be heard and accorded their rightful respect according to their skills, the growing lack of distinction between jobs that only men or that only women can do, and legislation forbidding discrimination because of sex as to job positions and salary. All of these elements, among others, have contributed to the increasing importance of women in fulfilling roles that extend beyond the traditional ones of wife, mother, and homemaker.

If manpower needs are to be met on a qualitative basis we must consider the better development and utilization of talents among our female population. That there are opportunities for highly trained women is well documented in the U. S. Department of Labor's report that as of March, 1965, 72% of the women with five years of college or more were employed.

This points to a trend that women are assuming more responsible roles in our energized society. There will be more combining of marriages and careers. Perhaps there will even be a greater emergence of single

career women who won't be cast as "unusual" because they have found fulfillment in their profession rather than in marriage. As Mueller (1966, p. 115) points out:

It is no more sufficient for a woman to be only a wife and mother than for a man to be only a husband and father. To be a fully developed personality means entering into the ongoing life of the world.

There is a great deal written about the education of women, even though some statistics show only about seven percent of our female population attain college degrees (Farber and Wilson, 1966). This small segment represents a concentration of talent that deserves considerable attention. Studies are needed that will furnish more comprehensive data on the needs, aspirations and perceptions of college women. If the college setting is a bank of talent, then it behooves us to look at the assets in that bank and see how they are being utilized. Within the college setting we have available a human laboratory of women students that can provide a rich array of information and commentary on the opportunities for growth and self-satisfaction for women in the college environment.

### Review of Related Literature

#### 1. Introduction

The college setting is a unique social entity. To provide background, the review of literature section will attempt to define some of the dynamics of the college structure and the characteristics of the students who have to operate in that setting. The review will cover these areas:

College Women: in relation to characteristics, ability and achievement, self concept, and motivation.

College Environment: in terms of intellectual vs. non-intellectual forces, and the influence of faculty and peers.

Summary: a commentary on the present information on women in higher education.

Since this study deals with both average and superior students, it might be well to establish the definition of superior student. While there are many definitions for superior or gifted, over 100 according to Abraham (1958), we will designate the superior student as one who has a high degree of academic success. Such high achievement is denoted at the Urbana campus of the University of Illinois for students who have attained a grade point average (GPA) of 4.0 or higher (5.0 = A) - (University of Illinois Bulletin: "Opportunities for Superior Undergraduate Students"). The terms academically superior student, high achiever, and academically talented will be used interchangeably in this study.

## 2. College Women

A young woman undoubtedly approaches the college gateway with mixed emotions. The ensuing experiences in college may be of little value in helping her establish an adequate role definition. For most of this young lady's life, her family, peers, and significant others have been overtly and covertly conditioning her toward marriage and motherhood. In college she is told to make use of her intellect and talent in fulfilling an obligation to society. Such a situation can easily cause a young woman "to wonder whether intellectuality and sex role are not in direct conflict" (Brown, 1962).

Because of mushrooming enrollments and the numbers of young women in higher education, ways must be found to develop a better understanding

of the college woman, her needs, and the patterns that describe her as a unique individual. Mueller (1966, p. 124) in writing about college women, pointed out:

we must provide for a MASSIVE ATTACK, an attack commensurate with (1) the tremendous number of cli s, (2) the depth of the individual woman's need, (3) the significance of a well-educated, well-rounded woman for our way of life and our general culture, (4) the importance to our gross national product, and (5) the profound ignorance of the public--students, parents, faculty, and administrators.

The Massive Attack ... will require only that women study one additional subject--themselves. This study will have two main divisions: (1) the social aspects, and (2) the individual, or physiological and psychological aspects. ... The study of woman as an individual must include sex differences--intellectual, physical, glandular, motivation, sexual, even actuarial.

Mueller's charge is a complicated and demanding one. Will universities be able to muster the money and personnel to carry out such a responsibility? It seems rather remote at present. Another catalyst, such as Sputnik, emerging from the struggle for world and spatial supremacy might well force society's agent, the educational system, to embark on this Massive Attack.

#### a. Characteristics of Women College Students

Characteristics of college students have frequently been described in terms of studies utilizing "pet experimental measures" that lack substance and validity. Other studies have frequently ascribed traits to the college population without necessarily identifying the contributions of either the men or the women in the study to the strength of such traits. The frame of reference for such studies needs to be more detailed if we are to utilize the results in a meaningful way. Intellectual, social, emotional, and attitudinal characteristics are the products of previous experiences, background, and the unique abilities of the person. Such

experiences and abilities contribute to the traits Jacob (1957) noted for college students as being self-confident, self-satisfied, and self-centered. Previous experiences would also be reflected in Chickering's (1966) findings who noted patterns of intellectualism, social interests, practical orientation and conservatism in the college sample studied.

Lacking in most characteristic studies have been adequate distinctions between college men and women. Nor for that matter have there been any distinctions made between talented men and women who have not pursued a college career. It is quite possible that intellectually productive men and women without college experience may be equally strong in the things as noted above by Jacob and Chickering.

When we look at characteristics of superior students, differences unique to one sex tend to disappear. Men and women of high intellect tend to be similar. The differences that have been noted for women seem to fall mainly in aesthetic and social sensitivity dimensions.

Arrays of listings could be presented describing the significant (according to their authors) characteristics of superior students. In the main, such students seem to:

be sensitive	be responsive to social pressures
be self confident	have original responses to environment
be effective	be tolerant of ambiguity
be resourceful	possess high potential for creativity
be independent	be intellectually oriented
be highly motivated	be well adjusted, personally and socially
be ambitious	
be systematic	possess a sense of inquiry
	have definite, educational plans

(D'Heurele, et al., 1959; Warren and Heist, 1960; Mason, 1965).

In a study of honors students (Simmons, 1966) women were found to be higher than men on scales relating to:

work habits  
 social relations with teachers  
 ideational fluency (productive ideas)  
 ability to evaluate rationally

Weir (1966), reporting on features of honors programs, stated:

women who had participated in honors programs tended to be more conventional, conforming, and cautious than their male counterparts; though better grade-getters, women honors students felt less adequate in their field than the male honors students.

Brown (1962) in his report on the Vassar Alumnae Study has commented that high achieving women seem to have high ratings on:

orientation to professional role  
 internalization of faculty ideology and values  
 capacity  
 college performance

The high achieving college woman seems to be capable, diligent, productive, objective, and intellectually oriented (Brown, 1962; Weir, 1966; Simmons, 1966; Freedman, 1961). However, she also has moments of anxiety and the need for motivational support (Ross, 1963; Brown, 1962; Mitterling, 1964; Weir, 1966; Cashdan and Welsh, 1966). She also displays stronger heterosexual interests than men (Cashdan and Welsh, 1966).

In comparison with a superior male student, the high achieving or superior woman student displays more aesthetic and religious strengths (Tyler, 1963; Warren and Heist, 1960; Heist, 1961; Simmons, 1966). She has more interest in theoretical-intellectual activities (Heist, 1961; Mason 1965), and displays more flexibility in her thinking and actions (Dressel and Lehman, 1965; Seagoe, 1958; Mason, 1965). The superior woman student is more intrinsically motivated (Sattler, 1965), has her goals in mind (Sattler, 1965; Seagoe, 1958; Heist, 1963), and displays better work habits (Simmons, 1966).

Day (1962) points out that social pressures are such that "the vast majority of young men would not marry women of superior intelligence." This negative reaction to the display of intellectualism from women is shared by a great many elements of our society. As such, it inhibits many talented women from effectively using much of their productive capabilities. To provide motivational bases and the energy for self-renewal, superior women need the personal support of interested faculty and empathic counselors. In the study of the top one percent of women students at Michigan State, Ross (1963) noted that:

after the security needs are met, there must be people to give recognition and approval before the individual is free for self-actualization.

The cited studies indicate that the characteristic profiles of superior women are similar to those indicated for superior men students. The question is whether we have an adequate profile of an academically successful woman student and the factors contributing to her success in college.

#### b. Ability and Achievement

Ability reflects the individual's power to perform an act or to exhibit what he can do (Drever, 1952; McClelland et al., 1958). Ability assessment, for college purposes, has largely consisted of analysis of grades and the scores attained on tests of verbal and quantitative skills. The predictive value of such assessment is suspect, however, for as Ashman (1962) points out college grades are only moderately related to achievement test scores.

Evidence has been available for some time that mental ability is an expansive force, not automatically delimited by age or educational level.

Measuring advanced mental abilities in college students is beyond the scope of most of our testing instruments (Webster, et al., 1962). The use of previous grades and skill scores becomes the best source of data presently available.

Studies of achievement measures as predictors of college success have found such measures inadequate. Demos and Weijola (1966) found:

the high school recommending units, as opposed to the often used ACT composite scores, are better predictors of success in special honors programs and the success of high ability students in the general college curriculum.

Roberts (1965) found that college grades and achievement test scores were relatively independent variables with the exception of a high correlation between grades and scientific achievement. Payne, Davidson, and Sloan (1966) found that the best predictors of college grades were final marks in high school and vocabulary skills; in addition, they found that abilities that seem to be related to success in college seem to change during the student's years of college attendance.

We need more study on the abilities used by successful college students. Attitudes, interests, motivation, personality, values--all of these factors affect ability and how the individual uses it to achieve or not to achieve (McConnell and Heist, 1962). Hall (1966) summarizes all of this effectively when he states: Sixty-five to 75 percent of the behavior related to academic outcomes remains unidentified if one uses only the presently available ability and achievement measures to predict such a criterion of educational success. ... much of what is now unaccounted for in these criteria of academic progress is related to non-intellective, biographical, attitudinal, and motivational factors which may be distinct from intellectual ability per se.

### c. Self Concept

The area of self concept seemingly relates to almost every dimension of personality and environment. The self concept is the core area in the phenomenological construction of the individual. "Combs and Syngg (1959) define it as: "the symbol" or generalization of self which aids in perceiving and dealing with self." The self develops out of social definition of the individual's relationship to the world about him. As other people important in his life define and evaluate the person, so will that person come to define and evaluate himself. According to Jahoda (1958), the more confident the individual becomes of himself the more he will seek contacts and interaction with other persons and things.

The self concept is not static. If healthy, it is open and receptive to new people, new experiences, the everchanging challenges of contemporary life, and to the stimulation of intellectual pursuits. The self concept must grow. According to Freedman (1962) such growth is related to:

changes in intellectual abilities and in thinking;  
changes in opinions, beliefs, and values; changes  
in what is often called character; and changes in  
internal psychological processes...

For most students the changes occur early in the college sequence with the majority taking place during the first year (Webster, et al., 1962).

Nixon (1966) points out the aims of growth for the college student:

To see himself objectively and realistically, to  
see his setting critically and without distortion,  
and to find a way to live his life so that it is  
relevant to both these views.

This is an excellent operational description of a healthy self concept.

The self concept is the control center in the personality structure of the individual. As such it is imperative that an individual have the means to enhance his self concept and to develop better self-understanding.

As was noted previously in the call for a "Massive Attack" on the problems of educating women espoused by Mueller (1966), development of techniques for teaching better self-understanding needs critical attention. Combs and Snygg (1959) state:

the goal of all behavior is the achievement of personal adequacy. The search for the maintenance and enhancement of self is never ending. It is a dynamic, active search, a continuous striving to become the ultimate of which one is capable.

To expect people to autonomously move ahead in order to gain the most from their college training and experiences means they must have confidence in themselves and a sense of personal adequacy. Lack in these areas will seriously limit the student's chances for success and the effective use of her talents.

#### d. Motivation

The term motivation covers a complex array of psychological phenomena. To define it adequately for all users is most difficult. Drever (1952) uses this definition: "motivation: term employed generally for the phenomena involved in the operation of incentives or drives." Madsen (1959) defined motivation this way: "Motivation = all variables which arouse, sustain, and direct behavior." For the purposes of this study, academic motivation relates to the individual's desire to learn and expand his or her knowledge.

Motivation is characterized by direction and intensity (Dressel, 1961) and consists of two types, intrinsic and extrinsic (Hilgard and Russell, 1950). The learning process may be better stimulated by intrinsic motivation, for academic motivation can serve as a link between the learner's experience and the new materials to be learned. Direction implies that learning is goal-directed, while intensity indicates the importance

of the goal to the learner. Perseverance to succeed is directly related to the strength of these characteristics--direction and intensity. Without a sense of direction and without a sense of understanding as to the value of particular segments of his educational program, the individual student is not likely to be motivated to forge ahead in his educational pursuits. Learning has to take on personal meaning for students. This is very important for women students since they seem to be more socially and academically oriented than most men. Other outlets for satisfaction may take on more meaning if their attempts at learning are too frustrating for them to persevere. The lack of academic motivation is probably one of the main reasons for the high attrition rate in colleges (Summerskill, 1962).

Dressel (1961) suggested that some of the problems of learning are related to motivational concepts.

The recognition and acceptance of a problem or goal implies that the learner desires to solve the problem or attain the goal. The extent or depth of his desire determines his motivation.

It is not realistic for institutions to hide behind the screen that nothing can be done with students if they aren't intrinsically motivated.

Thistlethwaite (1962) found in his study that:

students exposed to some educational treatments can be shown to have raised their degree aspirations more than comparable students exposed to other educational treatments.

Academic motivation develops from the broad base of achievement motive, a concept of motivational theory developed by McClelland (1953) and others. Atkinson (1966) points out that achievement motivation is related to the need to avoid failure and the desire to attain success in some activity. The value of the activity to the individual will influence the amount of effort and persistence put forth.

The dual demands on talented women in trying to achieve intellectual as well as social satisfaction in college and career and later in marriage and career create some real personal problems. The intellectual pursuit may be exacting too high a price on the woman and she may drop out of academic activities in favor of the less demanding and socially satisfying marriage route (Heist, 1963). Inclination to persevere has been thwarted.

Heist (1963) in discussing college women said that many were lacking in serious academic and intellectual motivation. This seems directly attributable to social pressures with the many years of family, peer, and neighborhood forces conditioning young women. Although much of the incentive for a woman to attend college today may be because of better prospects in finding a suitable husband, the college coed is a minority group within her contemporary female population. She has had to possess sufficient motivational drive to make her want to become a member of the college structure and cope with its pressures and adjust to its environment. The high attrition rates in college are agonizing evidence of young people failing to adequately cope, adjust and move ahead. In considering the achievement motive, however, we need to maintain a broad perspective. As McClelland (1953) states:

We should not lose sight of the fact that the achievement motive never develops or functions in a vacuum. It is but one aspect of a complex personality structure and only case studies of individuals can begin to yield the total picture.

In discussing motivation, Carmical (1965) points out: " the self concept and goal aspiration have strongly influenced the level of aspiration and degree of achievement...."

A serious limitation of much of the research on motivation has been the problem of fitting the concepts into the total personality structure. That there is a need for a broader, more holistic approach to motivational theory has been noted by Atkinson (1964) in his appeal for tying together the forces of the environment, personality differences, and the influences of previous experiences on each individual.

Along the same lines Frymier and Thompson (1965) conclude that academic motivation is a function of personality structure, goals and values, conception of self and others, plus attitude toward change. They also suggest that since such aspects of human behavior are learned they are then subject to modification.

### 3. College Environment

George Stern and Robert Pace in their work as a team and as individuals have done the majority of the development, research and writing on the measures used in the study of educational environments. Stern, out of his work in personality assessment, developed the College Characteristics Index (CCI), a measure of college environmental factors. Recently, Pace has developed his own measure called the College University Environment Scales (CUES), based on the same format as the CCI. The majority of the published research on college environments is based on these measures.

Bloom (1964) defines environment as:

the conditions, forces, and external stimuli which impinge upon the individual. These may be physical, social, as well as intellectual forces and conditions. ...the environment is a shaping and reinforcing force which acts on the individual.

As Stern, et al., (1956) points out: "In the exchange between individual

and environment, both give to each other, and both are affected and to some degree altered by the exchange." In this exchange the elements originating within the individual have been called needs, and the forces from external origins have been labeled press (Murray, 1938).

The complexities of this interaction between needs and press are heightened when we consider that press may be "a composite of what appears to be objectively present, as well as what the individual feels subjectively to be significant" (Stern, et al., 1956).

a. Environmental Components

Pace (1961) pointed to two major factors in the college environment--intellectual and social. These correspond to Stern's designations of intellectual and non-intellectual climates. Pace asserts that the intellectual factor ranges from abstract, theoretical, scholarly understanding to practical, status-oriented concerns. The social dimension factor goes from a stress on group welfare to a rebellion against group life. In comparing the college environment to a system in tension, Pace states:

Some of its pieces may work partly, but not totally, against others. More of its pieces may build upon others in a cumulative influence. The sum of its acts create a shape or pattern which defines the character of the environment. The vitality of this character probably arises from the stress within the system and between the system and the students.

Pace (1963) has suggested that there are three primary components making up the college environment. These are the Administrative, the Academic, and the Student Communities, each of which possesses unique characteristics. When these components are congruent, they can stimulate positive valences in the environmental setting. McConnell and Heist (1962) postulated that:

the efficacy of a college is the product of the fortunate conjunction of student characteristics and expectations, and the demands, sanctions and opportunities of the college environment and its subcultures.

This study, and others (Brown, 1962; Pace, 1961, 1962; Fishman, 1962; and Stern, 1962, 1963) point out the possibility of either matching the individual to the college environment or rearranging the college environment to better meet individual needs. This last possibility has the most potential impact in future higher education programs.

#### b. Faculty

Faculty members represent significant elements in the college structure. Their impact, positive and negative, on students covers a wide range. That so little research has been done on faculty influence may be due in part to a reluctance on the part of professional persons to expose their practices for study and assessment. Professional status, however, should not be used as a shield to hide a lack of educational expertise. As Sanford (1962) notes: "Very little is known about the influence of college teacher's characteristics upon student's learning and development." This lack of knowledge about teacher effectiveness is a bit disturbing when we consider that this higher education period is the culmination of education for most individuals.

Influencing students would be limited to the amount of opportunity available to the faculty. According to Sanford (1962) this would be dependent on:

- faculty student ratio--
- amount of accent on teaching--
- size of the institution--
- the amount of sanction for sports and other cocurricular activities

As might be expected, high ability in students is admired by college faculty. However, they seem to prefer to finding it among the more traditionally disposed students who are self-sufficient, pleasant, and purposeful in action. As Brown (1962) puts it:

faculty see "ideal students" as having a higher degree of intellectual power which is directed toward objects of intellectual interest in an independent manner and disciplines along integrative, penetrating, and analytic lines.

Brown further points out the need to consider the development of the whole person, however, and not focus all attention on academia.

### c. Student Culture

College men and women and their student culture seem to be taking on new significance in higher education discussions. The events at Berkeley, with some smaller scale replications around the country, have placed college administrations on the alert to the quest for power emanating from student groups. These groups' demands to be heard, the desire to have a stronger voice in decision making on student matters, and the growing schism between the traditional college practices and current student feelings--all contribute to the changes that are affecting the student culture.

In writing about student culture, Bay (1962) defines it as: "the profusion of beliefs and attitudes that emerges and endures for a while with an impact on the social system of all students."

From the student culture the individual can usually draw some support to justify the direction of his drives, whether they are intellectually, socially or otherwise oriented. According to Hughes, et al., (1962), incongruency as to educational objectives between faculty and students will find the latter group supported by the student culture:

Student culture is thus the cornerstone of many faculty difficulties with students; one of the facts of life to which teachers must, in their turn, make some accommodation.

How much accommodation can take place is dependent on the role demands and pressures the teachers are faced with--the latitude for accommodation may be very limited.

The subcultures, the peer groups, are the main contributors to the prevailing dynamics of the student culture. Overlapping areas of peer groups structures cloud their functions and impact. In his major field a student may have educational allegiance to one group, while socially he may be oriented to another group, such as the fraternity or sorority. Clark and Trow (1960) among others, have classified students into four major types of subculture, known as the collegiate, vocational, and academic and nonconformist cultures. They state:

we can distinguish four broad patterns of orientation toward college which give content and meaning to the informal relations of students. When these patterns of orientation define patterns of behavior sentiment and relationships we can usefully think of them as subcultures.

Newcomb (1962) suggests that these academic and collegiate groups are strongly identified with their college while little identification is displayed by the non-conformist and vocational groups. On the other hand the academic and non-conformist groups are much involved with ideas and the collegiate and vocational groups are not.

Peer groups are usually structured on the basis of pre-college acquaintance, propinquity, and the similarity of attitudes and interests. The size of the group, its homogeneity, isolation, and the importance to individuals of attitudes that are group supported seem to be the main forces that peer groups use to influence their members (Newcomb, 1962).

#### 4. Summary

The college woman seems to possess as much capability and potential for academic success as the college man. She limits herself because of her seeming indifference to her intellectual power. This is brought about by the traditional sex role conditioning, she has undergone all of her life. Her flares of ambition to exercise her intellect can be quickly extinguished by her peers and the male-oriented structure of a large university unless she has sufficient drive and strength to persevere toward her intellectual goals. It is easier to retreat into the social milieu and concentrate on finding a husband.

Superior women students are characterized by many of the same elements ascribed to superior men students. A profile of the superior woman student would be likely to show that she is self-actualized, ambitious, purposive, intellectually inquisitive, responsive to social conditions, successful in academic and social endeavors, and possesses a healthy and flexible self concept. However, the superior woman student is not immune from problems of adjustment, personality and pressure. She does seem equipped to cope with her problems and to profit from her experience, using them as stepping stones to new attainments.

The superior woman student is confronted by the dilemma of how much of her intellectual prowess she can display if she is interested in marriage. Undoubtedly talent development is limited by this problem if the woman chooses to hide her intellect in order to find a man.

Measures of ability of college students has been largely ineffective because of inadequate instruments. There is also a singular lack of knowledge as to what abilities are needed and employed by successful college students.

Measures of general achievement have used verbal and numerical skills as the main components. Tests of such skills have been quite weak in forecasting whether students will succeed in college work.

Much of the literature focusing on the self concept points to it as the control center of the individual's behavior (Combs and Snygg, 1959). Everything (except the physical) that the individual has experienced or is experiencing affects the self concept. The perceptions of these experiences either enhance or degrade the self concept of the individual. The self concept, with its base in phenomenological theory, can provide some substantive guidelines for educational programs if colleges would make better attempts to assess some of the forces that help or hinder student development. Adjustment to college life could be better facilitated if more attention could be given to students as individuals. Expediency must be linked to effective college programs for the individual.

The self concept of women is also affected by their ambivalent status. While they build up one self-image they feel that others, especially men, perceive them differently. This disparity in perceptions is directly attributable to prevailing social conditions that are not yet too tolerant toward women who are career, or career and marriage, oriented.

Motivation studies have developed some interesting theories but the results tend to be confusing. Trying to determine the value of intrinsic motivation and the impact of extrinsic forces in helping the student attain academic success is most difficult. The dimensions of motivation must be related to the personality structure and the environment the individual perceives himself to be in.

Identifying and evaluating the components of the college environment is as complex as doing it for any other entity in the society structure. While the college seems to be, in the main, divided simply into three

components--administrative, faculty, and students--the interaction of these components and their various subcomponents is complex and elusive. Most of the research has been based on student reactions and perceptions.

We do have evidence about the orientations of various types of colleges. Presumably, faculty members with similar orientations tend to gravitate there, or perpetuate the existing order of things if already on the staff.

A similar comment might be made about students who enroll at certain institutions because the focus is compatible with value systems they possess. This social orientation can be applied to various student sub-cultures as well.

#### Conclusion

Much of the literature points to the need for better understanding of the roles and needs of college women. Personality assessments, self-reports on perceptions, reactions and attitudes, appraisal of individual educational programs, inventories on the abilities and strategies that have to be used to function effectively--all of these are important in developing better understanding of the woman college student, both for herself and the college. When we reach that utopian plateau that allows each student to function as effectively as she can and to exercise her talents optimally, then we might consider the college program for women to be adequate. Much work and study remains to be done if such a plateau is to be reached.

### Problem

In looking at successful college women in terms of academic standards it is necessary to consider the phenomenological field. To look at the self concept and the motivation it energizes is interesting. To look at the perceptual reactions of the individual is descriptive. To survey the environmental factors that may be operative in given situations is informative. But the real significance lies in the interaction of these three forces. The interaction effects condition the total personality of the individual. To consider only isolated bits in any one area is meaningless if we are really concerned with the total pattern that brings academic success to one woman and holds down the attainments of another.

Phenomenological theory provides a base for the consideration of the differential patterns descriptive of college women.

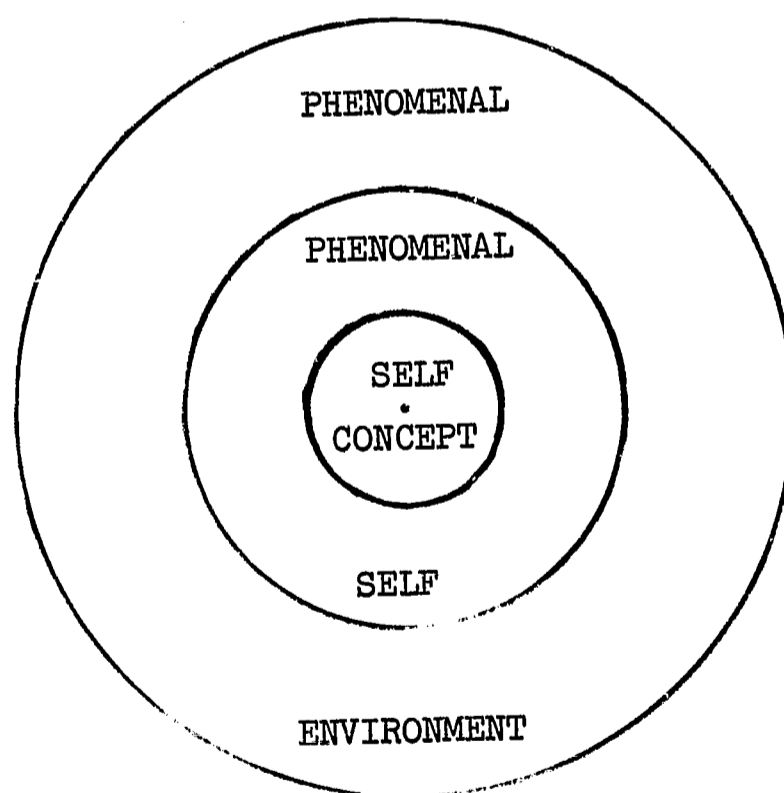


FIGURE 1

SELF CONCEPT DIAGRAM

The diagram in Figure 1, as developed by Combs and Snygg (1959), portrays the main elements of phenomenological theory. The self concept is an organization which is the individual's own private conception of himself in all his complexity. The phenomenal self is formed by the perceptions of the self a person has at a particular instant. The phenomenal environment includes all of a person's perceptions, including those about himself and those about things quite outside himself.

Central to the theme of phenomenological theory, as espoused by Adler, Horney, Lecky, Maslow, Rogers, and others (see Combs and Snygg, 1959), was the stress on the self concept's role in determining the individual's behavior. The self concept was seen as the center around which experiences are integrated into the uniqueness of the individual (Jersild, 1952). Phenomenology examines all of the factors that impinge on the individual from her internal and external frames of reference. With its holistic orientation it offers a rich theoretical base for personality research.

The model in Figure 1, however, is not adequate for considering the interaction dynamics that affect the individual in the college setting. The college structure is a unique social system. The individual coed brings an unique experiential background to interact with that social system. We need to be studying as many elements as possible in each dimension, i.e., the college environment and the individual, in order to assess their importance and their impact on one another as they interact.

The diagram in Figure 2 provides a conceptual scheme for this approach. The student's progress along her collegiate pathway is influenced strongly by what she brings to the situation--her self

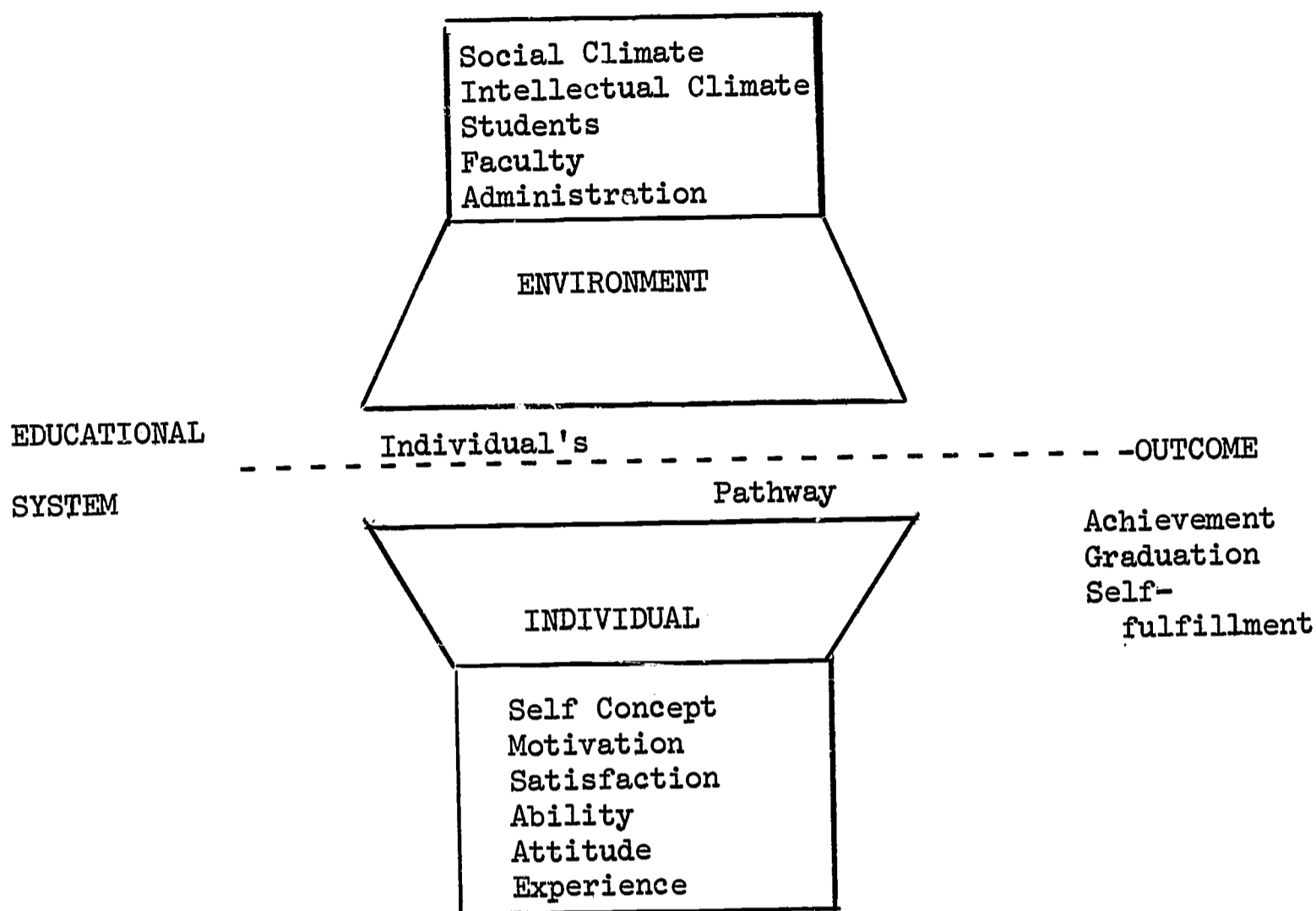


FIGURE 2

## STUDENT AND ENVIRONMENT DIAGRAM

concept, her motivational forces, her abilities and attitudes, her social and family background, and the totality of her experiences to date. In essence, these provide her the base strengths to cope with college demands and to achieve success, personally and academically. On the other side we have the environmental factors of the college setting--administrative edicts, relations with faculty and peers, the prevailing strengths of the academic and social climates in this setting, and the assorted traditions that seem to need perpetuation.

The attempt in this study is to look at the main elements in the college woman's life, assess their strengths as far as possible, and determine if there is a pattern that seems representative of the

academically successful woman. The major components to be considered have been established as grade point average, achievement level, self concept, environmental perceptions, motivation forces, relationship of faculty and students, attitudes, and satisfaction with college role. These areas cover a good range of the phenomenological field. With these elements as a base, we can now formulate a series of questions to pursue in this study that will serve as guidelines in our explorations. With such a frame of reference the results can be interpreted on a more meaningful basis. The questions proposed for this study and the means to answer them are as follows:

QUESTIONS	MEANS TO ANSWER
1. Do academically superior women have a more positive self concept than average achieving women students?	(ACL) Self concept measure
2. Are the needs of academically superior women more outwardly directed than inwardly directed?	(ACL) Need scales on self concept measure
3. Will high achieving women be more influenced by the intellectual climate of the university than average women?	(CCI) Environment measure-- Intellectual Factors
4. Are high achievers more immune to the social forces in the university than the average achievers?	(CCI) Environment measure-- Non-intellectual Factors
5. Do academically superior women students operate on a higher motivational level than average achievers?	Motivation inventory
6. Do academically talented women respond more favorably to the faculty than average women students?	Faculty-student relations
7. Are high achieving women more independent than women of the average group?	College Student Questionnaire

- |  |  |
|--|--|
| 8. Do high achieving women students find more satisfaction in the college structure than their average peers?      | College Student Questionnaire                                |
| 9. Are the goals of the high achieving woman student greater in the academic dimensions than the average achiever? | College Student Questionnaire                                |
| 10. Are study habits stronger among academically superior woman than academically average woman?                   | College Student Questionnaire                                |
| 11. Do high achievers exhibit more awareness of social and cultural areas than average achievers?                  | College Student Questionnaire                                |
| 12. Are there unique difference, characterizing women students by college areas?                                   | Analysis of Variance between college groups on all variables |

These questions will be answered from the study results which will be presented in Chapter III.

## CHAPTER II

## PROCEDURE

## Subjects

This chapter contains a description of the subjects in this study, 286 women students enrolled during the fall semester, 1966-67, at the Urbana campus of the University of Illinois. The selection criteria for the subjects were as follows:

1. High achievers with a grade point average of 4.0 or higher (5.0 = A) (upper ten percent range of their college)
2. Average achievers with a grade point average range of 3.3 through 3.8 (middle ten percent range of their college)
3. Members of either the junior or senior classes
4. Enrollees in the curricula areas of --

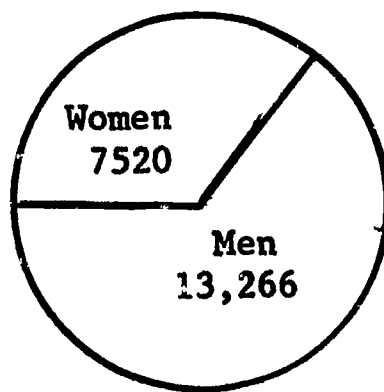
Agriculture:	Home Economics
	Vocational Home Economics Education
Education:	Elementary Education
LAS:	Sciences and Letters
	English

These curricula areas were selected for the study because of the concentration of women students. Figure 3 shows the enrollment distributions.

Grade point average (GPA) was the main selection criterion for potential participants in the study. Since limits had to be specified for grade points in the selection program, 4.0 and above was established as being the best approximation across the three colleges of the top ten percent range of all of their students, men and women. In similar fashion grade points of 3.3 - 3.8 inclusive were established for the middle ten percent range. Student selection had to be done in this manner because of the program method used to store data on the computer tapes. The

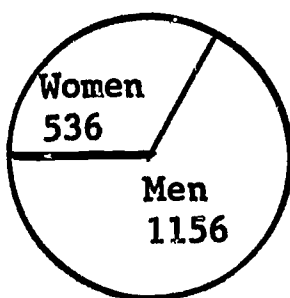
**FIGURE 3**  
**UNIVERSITY POPULATION**

**1. TOTAL UNDERGRADUATE ENROLLMENT**  
**(Urbana Campus)**

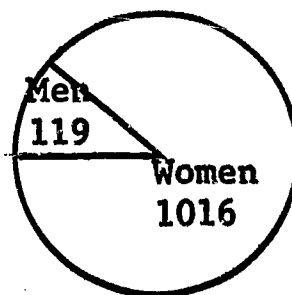


**2. COLLEGE ENROLLMENTS**

**Agriculture**



**Education**



**LAS**

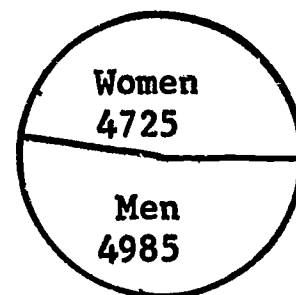
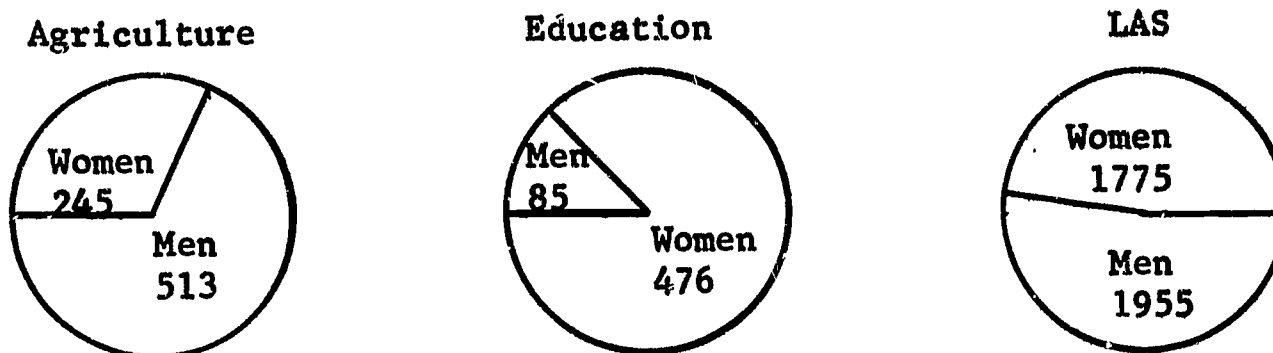
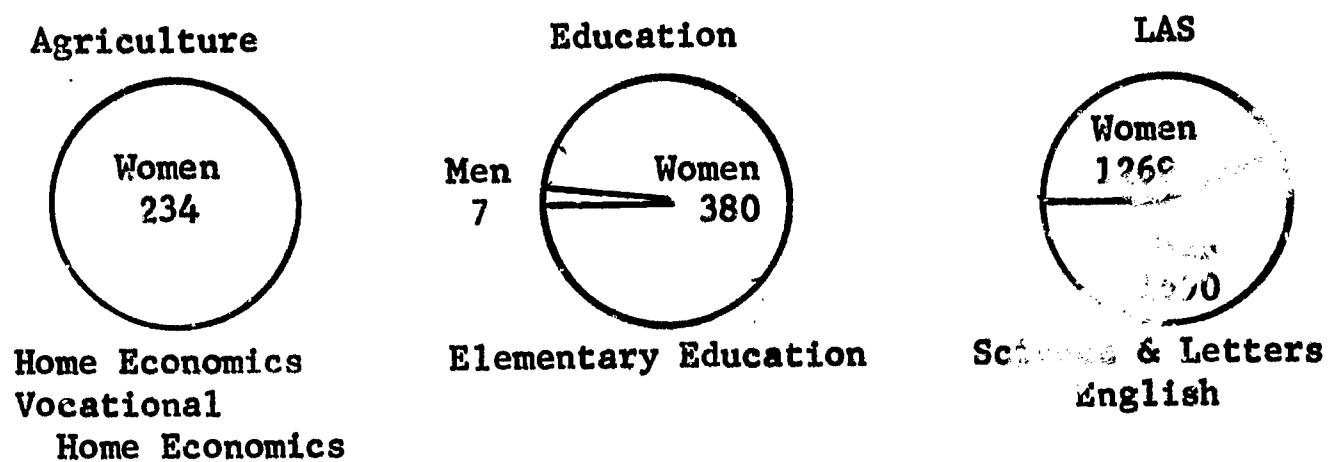


FIGURE 3 (continued)

## 3. SENIOR - JUNIOR COLLEGE ENROLLMENTS



## 4. SAMPLE CURRICULA AREAS (SENIORS - JUNIORS)



number of women that qualified under this procedure and the percentage of women they represented in the three colleges are shown in Table 1. Since this total was too large for the study it was decided to randomly select 370 names from the array. This would be close to a ten percent representation for each of the high and average achieving categories in each of the three colleges.

After establishing the selection criteria and obtaining the names of potential candidates, 701 invitations were sent out. Included in the invitational materials were the following:

A letter from the Dean of Women endorsing the study and encouraging the recipients to take part.

A letter of study purpose from the principal investigator which included information about testing.

The rationale for the study was given in the invitational letters.

As stated in the letter from the Dean of Women, the study:

"will help us in advancing our knowledge of women students as to their perceptions of the college environment, their role as students, and their interests in the academic and social life of the campus."

The principal investigator's letter pointed out that attention needed to be given to: "the woman college student and her attitudes and reactions toward her life and activities on the college campus." A set of these materials is included in Appendix A, p. 129.

Envelopes were prepared and invitational letters and materials were ready for distribution.

Three hundred sixty-seven letters of invitation were mailed out on November 18, 1966, for tests scheduled from December 5 through December 8, 1966. One hundred seventy-four women responded (47.4% of those invited) and took the test battery. Since it was felt that 174 was an

TABLE 1  
SELECTION OF STUDY SAMPLE

	College Women Students							
	<u>Agriculture</u>		<u>Education</u>		<u>LAS</u>		<u>Totals</u>	
1. Junior-Senior Women in Selected Curricula (1)	234		380		1269		1883	
2. Potential Sample of Women Identified (2)	98	% (3) 41.9%	232	% (3) 61.1%	389	% (3) 30.7%	719	% (3) 38.2%
3. Final Study Sample	43	18.4%	70	18.4%	173	13.6%	286	15.2%
4. Sample by Achievement Groups								
I (High)	12	5.1%	28	7.4%	88	6.9%	128	6.8%
II (Average)	31	13.2%	42	11.1%	85	8.4%	158	8.4%

- 
- (1) Agriculture: Home Economics and Vocational Home Economics Education  
Education : Elementary Education  
LAS : Sciences and Letters, and English
- (2) Sample represents the approximate top 10% GPA range (4.0 and above) and approximate middle 10% GPA range (3.3 - 3.8) of all Juniors-Seniors (men and women) enrolled in colleges represented in sample.
- (3) Percentage of total Junior-Senior women in selected curricula.

inadequate number for the purposes of this study, an additional 334 letters were mailed on December 3, 1966, inviting participation in measurement sessions on December 19-20, 1966, and January 4-5, 1967. The second series of measurements added 112 women for a response of 33.5% to the second invitation. From the total of 701 invitations mailed out, 286 students elected to participate, a response of 40.8%. While there is no indication of any selective factor effects in the final sample, this is not ruled out as a potential limitation of this study. All students receiving invitations had been advised that a fee of \$5.00 would be paid to each participant for taking the measurement battery.

It was anticipated that a larger number of participants would take part in this study. During the first testing period a number of the women commented that it was a heavy week for them with hourly exams and a number of campus events. The weather was also bad on two of the four evenings in the first testing period. The second round was split into sessions before and after the year-end school vacations. All of these factors--busy schedules, bad weather, and vacation interruption--probably kept the participation down.

The Statistical Service Unit of the University of Illinois aided in identifying prospects that met the selection criteria. The Unit set up a computer program that would select students in the respective college and curricula areas that were in the two GPA ranges specified. The output of this program gave us:

1. Social security numbers
2. Name of the prospective student
3. College curriculum and major field
4. Accumulated hours of university credit
5. Grade point average (GPA)
6. An indicator of whether the student took an admissions test
7. An indicator if the student was a James Scholar (Honors Program)

8. Marital status
9. Date of birth
10. High school rank
11. Local address
12. Local telephone number

In looking at achievement there were GPA's for all subjects, plus achievement test scores for over 70% of the sample. The distribution of GPA's among the subjects in the study reveals that 45% were in Group I, the high achievers, while 55% were in Group II, the average achievers. Included in the achievement tests taken by most of these women as entering freshmen were:

ACT -- American College Testing Program

English	Natural Sciences
Mathematics	Social Sciences
Composite Score	

SCAT -- School College and Ability Tests

Verbal  
Quantitative  
Total

MATH -- University of Illinois Screening Test

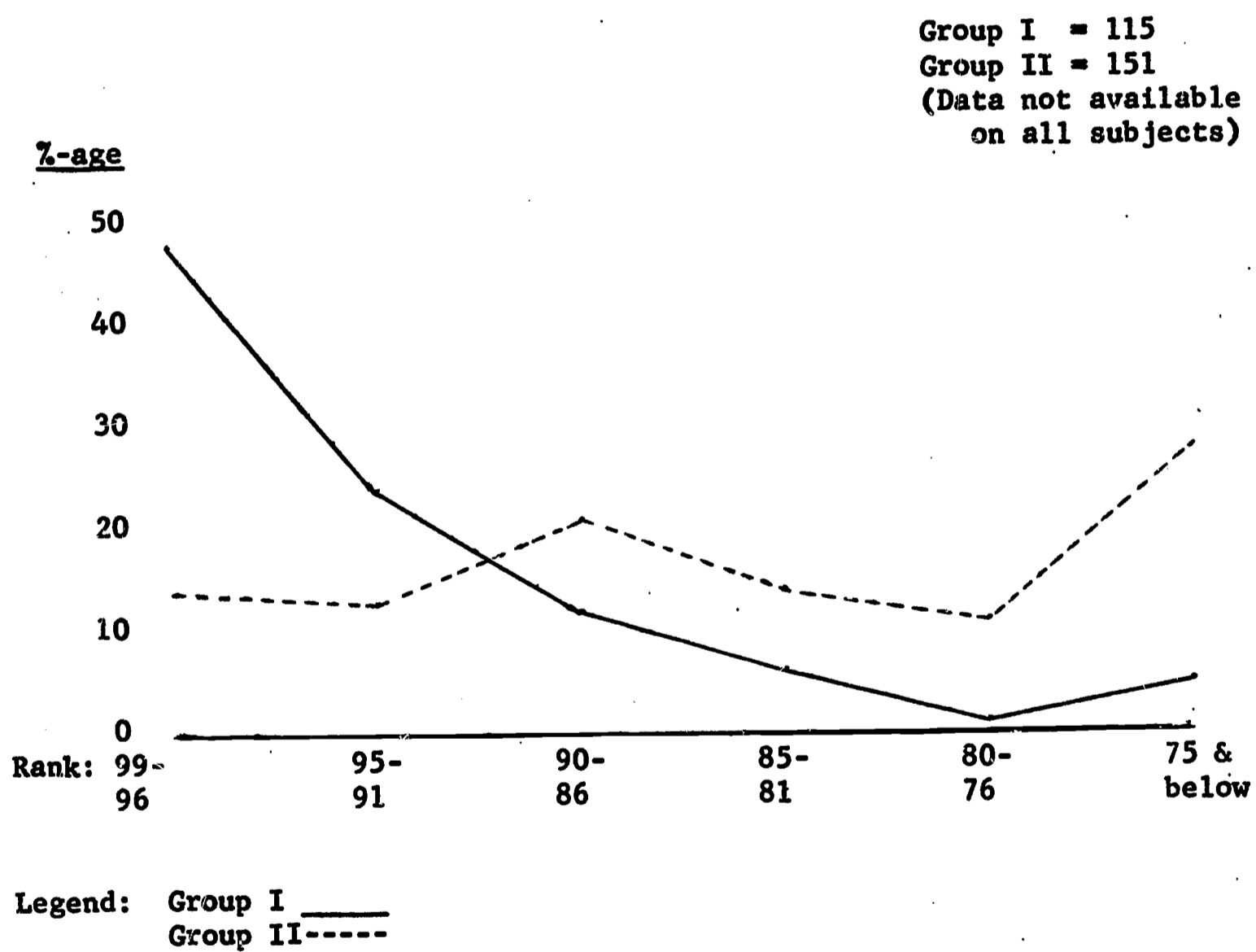
Reading -- Cooperative English Tests

High school ranks were available on 266 of the 286 students in the study. From the data, 45% were in the upper ten percent of their high school graduating classes; only 18% of the group were below the top quartile of their high school classes. (Table 2)

The distribution of the high school enrollment shows that only 27% of the subjects came from schools with an enrollment under 1,000. The major concentration was in high schools with enrollments between 1,000-3,000. The distribution is given in Table 3.

The home towns represented by this sample were, in the main, urban Illinois cities. Only 25% were from rural communities. The out-of-

TABLE 2  
HIGH SCHOOL RANK DISTRIBUTION



state subjects in this study were few in number, representing only 7% of the sample. The data are shown in Table 3.

TABLE 3

## SIZE OF HIGH SCHOOL AND HOMETOWN POPULATIONS

	Study Sample by College Achievement Groups							
	<u>Ag.</u>		<u>Ed.</u>		<u>LAS</u>		<u>Total</u>	<u>%</u>
	I	II	I	II	I	II		
<u>High School Enrollments</u>								
1000 & less	6	17	4	2	16	12	57	27
1000 - 2000	4	3	10	8	17	23	65	30
2000 - 3000	1	5	9	11	20	25	71	32
3000 & over	0	0	3	6	7	8	24	11
Totals	11	25	26	27	60	68	217*	
-----								
<u>Types of Cities</u>								
Illinois - Urban	6	15	22	29	56	59	187	68
Illinois - Rural	6	15	5	3	17	19	65	24
Out of State	0	1	2	3	8	6	20	7
Foreign	0	0	1	0	0	1	2	
Totals	12	31	30	35	81	85	274*	

\* Data not available on all subjects

The parent's occupational categories are listed in Table 4.

More than 80% of the students giving parent's occupation were in the upper socio-economic scales according to the Hollingshead Index (1958). These occupations represent the professional, managerial, and business proprietor types of job positions.

More than 50% of these students had fathers who attended college from one to four years.

Fifty four girls are James Scholars (Honors Program Students) which represents less than 19% of the population in our study sample.

The marital status of the sample indicates that 50% of these women describe themselves as single, 37% indicate they are going steady or are engaged, and over 12% of these women are, or have been, married.

In summary, this sample represents between 10% and 18% of the junior and senior women enrolled in the Colleges of Agriculture, Education, and Liberal Arts and Sciences. The high achieving group makes up 45% of the sample. Nearly 70% of the group that had taken achievement tests scored above the men in their classes. Forty-five percent of the sample were in the upper 10% of their graduating classes.

The number of women in sororities in this sample (25%) is slightly higher than the 19% of undergraduate women affiliated with sororities at the time of this study.

#### Method

This study is comparative in nature, attempting to develop answers to specific questions about the trait patterns of college women students with superior and average academic attainments. An assessment was made of the perceptions and reactions of these women to personality and college

TABLE 4  
DISTRIBUTION OF PARENT OCCUPATIONS.

Achievement Sub-groups (I-High Achievers; II-Average Achievers)								
<u>Scale</u>	<u>AgI</u>	<u>AgII</u>	<u>EdI</u>	<u>EdII</u>	<u>LAS I</u>	<u>LAS II</u>	<u>Total</u>	<u>%</u>
1-2:	5	13	9	9	41	33	110	43
3:	5	11	11	13	23	33	96	38
4-5:	0	4	6	9	5	8	32	13
6-7:	0	2	2	1	4	5	14	5
	10	30	28	32	73	79	252	

Scale 1-2: High Executives, Proprietors, Professionals, and Business Managers

Scale 3: Administrative Personnel, Owners Small Businesses, and Minor Professionals

Scale 4-5 Clerical & Sales Workers, Technicians, Owners of Little Businesses, Skilled Manual Employees, Small Farmers

Scale 6-7: Machine Operators, Semi-Skilled Employees, and Unskilled Employees

Scales from Index to Social Position in Hollingshead, A. B. Social Class and Mental Illness. New York: John Wiley and Sons, Inc., 1958.

environment factors. These responses were then analyzed in relation to grade point average.

As women move along their pathways of higher education, patterns may be evolving that are uniquely characteristic of the high and of the average achievers. The emerging patterns should indicate some of the forces, personal and environmental, that seem to influence these two groups of women.

Tests were administered at the same time each evening in the same large lecture room. All the measurements were self-report instruments that were not restrictive in time application nor in special administration procedures. Time for completion of the battery ranged from slightly less than two hours to more than three hours. Nothing was done to condition the students in the methods they were to use to react to the measures. The main purpose of the test battery was to get self-report reactions to, and perceptions of, their roles as women students and their relationships to the various elements of the university.

The girls were not identified in the measurement sessions as being either high or average achievers. They were informed that they represented the Colleges of Agriculture, Education, and Liberal Arts and Sciences, since these had the largest concentrations of women students. They were also advised that this was a pilot study to establish base line data for further, more detailed research on women students in the university setting.

Cooperation was solicited and given by the Dean of Admissions and the Dean of Women. Admissions data and women student records from their offices provided the necessary background information on each subject. The records sections of the Deans' offices of the three colleges were

also helpful in providing specific datum on individuals. Care was taken to protect the anonymity of the subjects.

Achievement test data on these students as entering freshmen were collected from the records of the Student Testing Services.

### Measures

In developing this study it was deemed important to assess as many elements of the phenomenological field of the women college student as would be feasible in a limited period of time. In order to do this with as large a sample as was envisioned (proposed N of 350; final N of 286), measures were selected that were machine scorable and appropriate for electronic data processing.

The study areas as finally delineated were self concept, environment, motivation, faculty-student relations, and attitude. The instruments selected for use were:

Self Concept	<u>Adjective Check List</u> by Harrison B. Gough and Alfred B. Heilbrun, Jr., National Computer Systems, Minneapolis, Minnesota, 1962.
Environment	<u>College Characteristics Index</u> by George G. Stern, National Computer Systems, Minneapolis, Minnesota, 1963.
Motivation	<u>Personal-Social Motivation Inventory</u> by E. Paul Torrance, Bureau of Educational Research, University of Minnesota, Minneapolis, 1963.
Faculty-Students	<u>Faculty Student Relations Index</u> by David C. Epperson, College of Education, University of Illinois, Urbana, 1966.
Attitude	<u>College Student Questionnaires</u> published by Educational Testing Service, Princeton, New Jersey, 1965.

The Adjective Check List (ACL). This measure of self concept is described as "a set of 300 standardized adjectives for use in personality assessment and psychometric research" (Gough and Heilbrun, 1965). It is scored on 24 scales that include "need" scales and response bias scales. Scores are plotted and reported in terms of both raw and standard scores. The ACL manual points out that:

Although first developed for use by observers in describing others, an adjective list can be and frequently is employed by an individual in self-description, or in other ways, e.g., to characterize the ideal self, a legendary personage, ... or almost any other thing.

The list of scales with their definitions and descriptions may be found in Appendix B, p. 134.

College Characteristics Index (CCI). The CCI has been in use for several years. George Stern pioneered in developing and establishing this instrument with substantial aid in later years from Robert Pace. The CCI is described in the publisher's brochure as:

one of several environmental indexes designed by Stern and his associates to measure a variety of relevant environmental characteristics in various settings. The 300 item CCI is scored on 30 "need-press" scales, 11 first-order factors, and two second-order factors.

The definitions of the scales and factors in the CCI may be found in Appendix C, p. 139.

Personal-Social Motivation Inventory. It is most difficult to find measures of motivation that will meet any rigid criteria. Too many of these instruments seem to be plagued with response set that conditions subjects' reactions to the items in the measure. An experimental measure by Torrance (1963), the Personal-Social Motivation Inventory, was selected because of its coverage of both motivational and social variables.

Since it is experimental, adequate data on its validity and reliability have not been developed. The long form of the 1963 form of this measure was used which yields scores on eight scales:

Creative Motivation	Critical Motivation
Intellectual Autonomy	Quest for Certainty
Quest for Power	Quest for Meaning
Quest for Social Relations	Rejection of Social Relations

Definitions for these scales can be found in Appendix D, p.143.

The Faculty-Student Relations Index. This is also an experimental measure being developed at the University of Illinois by David Epperson (1966). No standardized norms are as yet available. The 190 items in the instrument yield fifteen scales that focus on three dimensions: (1) faculty; (2) students; and, (3) alienation. The instrument has been designed primarily to "help define the general tone of faculty-student relations." The fifteen scales are given as follows:

#### FACULTY

- |                     |                          |
|---------------------|--------------------------|
| 1. Friendly Support | 4. Non-Coercive Approach |
| 2. Rationality      | 5. Unstructured Approach |
| 3. Free Expression  | 6. Creativity            |

#### STUDENT:

1. Personal Acquaintance
2. Professional Acquaintance
3. Respect

#### ALIENATION:

- |                                    |                                    |
|------------------------------------|------------------------------------|
| 1. Isolation - Need for Protection | 4. Student Deception               |
| 2. Dissatisfaction                 | 5. Isolation -- Need for Attention |
| 3. Generational Conflict           | 6. Union Ethic                     |

Appendix E contains the scale definitions (p. 145).

The College Student Questionnaire (CSQ). This is published by the Educational Testing Service and develops information on biographical and attitudinal characteristics of college students. The CSQ is related to the typologies developed by Clark and Trow (1960). The typologies depict

groups of students that seem to be oriented in either academic, collegiate, vocational, or non-conformist dimensions. The 200 multiple-choice items in the questionnaire yield a variety of attitudinal and biographical information. From selected items eleven scales are established as follows:

Family Independence	Peer Independence
Liberalism	Social Conscience
Cultural Sophistication	Satisfaction with Administration
Satisfaction with Faculty	Satisfaction with Students
Satisfaction with Major	Extracurricular Involvement
Study Habits	

Scale definitions can be found in Appendix F, p. 148.

Scoring for the Adjective Check List and the College Characteristics Index was handled by the National Computer Service of Minneapolis. Included in the service were profile sheets and data cards for each subject.

Scoring for the College Student Questionnaire was provided by Educational Testing Service. The service included a set of punched cards with raw data and scale scores plus a computer printout listing all of the data developed by the instrument in the individual colleges the sample represented.

The Motivation Inventory and the Faculty-Student Relations Index were scored by the Digitek Optical Scanning process in the Statistical Services Unit at the University of Illinois. The output was in the form of data cards.

Achievement test data were available in varying amounts for the majority of the students in this study sample. The data taken were from the ACT, a university math placement test, the SCAT, and the Coop English Tests. One of these measures was the ACT, the American College Testing Program's test of educational development and academic potential.

This is given to most entering freshmen. The four parts of the measure develop scores on English usage, mathematics usage, social studies reading, and natural sciences reading. In addition, there is a composite score.

The mathematics test (Part I and Part II) were developed on the Urbana campus of the University of Illinois by Professor William Ferguson of the Mathematics Department. The tests are used as placement devices for sectioning freshman math courses. No norms have been established nor data published on the validity or reliability of these measures.

The SCAT, School College and Ability Tests, were designed to "aid in estimating the capacity of a student to undertake the academic work of the next higher level of schooling" (SCAT, Manual, 1957). The tests yield three scores: Verbal, Quantitative and Total. The instrument is published by Educational Testing Service.

The final achievement measure was the Cooperative English Tests published by Educational Testing Service. The results provided scores on English expression and reading comprehension.

#### Data Analyses

Data analyses and processing were carried out through the facilities of the Statistical Services Unit and the Department of Computer Science at the University of Illinois. The computer used in the analysis work was an IBM 7094 since it was tied into a library of statistical programs (called SSUPAC) which had been developed at the University. For some measures that required special treatments, FASTRAN programs were written.

Since all test data had been punched on to cards, the first series of input was in running error checks to determine if data were available

for all subjects in the sample. Where there were discrepancies the answer sheets were rescored to complete the data needed for each measure. In two cases on the College Student Questionnaire (CSQ) this was impossible since the original answer sheets had been either lost or destroyed in processing. Two data cards taken at random from the deck were duplicated and used to fill out for the missing data.

For the motivation, faculty-student relations, and attitudinal measures, programs were run that provided frequency and percentage distributions on each response within the measure. This was done in case it would be necessary to take a look at individual items on the measures.

Scaling programs were developed for the motivation and faculty-student relations measures. The 189 items of the motivation instrument are distributed among eight scales. A program was developed for each of the six sample sections listing the eight scales and the number of subjects that responded in the correct direction. For the faculty-student relations index some 66 items of the 190 items on the questionnaire supply the relevant data for establishing the 15 factor scales.

All measures were programmed to provide mean scores and standard deviations on each variable.

For all subgroups, colleges and achievement level, programming for one-way analysis of variance and for t-tests were done on the self concept, environment, motivation, faculty-student, and attitudinal measures.

To control for achievement level and college grouping, an analysis of covariance program was written to process the test data.

## CHAPTER III

## RESULTS

The chapter is divided into several sections. The first of these deals with the data necessary to answer the questions posed in Chapter I. Other sections show a comparison between the three college groups, results of analysis of covariance with grade point as the dependent variable, and a section dealing with findings of related interest. The final section will summarize the results.

## Problem Questions

Question 1: Do academically superior women have a more sensitive self concept than average achieving women students?

Significant differences were found on t-tests on six of the 24 variables of the self concept measure with the distribution of high means for each group as follows (See Table 5).

<u>Scale</u>	<u>Group I &gt; II</u>	<u>Scale</u>	<u>Group II &gt; I</u>
6	Self control	7	Lability
9	Achievement	16	Heterosexuality
11	Endurance		
12	Order		

These results are comparative in nature and do not necessarily imply significant differences from the general population. From the above evidence it would appear that the concept of high achieving women is directed along these dimensions:

they are serious, responsible and diligent  
 they are intelligent and involved in their intellectual pursuits  
 they are self-controlled and dependable  
 they plan and organize their work

For the average achievers in Group II it would seem that their self concepts show tendencies to be spontaneous and restless while also

TABLE 5

SELF CONCEPT CHARACTERISTICS  
OF  
HIGH (I) AND AVERAGE (II) ACHIEVING WOMEN COLLEGE STUDENTS

Self Concept Scales	Raw Score T=50(1)	Group I (N=128)		Group II (N=158)		t
		$\bar{X}$	S.D.	$\bar{X}$	S.D.	
1. Number checked	92	101.38	30.86	101.72	31.75	
2. Defensiveness	22	17.49	6.52	17.67	5.99	
3. Favorable adjectives checked	51	45.15	14.63	46.20	12.98	
4. Unfavorable adjectives checked	8	10.02	7.94	10.10	7.94	
5. Self-Confidence	8.5	6.91	6.31	6.98	5.81	
6. Self-control	6	4.77	5.84	3.36	5.96	2.01*
7. Lability	9	8.28	3.76	9.33	4.30	2.17*
8. Personal adjustment	12.3	9.95	4.73	9.93	4.28	
9. Achievement	11.5	10.80	6.27	8.96	5.99	2.53*
10. Dominance	10.5	9.09	8.48	8.65	8.25	
11. Endurance	9	7.65	6.47	5.29	6.43	3.08**

(1) T Score ( $\bar{X}=50$ , S.D. = 10) Raw Score Score Equivalents of T=50.

\* p = less than .05

\*\*p = less than .01

TABLE 5 (continued)

Self Concept Scales	Raw Score T=50(1)	Group I (N=128)		Group II (N=158)	
		<u>X</u>	<u>S.D.</u>	<u>X</u>	<u>S.D.</u>
12. Order	9	8.22	5.98	5.95	5.83
13. Intraception	15	13.55	4.72	13.20	4.52
14. Nurtureance	23	15.76	9.07	16.82	8.35
15. Affiliation	25.5	19.06	7.38	20.19	6.75
16. Heterosexuality	10.6	7.94	4.51	9.63	4.14
17. Exhibition	1.5	.78	6.56	2.19	6.34
18. Autonomy	0.5	2.34	5.90	3.01	5.95
19. Aggression	-14	-8.96	9.40	-8.73	8.81
20. Change	6.3	6.06	4.26	6.74	4.92
21. Succorance	0.6	1.70	4.10	1.46	3.19
22. Abasement	2	1.80	6.64	1.08	5.74
23. Deference	5	2.40	7.04	1.84	6.55
24. Counseling readiness	2	4.30	3.53	3.72	3.85

3.31\*\*

(1) T Score (X=50, S.D. = 10) Raw Score Equivalents of T=50.

\* p = less than .05  
 \*\*p = less than .01

displaying strong heterosexual interests. These traits indicate that the high achievers perceive themselves as responsible, self-controlled and organized, some of the key elements of a healthy self concept. Question number one can be answered, in part, affirmatively for this sample in that the tests indicate academically superior women are more positive in their perceptions of self in certain dimensions than are the average achieving women.

Question 2: Are the needs of academically superior women more outwardly directed than inwardly directed?

Scales 9-23 of the self concept measure are based on need dimensions. High scorers find more relationships with people and stimulation from the things around them. Low scorers are more withdrawn and dependent upon internal gratification. The T scores (mean =50.0, S.D.=10) show that the high achievers have a mean of 49.3 and the average achievers a mean of 49.2 on the total array of need scales. From this it would appear that there was no real difference between the groups as far as total needs were concerned.

In the discussion of Question One it was shown that four of the need scales indicated significant differences between the groups on the t-tests. Group I had higher scores on the need scales of Achievement, Endurance, and Order. Group II had a higher score on the need scale of Heterosexuality. From this evidence it would appear that the women of Group I focus more on academic work in their attempts to attain need gratification. For one thing they seem to be more competitive and like to use their talents to surpass others. Supported by their higher levels of persistence and their greater interest in organization, these high achieving women show greater potential for effectively using their

talents in academic competition. Academic success can be considered an attainment in the college environment. If such success is the goal of a high achieving student, then we would assume her needs are more outwardly directed.

The need scale, Heterosexuality, seemed to have more importance for the women of Group II. Since this deals with interests in the opposite sex as well as life in general, the indications are that the average achievers find need gratification more in outward dimensions than in inward ones. The need scales--Achievement, Endurance, Order, Heterosexuality--are defined for this measure in Appendix B, pp.

These findings suggest that both groups tend to be outwardly directed toward environmental elements in their search for need gratification. These directions are descriptive of the sample groups only and are not necessarily related to the general population.

Question 3: Will talented women be more influenced by the intellectual climate of the university than academically average women?

The data for the answer to this question were developed from the factors of Stern's College Characteristics Index. (See Table 6 p. 49.

The environmental measure has built into its measurement procedures a group of factors that purportedly relate to the individual's perceptions of the Intellectual Climate and Non-Intellectual Climate of the university (environment factors are listed and defined in Appendix C, p. 139. The factors are based upon combinations of various scale responses. In looking at the environment factor t-tests in Table 6 we find that there were three items with significant differences between Group I and Group II. From this evidence it would seem that the women of Group I feel students are respected and allowed adequate freedom.

TABLE 6

PERCEPTIONS OF UNIVERSITY CLIMATE  
HIGH (I) AND AVERAGE (II) ACHIEVING WOMEN COLLEGE STUDENTS

	<u>Group I (N=128)</u>		<u>Group II (N=158)</u>		
	<u>X</u>	<u>S.D.</u>	<u>X</u>	<u>S.D.</u>	<u>t</u>
<u>Intellectual Climate</u>					
1. Work-Play	14.28	3.63	13.66	4.01	
2. Non-vocational Climate	24.07	4.13	23.27	4.92	
3. Aspiration Level	22.59	5.36	23.48	5.18	
4. Intellectual Climate	30.23	7.40	32.04	7.93	1.98*
5. Student Dignity	17.55	4.76	16.37	4.62	2.11*
6. Academic Climate	14.20	2.98	14.18	3.47	
7. Academic Achievement	27.93	7.36	28.00	7.35	
8. Self Expression	22.64	5.73	23.58	5.94	
TOTAL	173.48	29.81	174.33	32.05	
<u>Non-Intellectual Climate</u>					
1. Self-Expression	22.64	5.73	23.58	5.94	
2. Group Life	21.15	4.50	21.53	4.46	
3. Academic Organization	32.34	5.56	32.14	6.31	
4. Social Form	25.91	5.40	27.44	5.98	2.24*
5. Play-Work	25.72	3.63	26.15	4.35	
6. Vocational Climate	25.93	4.13	26.47	5.15	
TOTAL	153.70	17.09	157.36	21.36	

\* p = less than .05

For the women of Group II it would appear that they are impressed by the university's staff and facilities. They also feel that opportunities for social participation are excellent at the university. There is more respect and veneration for the university setting among the average achieving women. There is also an indication that these women look upon their college experiences as an opportunity to improve their social skills and to attain more sophistication in their social relationships.

Another interesting result is the lack of distinction between the high and average achieving groups on their perceptions of the Intellectual Climate. As shown in Table 6 (p. 49) the means for the total scores for Intellectual Climate range within one point of one another. Intellectual Climate reflects students' perceptions of the scholarly climate of the university as represented by the staff and physical facilities. It might be posited that high achievers would give higher ratings to the Intellectual Climate, but this was not the case. Average achieving women were more favorably impressed with the Intellectual Climate than were the high achievers. Figure 4 depicts the Group I and II profiles for the environment factors.

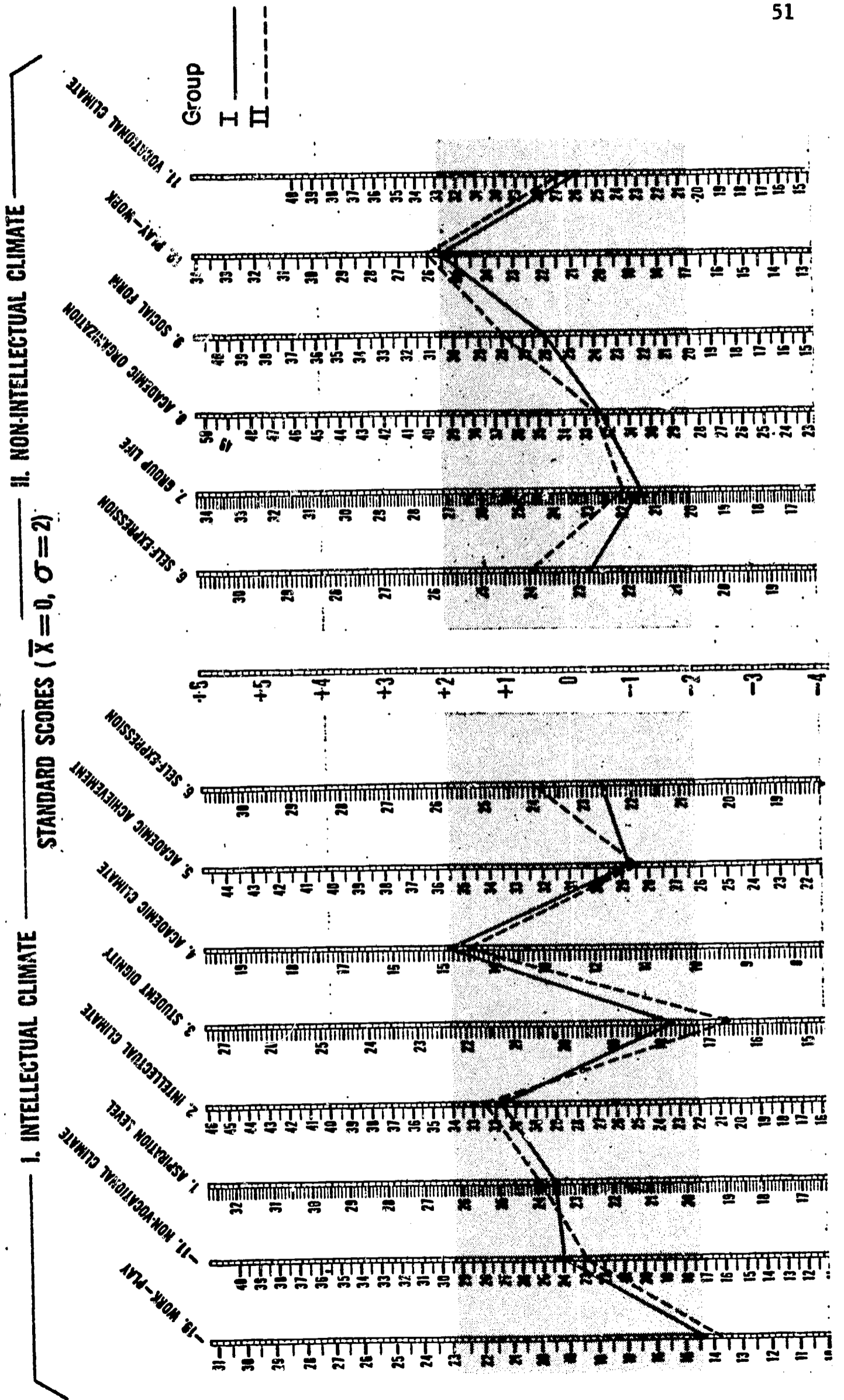
From this information it appears that the talented women do not perceive the climate of the university as stressing the intellectual and academic dimensions. The receptivity toward, and the positive reaction to the university climate originates more from the average achieving group than the high achievers, although the general differences are small.

Question 4: Are high achievers more immune to the social forces of the university than the average achievers?

The environmental raw scores (College Characteristics Index) for

FIGURE 4

ENVIRONMENT FACTOR SCORE PROFILES



the factors Group Life, Social Form, and Play-Work were analyzed by a t-test. The result was a t of -1.85, a score inadequate to be considered significant at the .05 level. The trend of the t result was in favor of the average achieving group. While the evidence was inconclusive, there was an indication that high achievers are more immune to the social pressures of the university than the average achievers.

As was discussed under Question 3, the average group seems to be more interested in, and susceptible to, the college social forces represented by peer togetherness, mutual support for social interaction, and an emphasis on pleasure-filled activities. This may be because of Group II's more open traits and favorable receptiveness to the social opportunities available to them.

Question 5: Are superior women students motivated more by intellectual or social forces than average achieving women?

To respond to this question an assessment was made of the results from Torrance's Motivation Inventory. The t-test results (See Table 3-2) yielded three significant variables. They were:

<u>Scale</u>	<u>Group II &gt; Group I</u>
2	Critical motivation
5	Quest for power
7	Quest for social relations

This would indicate that the women in Group II may be more sensitive to potential deficiencies in some knowledge areas. However, it is not known if they have ability to produce constructive ideas to remedy these deficiencies. The Group II women seem more inclined to daydream about themselves and their future successes. Social relations and "going with the crowd" are more important than their individual potential.

As measured by this inventory both the intellectual and social forces of motivation seem to lack response from the high achieving women. The question would be answered "No" in this case since the data discussed did not support either dimension of motivation among high achievers.

For average achievers, however, there is additional evidence that social dimensions are of major importance. The self concept measure indicated the interest in heterosexual activities, and the environmental measure pointed toward the trait of openness, an interest in developing social skills, and the impact of social forces on these women in Group II. The impact of college on the women of Group II seems to emanate more from the social dimensions.

TABLE 7  
MOTIVATION CHARACTERISTICS OF HIGH (I) AND AVERAGE (II)  
ACHIEVING WOMEN COLLEGE STUDENTS

<u>Motivation Scales</u>	<u>Group I (N=128)</u>		<u>Group II (N=158)</u>		<u>t</u>
	<u><math>\bar{X}</math></u>	<u>S.D.</u>	<u><math>\bar{X}</math></u>	<u>S.D.</u>	
1. Creative motivation	18.50	5.88	19.03	5.89	
2. Critical motivation	6.27	1.79	6.87	1.84	2.78**
3. Intellectual autonomy	23.04	6.22	23.89	6.56	
4. Quest for certainty	14.67	5.20	14.92	4.66	
5. Quest for power	7.77	3.75	9.33	4.39	3.19**
6. Quest for meaning	6.56	1.77	6.90	1.83	
7. Quest for social relations	12.47	3.54	13.39	3.65	2.14*
8. Rejection of social relations	11.02	4.66	11.37	4.30	

\* p = less than .05

\*\* p = less than .01

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Question 6: Do academically talented women respond more favorably to the faculty than do average achieving women?

One of the measures that could provide evidence to answer this question was the Faculty Student Relations Index. The scores from this index were analyzed on a one-way analysis of variance program without yielding any significant results. Both groups, high achieving and average achieving women, seem to respond to this measure on the same plane (See Table 8). Data from this measure were inadequate to answer the question.

One of the scales of the College Student Questionnaire is entitled Satisfaction with Faculty. The t-test results (See Table 9 ) for this scale was significant at the .05 level with Group I having the higher mean score. This evidence would indicate the women of Group I feel instructors are competent and fair, and interested in their students' problems. This favorable reaction on the part of the women in Group I toward faculty members suggests that these students are favorably disposed toward their instructors. From the CSQ data the question could be answered affirmatively.

Question 7: Are academically talented women more independent than academically average women?

The College Student Questionnaire provides the evidence to answer this question. All of the variables on this measure that attained significant results were dominated by Group I. Germane to this question are the two variables, Family Independence and Peer Independence, which had t-scores (Table 9 ) that were significant at the .01 and .05 levels respectively. For this question the evidence indicates that talented women do feel more independent than the average group in the study.

TABLE 8  
PERCEPTIONS OF FACULTY STUDENT RELATIONS  
HIGH (GROUP I) AND AVERAGE (GROUP II) ACHIEVING COLLEGE WOMEN

Factors	Group I (N=128)		Group II (N=158)		F
	<u>X</u>	<u>S.D.</u>	<u>X</u>	<u>S.D.</u>	
<u>FACULTY</u>					
I Friendly Support	2.33	.181	2.31	.191	<1
II Rationality	3.19	.746	3.06	.756	<1
III Free Ex- pression	3.04	.310	3.00	.291	<1
IV NonCoercive Approach	1.68	.160	1.71	.091	<1
V Unstructured Approach	2.45	.455	2.39	.440	<1
VI Creativity	3.08	.283	2.98	.173	<1
<u>STUDENTS</u>					
I Personal Acquaintance	2.37	.372	2.42	.197	<1
II Professional Acquaintance	2.94	.149	2.84	.144	<1
III Respect	3.61	.101	3.58	.090	<1
<u>ALIENATION</u>					
I Isolation- Need for Pro- tection	3.42	.294	3.33	.189	<1
II Dissatisfaction	3.38	.169	3.19	.086	4.22 (Not significant)
III Generational Conflict	2.00	.142	2.00	.125	0
IV Student Deception	1.64	.338	1.71	.346	1.15 (Not significant)
V Isolation- Need for Attention	3.48	.086	3.43	.063	<1
VI Union Ethic	2.03	.283	1.93	.128	<1

TABLE 9

COLLEGE WOMEN REACTIONS TOWARD SELF AND COLLEGE STRUCTURE  
High (I) and Average (II) Achieving Women College  
Students

<u>Scales</u>	<u>Group I (N=127)</u>		<u>Group II (N=157)</u>		<u>t</u>
	<u>X</u>	<u>S.D.</u>	<u>X</u>	<u>S.D.</u>	
1. Family independence	26.09	6.19	24.23	5.51	2.66**
2. Peer independence	25.57	4.00	24.57	4.03	2.08*
3. Liberalism	29.00	4.85	26.44	5.09	4.29**
4. Social conscience	30.79	4.09	30.10	4.80	
5. Cultural sophistication	26.23	5.98	25.30	5.38	
6. Satisfaction with Faculty	25.58	4.95	24.40	4.78	2.04*
7. Satisfaction with Administration	24.32	5.50	24.31	5.14	
8. Satisfaction with Major	27.81	4.65	26.87	4.15	
9. Satisfaction with Students	26.13	3.96	25.24	3.93	
10. Study habits	26.39	4.68	24.14	4.49	4.11**
11. Extra curricular involvement	17.80	4.55	18.42	3.60	

\*p = less than .05

\*\*p = less than .01

These scales indicate the high achieving women in this study feel that the they are autonomous of their families and relatively independent of peer influences on their personal behavior.

This result is in keeping with the accumulating evidence that the women of Group II are more interested in, and dependent on social relations, than are the women of Group I. The high achievers are able to function

autonomously, as it were, while the women of Group II are dependent upon others.

Question 8: Do superior women find more satisfaction in the college structure than average achievers?

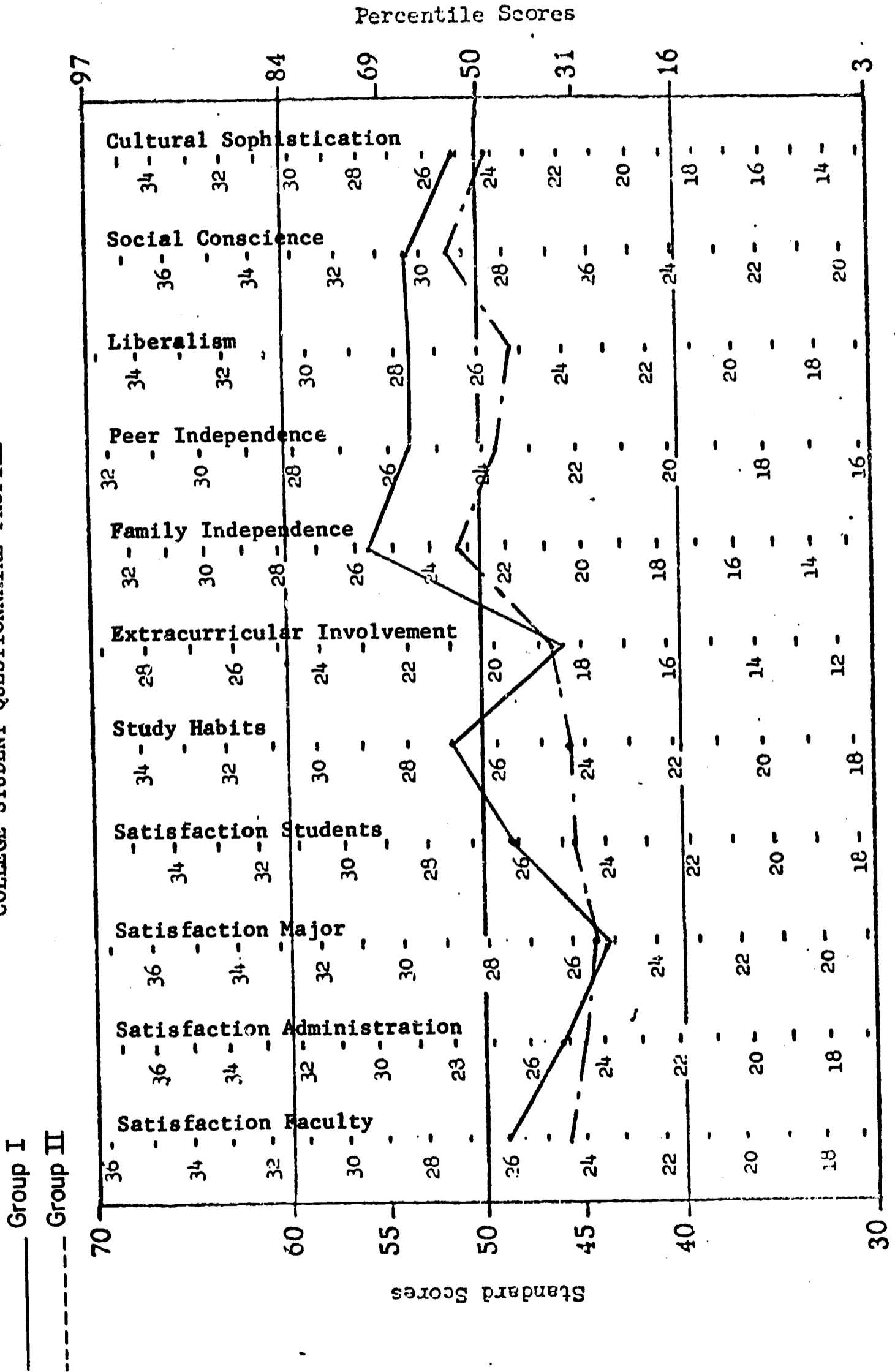
A review of the mean scores (Table 9 , p. 56 ) for variables six through nine on the College Student Questionnaire reveals that while the scores are close, the women of Group I are slightly higher in all areas. This is graphically portrayed in Figure 5. Only one of these, Satisfaction with Faculty, attained a level of significance on the t-test ( $p < .05$ ). (See Table 9 ). While the difference is supported by only one significant variable and the pattern of higher mean scores, the answer to the question would seem to be in a positive direction since the Group I women have reacted on a higher level on the satisfaction dimensions.

The evidence presented here further substantiates the response, also, to Question 6 in that high achievers are more supportive of the faculty.

Question 9: Are the goals of the high achieving woman student greater in the academic dimensions than the average achiever?

College Student Questionnaire has questions about plans for graduate work, doctoral programs, and careers. The responses to these items were analyzed by a Chi-square test to determine if the high achievers were significantly different from the average achievers in these areas.

FIGURE 5  
COLLEGE STUDENT QUESTIONNAIRE PROFILE



<u>Graduate Work Plans</u>	<u>Group I (N=124)</u>	<u>Group II (N=153)</u>	<u><math>\chi^2</math></u>	<u>p</u>
Yes	86	79		
No	38	74	8.97	.01

-----

<u>Doctoral Degree Plans</u>	<u>Group I (N=85)</u>	<u>Group II (N=78)</u>		
Yes	21	15		
No	64	63	.69	NS

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<u>Career Plans</u>	<u>Group I (N=127)</u>	<u>Group II (N=157)</u>		
Yes	114	142		
No	13	15	.07	NS

-----

The only significant item was Graduate Work Plans ( $p < .01$ ). The distinguishing factors is that over two thirds of high achieving women have plans to do graduate work. For the average achievers there is an almost even division as to those who plan to do graduate work and those who do not. One factor that might influence these plans is the more rigid requirements in most universities for admission to graduate programs. The academically superior student is more likely to be influenced to continue her education for two reasons. One, her success patterns can provide her with the assurance she needs to venture upward to the next level of higher education. Two, faculty members are more likely to encourage her to expand her educational horizons and reap the benefits of graduate work.

This response to the Graduate Work Plans question suggests that the high achieving women students in this study do have stronger academic goals than their average achieving counterparts.

Question 10: Are study habits stronger among academically superior women than among average achievers?

The answer to this question is shown in Table 9 (p. 56 ) the results for the College Student Questionnaire. The variable Study Habits was dominated by Group I women with the significant difference between the two groups reaching a .05 level on the t-test. The answer would be, therefore, that superior women students do have stronger study habit patterns.

Since the women of Group I are achieving academic success, their Study Habit pattern is a manifestation of their willingness to work to attain success. For Group I women the trait represents a feeling of confidence in themselves and a willingness to work and plan to meet their academic goals. The corollary for the women of Group II might be that their Study Habit pattern is influenced by their stronger interests in social dimensions rather than academic ones. The result is, of course, lesser academic attainment for the average group as borne out by their grade point averages.

Question 11: Do high achievers exhibit more awareness of social and cultural areas than average achievers?

Social Conscience and Cultural Sophistication are two variables on the College Student Questionnaire. A t-test was computed that resulted in a t of 2.05, significant at the .05 level, with Group I having the higher mean. The answer would be that high achievers in this study are more aware of social and cultural dimensions as represented by their moral concerns about social injustice and their sensibility to ideas and aesthetics.

This evidence points out that the women of Group I seem to have a more realistic or global orientation to their society and the culture it represents. While the immediate social environment might be important to them, their awareness of, and interest in, larger social issues and the heritage of our culture is more extensive than that exhibited by the average group.

### College Groups

This section deals with an analysis of the data for each of the three college groups represented in this study. The findings are comparative in nature across the colleges and apply to this study sample only. From this one study sample we do not intend to imply that the patterns are unique and static for the colleges on this or any other campus.

Question 12: Are there unique differences characterizing women students by college areas?

The data for the college groups on all variables will supply the evidence to answer this question. We will look at each measure individually and at the college groups that had the higher mean scores on the significant t's. All variables listed were significant at, or less than, the .05 or .01 level.

To determine if all the significant t scores were valid, a one-way analysis of variance program was run on all the variables for the three college groups. The variables attaining significant F levels are shown in the tables accompanying the narrative. In the following discussion the only variables listed are those that had both significant F levels and t scores.

### Self Concept Measure

The first measure to be discussed in delineating group characteristics in the three college groups will be the self concept measure. Table 10 lists the means, standard deviations, and F levels. Table 11 shows the t-test results.

The Agriculture groups had three variables with higher means on the significant t-tests. This would indicate that the women in Agriculture, against their comparison groups, tend to be more serious, responsible, persevering, and goal oriented. Although they are friendly individuals, they prefer to remain in the background and be free of external demands. This array of traits may be defining a pattern wherein the personal orientation is strongly related to vocational aspirations. Goal orientation, supported by qualities of responsibility and perseveration, might be good indicators that plans are pretty well established in the minds of these young women.

For the students in Education the trait patterns suggest, comparatively speaking, that they are serious, responsible, persevering and goal oriented young women. They possess self-control, sincerity, and a desire to help others. They also prefer to stay out of the limelight and indicate conformist tendencies. Three of these traits are repeats of the itmes describing the women in Agriculture. While goal orientation and the strengths to attain their goals may exist, they might be held back from full attainment because of their bows to conformity and their self-imposed restraints. They would seem to be acceptant of social tides and vacillate with their ebb and flow.

The women in LAS had the high means on six variables that were statistically significant in this measure. On four of these six variables

TABLE 10  
SELF CONCEPT CHARACTERISTICS  
WOMEN STUDENTS BY COLLEGE GROUPS

Scale	Ag. (N=43)		Ed. (N=70)		IAS (N=173)		F	p
	X	S.D.	X	S.D.	X	S.D.		
1. Number checked	98.55	30.35	99.01	31.31	103.34	31.58		
2. Defensiveness	18.28	6.73	18.87	6.17	16.90	6.05		
3. Favorable adjectives checked	46.42	14.74	46.64	14.29	45.18	13.29		
4. Unfavorable adjectives checked	8.33	5.61	8.19	7.39	11.26	8.41	5.12	.01
5. Self-confidence	6.26	5.94	6.37	5.87	7.36	6.12		
6. Self-control	5.58	5.07	6.11	5.05	2.74	6.15	10.52	.01
7. Lability	9.02	4.35	7.79	3.62	9.25	4.15	3.30	.05
8. Personal Adjustment	10.84	4.31	11.34	4.18	9.14	4.48	7.34	.01
9. Achievement	9.84	5.56	10.06	6.28	9.65	6.07		
10. Dominance	8.86	7.74	8.54	7.95	8.97	8.67		
11. Endurance	7.05	6.56	8.23	5.99	5.41	6.60	5.06	.01
12. Order	7.58	5.85	8.73	5.72	6.10	6.00	5.21	.01

TABLE 10 (continued)

Scale	Ag. (N=43)		Ed. (N=70)		LAS (N=173)		F	p
	X	S.D.	X	S.D.	X	S.D.		
13. Intraception	13.51	4.84	13.44	4.95	13.28	4.42		
14. Nurturance	16.72	8.79	16.34	8.27	15.24	8.65	4.44	.05
15. Affiliation	20.05	7.43	21.11	7.03	19.02	6.90		
16. Heterosexuality	9.00	3.80	9.00	4.17	8.79	4.61		
17. Exhibition	.26	5.06	.33	6.41	2.38	6.70	3.60	.05
18. Autonomy	.98	4.49	.39	5.17	4.08	6.14	12.78	.01
19. Aggression	-10.28	8.03	-11.43	8.39	-7.42	9.33	5.69	.01
20. Change	5.21	4.10	4.81	4.25	7.40	4.69	10.11	.01
21. Succorance	1.14	3.00	1.80	3.63	1.58	3.77		
22. Abasement	1.40	4.80	2.31	5.82	1.03	6.56		
23. Deference	3.35	5.17	4.56	6.10	.77	7.06	9.15	.01
24. Counseling readiness	3.40	2.57	2.46	4.10	4.73	3.59	10.66	.01

TABLE 11  
COLLEGE GROUP DIFFERENCES ON SELF CONCEPT

<u>Scale</u>	<u>Ag.</u> <u>(N=43)</u>	<u>Ed.</u> <u>(N=70)</u>	<u>LAS</u> <u>(N=173)</u>	<u>df</u>	<u>t</u>	<u>p</u>
1. Defensiveness		<u>x*</u>	x	241	2.29	.05
2. Unfavorable adjectives checked	x		<u>x</u>	214	2.17	.05
		x	<u>x</u>	241	2.67	.01
3. Self Control	<u>x</u>		x	214	2.80	.01
		<u>x</u>	x	241	4.07	.01
4. Lability		x	<u>x</u>	241	2.59	.05
5. Personal Adjustment	<u>x</u>		x	214	2.23	.05
		<u>x</u>	x	241	3.53	.01
6. Endurance		<u>x</u>	x	241	3.09	.01
7. Order		<u>x</u>	x	241	3.14	.01
8. Nurturance		<u>x</u>	x	241	2.98	.01
9. Affiliation		<u>x</u>	x	241	2.13	.05
10. Exhibition		x	<u>x</u>	241	2.19	.05
11. Autonomy	x		<u>x</u>	214	3.10	.01
		x	<u>x</u>	241	4.43	.01
12. Aggression		<u>x</u>	x	241	3.12	.01
13. Change	x		<u>x</u>	214	2.81	.01
		x	<u>x</u>	241	4.00	.01
14. Deference	<u>x</u>		x	214	2.24	.05
		<u>x</u>	x	241	3.93	.01
15. Counseling readiness	x		<u>x</u>	214	2.30	.05
		x	<u>x</u>	241	4.29	.01

\*Underlined Group had Higher Mean Score

the LAS women dominated both groups in Agriculture and Education. From this grouping of variables it would appear on comparison that the women in LAS are viewed as more rebellious, careless and cynical. While they may be spontaneous, they are often seen as excitable and self-centered individuals. They appreciate variety. They display perception and independence but have ambivalent status feelings. These could be very creative individuals who are fighting the conformity pressures of society. However, this may be indicative of critical motivation abilities (one of the Motivation Inventory scales) wherein flaws can be readily pointed out but little is suggested for any improvement. The anxiety and heightened self-concerns may be real deterrents to the attainment of personal success even though academic success is achieved.

#### Environment Factors

Table 12 lists the t-test results on the factor section of the environmental measure for the three college groups.

For the women in Agriculture the variable Group Life points to their stronger positive feelings toward the supportive group activities they are in (feelings of togetherness), but they also reflect more of an interest in, and concern with the welfare of other students.

The women in Education display traits that are supportive of group activities and their peers. They are favorably impressed by the academic and social environment of the university. They seem to be influenced by faculty and peers, but mostly in the social and nonintellectual dimension.

It would appear that the women in Education tend to be more influenced by social and environmental forces. There are indications that

TABLE 12

## COLLEGE PERCEPTIONS OF UNIVERSITY CLIMATE

Intellectual Climate	<u>Ag. (N=43)</u>		<u>Educ. (N=70)</u>		<u>LAS (N=173)</u>		<u>F</u>	<u>p</u>
	<u><math>\bar{X}</math></u>	<u>S.D.</u>	<u><math>\bar{X}</math></u>	<u>S.D.</u>	<u><math>\bar{X}</math></u>	<u>S.D.</u>		
1. Work-Play	13.88	3.49	13.97	3.75	13.94	3.99		
2. Non-vocational climate	23.88	4.38	22.23	4.52	24.13	4.59	4.46	.05
3. Aspiration level	24.16	4.78	23.84	4.82	22.50	5.50		
4. Intellectual climate	32.79	6.37	31.83	7.29	30.61	8.17		
5. Student dignity	16.93	4.23	16.73	4.70	16.96	4.85		
6. Academic climate	14.42	3.77	14.10	3.18	14.17	3.16		
7. Academic Achievement	29.16	6.70	29.21	6.88	27.17	7.60		
8. Self-expression	24.21	5.50	23.76	5.84	22.65	5.92		
Total - Intellectual climate	179.44	28.94	175.67	26.44	171.89	33.10		
<u>Non-Intellectual Climate</u>								
1. Self-expression	24.21	5.50	23.76	5.84	22.65	5.92		
2. Group Life	23.14	3.40	22.07	4.88	20.63	4.39	6.86	.01
3. Academic organization	31.81	5.65	34.06	5.76	31.60	6.02	4.46	.05
4. Social form	27.84	4.46	28.10	6.01	25.94	5.84	4.48	.05
5. Play-work	26.12	3.49	26.03	3.75	25.89	4.29		
6. Vocational climate	26.12	4.38	27.77	4.52	25.64	4.77	5.26	.01
Total - Non-vocational climate	159.23	14.05	161.79	20.67	152.39	19.72	6.79	.01

TABLE 12 (continued)

t-tests: University Climate Factors  
(Underlined Group had Highest Mean Scores)

<u>Intellectual Climate</u>	<u>Ag.</u>	<u>Ed.</u>	<u>LAS</u>	<u>df</u>	<u>t</u>	<u>p</u>
2. Non-vocational climate		x	x	241	2.94	.01
<u>Non-Intellectual Climate</u>						
2. Group life	x		x	214	3.50	.01
		x	x	241	2.24	.05
3. Academic organization	x	x		111	2.02	.05
		x	x	241	2.92	.01
4. Social form	x		x	214	1.99	.05
		x	x	241	2.59	.05
6. Vocational climate		x	x	241	3.21	.01
Total - Non-intellectual climate	x		x	214	2.14	.05
		x	x	241	3.32	.01

these women see themselves more as following conformist patterns than they see themselves acting as individualists.

The one variable that had relative importance to the women in LAS was more of an interest in the opportunities to engage in theoretical, artistic, and other activities of an impractical nature. This indicates more opposition to student conformity and conventional values. It seems to represent an attempt, as reported by the LAS women, to establish their own values with the resultant experimentation on the part of these individuals, in their own minds at least, to postulate and test the results.

#### Motivation Inventory

The college group t-tests on the motivation variables are shown in Table 13.

The significant item for the women in Agriculture suggests they see strong needs for social relationships and feel this is an important personal goal.

The women in Education had two variables attaining significant levels, indicating that interpersonal relationships and group memberships were important personal needs. Social participation seems to be a critical element in the lives of these young women in Education. They are willing to pay the price of submerging their own personalities if they can become members of "the group" they feel they need to be in.

The significant items for the women in LAS revealed traits that displayed attitudes of courage and inquiry along with feelings of independence and persistence. On these two variables the women in LAS dominate both of the other college groups. Their quest is not in the

TABLE 13  
COLLEGE GROUP MOTIVATION TRAITS  
WOMEN COLLEGE STUDENTS

Scale	Ag. (N=43)		Ed. (N=70)		LAS(N=173)		F	p
	<u><math>\bar{X}</math></u>	S.D.	<u><math>\bar{X}</math></u>	S.D.	<u><math>\bar{X}</math></u>			
1. Creative motivation	17.77	6.05	16.83	6.20	19.84	5.48	7.66	.01
2. Critical motivation	6.93	1.88	6.63	1.89	6.50	1.81		
3. Intellectual autonomy	21.63	5.92	21.64	6.96	24.73	6.02	8.36	.01
4. Quest for certainty	15.26	5.21	15.93	4.76	14.24	4.82	3.21	.05
5. Quest for power	9.07	4.07	8.59	4.23	8.54	4.21		
6. Quest for meaning	6.84	1.81	7.09	1.59	6.59	1.88		
7. Quest for social relations	13.70	3.37	13.66	3.84	12.52	3.54	3.52	.05
8. Rejection of social relations	10.91	4.37	10.76	4.89	11.47	4.31		

t-test: College Groups  
Differences on Motivation Traits

Scale	Ag. (N=43)		Ed. (N=70)		IAS (N=173)		df	t	p
	<u>x</u>		<u>x</u>		<u>x*</u>	<u>x</u>			
1. Creative motivation	x		x		x*	x	214	2.18	.05
							241	3.74	.01
2. Intellectual autonomy	x		x		x	x	214	3.03	.01
							241	3.45	.01
3. Quest for certainty			<u>x</u>		x		241	2.48	.05
4. Quest for social relations			<u>x</u>		x		241	2.21	.05

\* Underlined group had Higher Mean Score

form of social relationships. They do display an interest in applying new tests to established practices and concepts, and they seem to have the courage to stand behind their conclusions.

It appears from this data that social relations are more of a concern for the women in Agriculture and Education. For the women in LAS the interest seems to be directed more toward testing and expanding their individual creative and intellectual abilities.

#### Faculty-Student Relations Index

The factor scores on this measure were computed on a one-way analysis of variance program. Two of the factors attained significant levels for the college groups (See Table 14, p. 72). However, the general indication is that these three groups of women in Agriculture, Education, and Liberal Arts and Sciences, perceive their relations with faculty members along comparable lines. Table 14 shows the data for the fifteen factors of this index. Higher scores indicate less alienation.

The first factor with a significant F was the Faculty item -- Non-Coercive Approach. The LAS group had the highest mean score on this which means that the women of that group were more favorably disposed toward the faculty on this item. The item relates to the amount of pressure placed on students by the faculty.

The second factor that attained a significant F level was in the Alienation item entitled Isolation--Need for Attention. This item deals with incongruency of viewpoints between faculty and students on what constitutes appropriate attention to students. The slight difference in scores points to the women of LAS being slightly more alienated on this factor.

TABLE 14

## COLLEGE GROUP PERCEPTIONS OF FACULTY STUDENT RELATIONS

Factors	AG (N=43)		EDUC (N=70)		LAS (N=173)		F	p
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.		
<u>FACULTY</u>								
1. Friendly Support	2.45	.27	2.27	.177	2.23	.129	1.66	NS
2. Rationality	3.08	.752	3.08	.817	3.19	.610	<1	--
3. Free Expression	3.02	.342	3.08	.350	2.94	.319	<1	--
4. NonCoercive Approach	1.68	.127	1.54	.141	1.86	.105	7.39	.01
5. Unstructured Approach	2.45	.550	2.38	.475	2.43	.336	<1	--
6. Creativity	3.01	.240	3.05	.272	3.02	.186	<1	---
<u>STUDENTS</u>								
1. Personal Acquaintance	2.47	.299	2.35	.314	2.36	.242	<1	--
2. Professional Acquaintance	3.05	.095	2.80	.143	2.83	.169	3.63	NS
3. Respect	3.61	.133	3.63	.072	3.55	.088	<1	--
<u>ALIENATION</u>								
1. Relation-Need for Protection	3.30	.332	3.46	.189	3.35	.193	<1	--
2. Dissatisfaction	3.42	.166	3.29	.148	3.14	.100	4.16	NS
3. Generational Conflict	2.03	.133	1.93	.185	2.04	.161	<1	--
4. Student Deception	1.58	.348	1.62	.361	1.80	.331	<1	--
5. Isolation-Need for Attention	3.55	.104	3.44	.055	3.36	.058	6.09	.05
6. Union Ethic	2.05	.295	1.94	.212	1.95	.147	<1	--

\*Higher scores indicate less alienation

With one exception, all three groups were similar in their high and low ratings of the scales within the main dimensions of the measure. Under the Faculty dimension, the groups were highest on the scale Rationality and lowest on the scale Non-Coercive Approach. This suggests that these women feel the faculty treats them fairly but at the same time it is applying academic pressure on students.

Under the Student scales the highest scores were for Respect and the lowest for Personal Acquaintance. Again there was uniform agreement among the three college groups. This would indicate that the faculty is respected but there is an interest in being better acquainted with faculty members.

The Alienation scales show the only departure from uniform reactions to this measure. Highest scores from the Agriculture and LAS groups were on the scale Isolation--Need for Attention. The Education subjects rated highest on the scale Isolation--Need for Protection. Since these scores are in the desired direction, these students seem to feel that their views are congruent with faculty viewpoints. The women in Agriculture and LAS evidently feel instructors are giving students adequate attention, while the women in Education seem to feel that the members of the faculty have not been attempting to indoctrinate students excessively.

All three groups rated the scale Student Deception lowest among the Alienation scales. This is in the negative direction and implies that these women are aware of student attempts to deceive the faculty. It does not indicate whether any of these subjects have attempted or practiced any deceptions.

Since this index of faculty student relations is still in the experimental stages it has no norm tables for reference. The lack of variance among the subgroups in the study indicates a commonality of reactions to this measure. The women in this study have a positive perception of the members of the faculty. There were no tangible indications of alienation from any subgroup in the study. In essence it would seem, therefore, that faculty student relations are on a good level between these women students and their instructors.

#### College Student Questionnaire

The college groups t-test results are given in Table 15 (p. 75) for this measure. Figure 6 graphically displays the results.

These results indicate that the women in Agriculture tend to be satisfied with administrative authority and support and participate in student activities. From these traits we can see that for this particular group of women in Agriculture they are happy with the administrative dimensions of the university. This group is also more interested in student affairs than either of the other two college groups. In general, they seem to have strong feelings of support for the university and the activities within it.

From the data, the Education women exhibit satisfaction with administrative authority, a desire to meet their academic obligations, and support and take part in student activities. Two of the traits are similar to those for the women in Agriculture, but the women in Education also seem to exhibit a more serious concern about academic obligations and plan carefully to meet them.

The LAS women have a more unique pattern on this measure which suggests that they perceive themselves as being independent of family

TABLE 15

## ATTITUDES AND REACTIONS OF WOMEN COLLEGE GROUPS

Scale	Ag. (N=43)		Ed. (N-69)		LAS (N-172)		F	p
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.		
1. Family independence	24.42	4.69	22.43	6.16	25.72	6.88	6.56	.01
2. Peer independence	24.35	4.14	23.61	5.07	25.33	4.71	3.48	.05
3. Liberalism	24.44	4.40	25.83	4.19	28.29	7.01	8.93	.01
4. Social conscience	29.00	4.78	29.94	4.86	30.42	5.82		
5. Cultural sophistication	23.28	4.65	23.41	5.44	26.81	6.50	11.27	.01
6. Satisfaction with faculty	25.28	5.21	24.97	4.68	24.68	5.25		
7. Satisfaction with administration	25.49	4.88	25.80	5.36	23.27	5.49	6.91	.01
8. Satisfaction with major	24.37	7.18	26.16	6.21	26.10	7.96		
9. Satisfaction with students	25.05	3.79	25.04	3.91	25.59	5.24		
10. Study habits	24.67	4.03	26.91	4.76	24.40	5.03	6.93	.01
11. Extracurricular involvement	20.33	4.17	18.54	3.24	17.33	4.32	9.95	.01

TABLE 15 (continued)

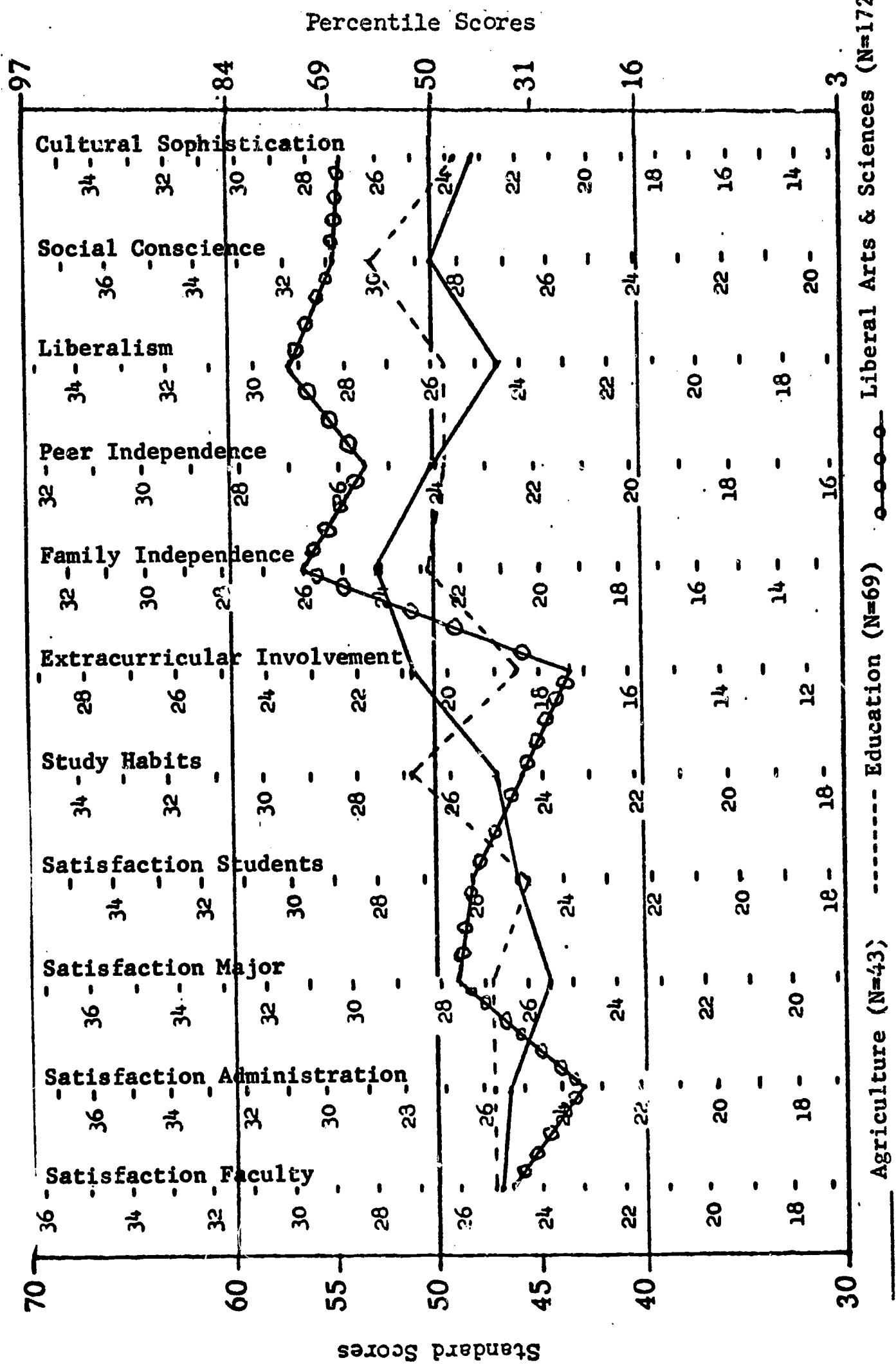
t-tests: Differences between College Groups

Scale	<u>Ag.</u>	<u>Ed.</u>	<u>LAS</u>	<u>df</u>	<u>t</u>	<u>p</u>
1. Family independence		x	<u>x*</u>	236	4 .06	.01
2. Peer independence		x	<u>x</u>	237	2.96	.01
3. Liberalism	x	x	<u>x</u> <u>x</u>	208 235	5.55 4.81	.01 .01
4. Social conscience	x		<u>x</u>	210	2.66	.01
5. Cultural sophistication	x		<u>x</u>	211	4.01	.01
7. Satisfaction with administration	<u>x</u>	<u>x</u>	x x	212 239	2.37 3.21	.05 .01
8. Sat sfaction with major	x		<u>x</u>	200	3.06	.01
10. Study habits	x	<u>x</u> <u>x</u>	x	111 239	2.57 3.56	.05 .01
11. Extracurricular involvement	<u>x</u> <u>x</u>	x	x x	111 212 239	2.54 4.10 2.01	.05 .01 .05

\*Underlined Group had Highest Mean Score

FIGURE 6

PROFILE OF COLLEGE GROUPS



and peers, as being social liberals, and as having a wider range of cultural interests than most of their peers. This group feels itself pretty autonomous, independent of the whims of parents and peers. There is a concern evidenced about social forces in contemporary life, yet there is an awareness and appreciation of the heritages within the culture, too. The orientation of these women might be considered to be primarily outside of the university setting; for the women in Agriculture and Education the orientation seems to be within the university setting.

#### Analysis of Covariance

This study had 56 independent variables that needed analysis as to their relative strengths in predicting grade point average, the dependent variable. It was determined that an analysis of covariance, using linear regression of the 56 independent variables on the dependent variable, would provide the best analysis of the variables contributions to grade point prediction. To obviate the results being confounded, certain secondary dependent variables were also controlled in the analysis of covariance. The control items were:

Colleges--Agriculture, Education, Liberal Arts & Sciences  
 Groups--(1) High achievers, and (2) Average achievers  
 Interaction--Colleges and Groups  
 Achievement--SCAT Verbal Achievement and SCAT Quantitative  
 Achievement  
 Grade Point Average (Dependent Variable)

The 56 independent variables in the program included the scales and factors from the following measures:

Self concept--Adjective Check List -- 24 scales  
 Environment--College Characteristics Index -- 13 factors  
 Motivation--Personal-Social Motivation Inventory -- 8 scales  
 Attitudes--College Student Questionnaire -- 11 scales

The Faculty-Student Relations Index was not included in the covariance program since an analysis of variance on the factor items had not shown any differences at a significant level between the high and average groups.

The sample used in the analysis of covariance was reduced to 193 (original study N=286) because of the lack of achievement test data for the balance of the study sample. From the printout the significant results of prime interest are within the t-test section, which used the formula

$$t = \frac{\text{regression coefficient}}{\text{standard error of regression}}$$

which tested the hypotheses that the coefficient of the regression was zero. Thus, you can tell that if the t result is non-significant that the regression slope is believed to be zero. Therefore, that particular variable has no predictive value. With a significant t result, the regression slope is not zero and the variable does have some predictive value. From the t-results it is possible to judge whether or not the contribution of the independent variable is significant. The t is not used to indicate differences between means.

Two programs were run through the computer. The first analysis was made up of all the control and independent variables previously described. The second analysis eliminated nearly all of the variables that were not significant on the first program. The results for these two analyses are shown in Table 16. The SCAT scores for Verbal and Quantitative skills were kept in both runs.

TABLE 16  
SIGNIFICANT PREDICTORS RESULTING  
FROM ANALYSIS OF COVARIANCE

Test-Variable	$\bar{X}$	S.D.	1st Run (df = 63)		2nd Run (df = 11)		
			* t	p	* t	p	
SELF CONCEPT:							
Autonomy	1.77	4.99	2.01	.05	-1.15	.3	NS
ENVIRONMENT:							
Work-Play	13.26	4.38	6.84	.001	9.47	.001	
Non-Vocational Climate	22.97	6.35	-6.50	.001	-8.88	.001	
Intellectual Climate	30.08	9.45	-2.63	.02	-3.27	.01	
Academic Climate	13.63	4.10	2.03	.05	2.34	.05	
Play-Work	25.34	6.04	6.85	.001	9.50	.001	
Vocational Climate	25.37	6.75	-6.56	.001	-8.96	.001	
MOTIVATION:							
Intellectual Autonomy	22.74	7.51	-2.55	.02	-1.90	.1	NS
ATTITUDES:	NONE						
GROUP: <sup>a</sup>	.409	4.42	-8.26	.001	-18.40	.001	
SCAT:							
Verbal	43.22	11.54	.799	.5NS	.949	.4	NS
Quantitative	38.13	9.77	-2.33	.05	-1.39	.2	NS

\*Testing regressions slope

<sup>a</sup>Signs reversed on this variable--negative coding on program input

The results from the covariance program on the first analysis indicated that ten of the variables contributed significantly to prediction of grade point average.

#### 1. Self Concept

The self concept measure had one scale--Autonomy--that attained a level of significance. This scale defines individuals who seem to be able to act independently of others. From the result on the first run autonomy and college achievement appeared to have some relation to one

another. It would appear that the ability to be self-sufficient would be related to successful grade point achievement.

It is plausible that autonomy strengths are related to achievement level in most cases. It would be unlikely that academic development would take place if the student was overly dependent on others. The strength of this variable diminishes when related only with the significant predictors of GPA.

## 2. Environment

Six of the thirteen factors from the environmental measure yielded t-scores at significant levels. The factors were:

Work-Play	(positive relation)
Non-Vocational Climate	(negative relation)
Intellectual Climate	(negative relation)
Academic Climate	(positive relation)
Play-Work	(positive relation)
Vocational Climate	(negative relation)

It is important to note that Work-Play is inversely scored from Play-Work, and Non-Vocational Climate is the inverse score of Vocational Climate. The four prime factors in the environment index that seem to have strong relationships to grade point achievement are:

Work-Play (Play-Work)  
Non-Vocational Climate (Vocational Climate)  
Intellectual Climate  
Academic Climate

As the signs with the t's indicate, we have mixed valences among the environment factors. There is a positive relationship of grade point to the Work-Play or Play-Work factors. Grade Point Average (GPA) seems to be appropriately affected by the subjects' interests in concentrating on their academic work or allowing themselves to be caught up in the pleasurable activities of college life. Since the t-tests

on these factors were at such a high significance level ( $p$  less than .001), it seems to indicate students' dedication toward either academic work or collegiate play will be reflected in the majority of cases by their level of academic achievement.

On the Work-Play dimension, high achievers seem to exhibit less involvement in collegiate activities. Their interests seem to encompass a broader range of activities. The average achievers indicate more interest and involvement in collegiate affairs. From the inverse factor, Play-Work, the high achieving group seems to feel that the opportunities for collegiate activities are quite ample while the average group indicates that expansion of collegiate activities is needed. This may reflect less need on the part of high achievers to find outlets in social dimensions and hence they are satisfied with the available array of collegiate pursuits. On the other hand, average achievers seem to crave social involvement on a larger scale and may feel somewhat dissatisfied with the range of available pursuits.

The Vocational and Non-Vocational Climate factors yielded negative  $t$ -scores at a highly significant level ( $p$  less than .001). Traits reflected by these factors are the practical and non-practical shown by applied-conforming type activities versus artistic and theoretical pursuits. Since the  $t$ 's were negative it would seem that these factors are inversely related to grade point. For example, if the student's perceptions of the Vocational or Non-Vocational Climate seem to be high, then there is a likelihood that her grade point would be at a lower level. Conversely, if the grade point is high, then there is an indication that her perception of applied and/or theoretical-artistic opportunities would

be low. However, the negative relationship may also be a reflection on the part of these women that they feel no compulsion to conform to the applied activities of their environment, nor do they necessarily feel that they have the opportunity to engage in artistic and theoretical activities.

For the Non-Vocational factor, the results would indicate that high achievers seem to feel a lack of opportunity to engage in theoretical and artistic quests since the stress seems to run more toward conventional education. Average achievers seem to indicate the opportunities for such impractical pursuits are adequate as far as they are concerned.

From the Vocational factor, the high achievers seem to perceive the university as not placing enough emphasis on applied work while the average group feels that applied work is adequately emphasized.

Intellectual Climate was another environment factor with a negative t score. The indications from this were that perceptions of the university's staff and physical facilities were also inversely related to grade achievement. This suggests that high achieving students were not as favorably impressed by the staff and plant of the university in general while these elements were more positively viewed by the students with lower grade point averages. From this it would appear that high achieving women are more critical of the intellectual elements of the university than their average achieving peers in the study. This reaction also may be due to the varying degrees of interest about things intellectual. For example, average achievers may not be concerned about elements in the Intellectual Climate of the university, or they may lack the perception to appraise the Intellectual Climate in any depth. High achievers seem

to feel the university is lacking in the support it gives to humanities, aesthetics and intellectual pursuits in general.

Academic Climate was the final factor of the environment index with a significant result, positively directed. The responses seem to indicate that perceptions of the Academic Climate were related to the grade point levels of the subjects. The curricula offerings and the staff in their major fields seem to be perceived as being excellent by the academically successful. The positive reactions to the quality of the academic program seem to diminish as the GPA goes down, according to these results.

Average achievers may be less cognizant of, or less inclined to feel that their curricula areas stress academic excellence. High achievers, on the other hand, feel that academic quality is adequately stressed by the staff in their major areas.

### 3. Motivation

Intellectual Autonomy was the only scale on the motivation inventory to attain a significant t level (negative). This scale attempts to describe a person who can reach independent conclusions and is able to persist in her judgments. This trait seems to be inversely related to grade achievement in this study sample.

On first appraisal, this result suggests a seeming lack of ability on the part of the high achievers to make independent conclusions and be able to stick to them. However, this may also reflect a desire on the part of the high achievers to succeed with the faculty and not be "too different" from their instructors in arriving at conclusions. They may feel the lack of opportunity to be intellectually independent in their quest for academic success.

For the average achievers, it would appear that they are able to reach conclusions independently. However, it may also reflect a trait of not reaching any conclusions--a feeling of indifference to intellectual pursuits on the part of the average group.

#### 4. Attitude

None of the items on the attitudinal measure attained a significant level in the analysis of covariance. The scales on the College Student Questionnaire seem to be relatively independent of grade point achievement for this study sample.

#### 5. Achievement

The next to last significant relationship to grade point average was for the achievement groups. Since the achievement groups were defined by grade point it would be expected that there would be a significant relationship between groups and GPA. The reason for the negative  $t$  is that the groups were coded negatively in the program for analysis of covariance. The significant levels were equally high on both runs.

The final result was a negative  $t$  ( $p$  less than .05) on the SCAT Quantitative score. This score is based on numerical reasoning and computation skills. The result suggests that such skills seem to have little bearing on the ability of the women in these curricula areas to achieve academic success. The average achieving women seem to be somewhat stronger in this area than they are in other achievement dimensions. For the high achievers it suggests that their ability levels are found more in other dimensions than numerical skills.

On the second analysis, seven of the variables that were significant on the first analysis maintained significant levels. They were the six

environment factors plus the grouping factor. The scales and scores on the self concept measure, the motivation index, and the SCAT measures that had been significant on the first analysis dropped below an .05 level on the second analysis.

The results of the analysis of covariance program seem to suggest that perceptions or attitudes about the college environment seem to have the strongest relationship to academic success. In this study, measures of personality, motivation, attitude and achievement in the final analysis seem to contribute little to predicting grade point.

The elements of grouping (college and/or grade point) and achievement skills had been controlled in the covariance program and the environment factor results were highly significant. We conclude for this study sample that academic success can best be predicted on the perceptions and understanding the student has of her university environment and its assorted pressures.

#### Related Items

##### 1. Satisfaction and Problems in College

Two items on the College Student Questionnaire relate to the greatest satisfaction found in college and to the greatest problem experienced at college this year. The distribution of the responses in these areas is given in Table 17 for the groups by colleges and by achievement level.

In the satisfaction area both the high and average achieving groups were most satisfied in the dimension of Self-discovery, Self-insight for the problem area the item seen as most important by both Group I and II was Achieving Sense of Identity.

TABLE 17

SOURCES OF SATISFACTIONS AND PROBLEMS IN COLLEGE  
GROUPS RESPONSE PERCENTAGES

<u>Satisfactions</u>	College Groups			Achievement Groups	
	Ag. (N=43)	Ed. (N=69)	LAS (N=172)	I (N=127)	II (N=157)
Coursework	27.9%	34.2%	31.8%	29.1%	34.4%
Individual style or research	4.7	4.3	8.1	9.4	4.5
Social activities	35.0	34.3	29.5	28.4	34.4
Self-discovery, self-insight	32.6	25.7	28.3	31.5	26.1
-----					
<u>Problems</u>					
No major problems	16.3%	31.4%	11.6%	14.2%	19.7%
Finances	7.0	5.7	6.4	5.5	7.0
Handling content of courses	23.3	15.7	10.4	9.4	17.2
Meeting and relations with members of opposite sex	14.0	17.1	17.3	17.3	16.5
Deciding on major field	0.0	0.0	5.2	3.1	3.2
Parent or family relations	2.3	4.3	3.5	5.5	1.9
Achieving sense of identity	34.9	21.4	34.7	37.0	27.4
Other problems not mentioned above	2.3	4.3	9.2	7.8	6.4

Personal identification seems to rank as the major dimension in the lives of these women students. For some, whether high or average academically, college experiences help in self-discovery and the expansion of self insight. For others, in either academic range, the experiences in college have not helped them to achieve a sense of identity. The multiplicity of forces prevailing in a large university may create barriers, real or imaginary, for these women in their attempts to achieve personal identification.

## 2. Perceptions of Women's Role

Four areas that relate to the role of women as perceived by this study sample are as follows:

Home versus Career Choice: The most frequent choice (49.6%) for Group I women was being a "married career woman with children." For Group II the first choice (45.2%) was "housewife with children," but it was followed closely by the "married career woman with children" item (43.3%). There was some uncertainty expressed by both groups. The one major indicator is that both groups of women are interested in marriage, career or no career. That this question of marriage no longer concerns some of the women in study was revealed in the subject data which indicated that 33 (11.6%) of the women in this study were married.

Preferred Career Area: The concentration on marriage is carried out in these responses with the highest given to "a life centering on a home and family" by both groups (Group I 39.4%; Group II 43.9%). "An academic life" was the next preference for both groups, indicating that teaching or related activities seems to have the lead in these expressions of career choices. This, of course, follows the national

employment patterns in that the majority of college trained women are in the teaching profession.

Attitude Toward Role of Women: The marriage orientation is carried on in this scale with the majority of both groups (Group I 52%; Group II 57.3%) responding to the choice "divide time at home and work if children in school." Marriage and families are of major importance but jobs will be taken once children are of school age. The next most frequent response for both groups was "be free to choose," not feeling that present reactions should be any commitment as to their future decisions.

Desired Number of Children: The interest in a family is quite strong. Only three percent of Group I and two and one-half percent of Group II express no desire for children.

### College Typologies

The College Student Questionnaire sketches four philosophies for the student to select from as being descriptive of her personal orientation. Each philosophy is rated on a four point scale from being most accurate to least accurate. The philosophies are based on the typologies of college subcultures developed by Clark and Trow (1962) which are:

Vocational Orientation: college is seen by this subculture as the final training phase for a career.

Academic Orientation: this subculture is concerned with intellectual pursuits.

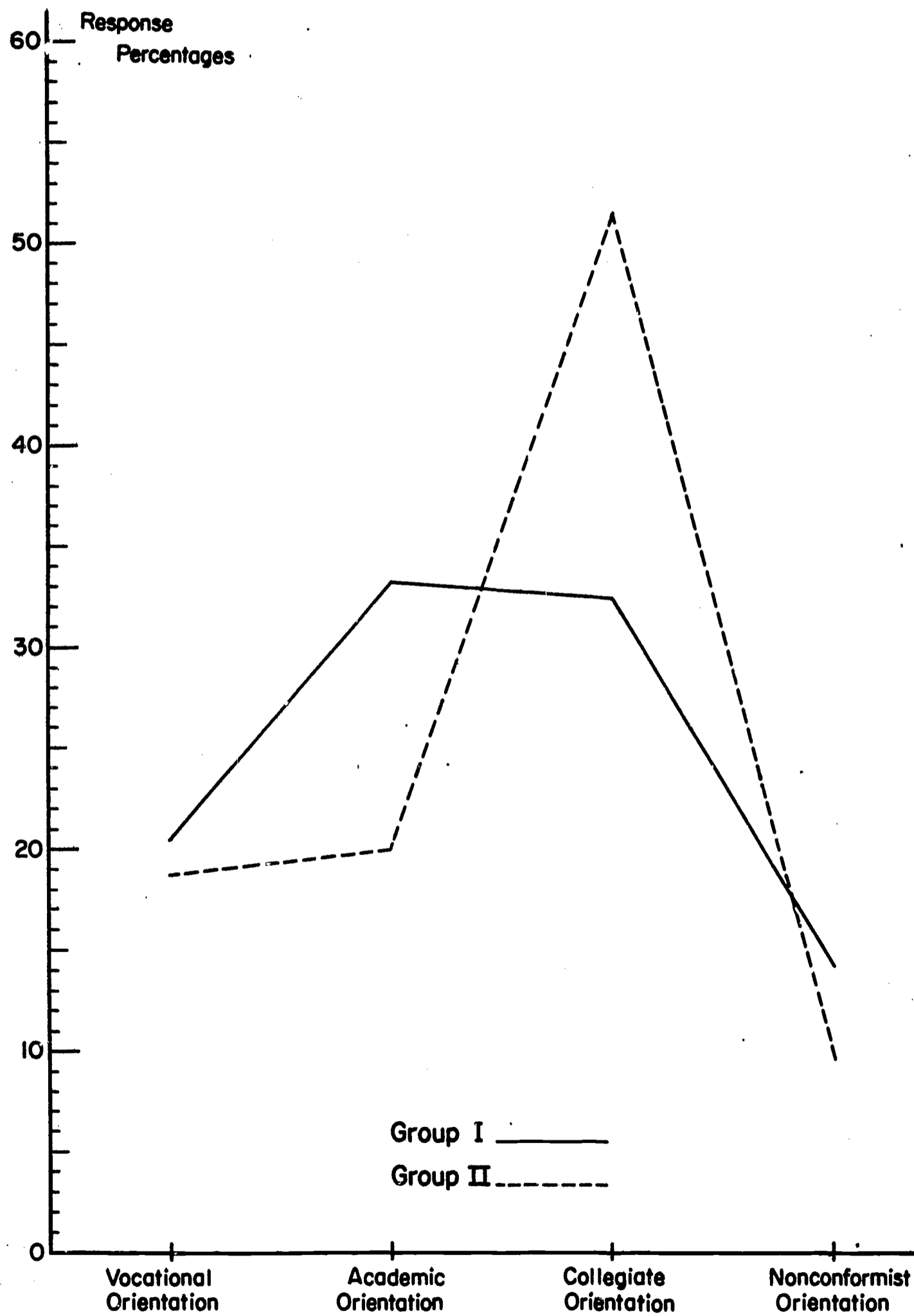
Collegiate Orientation: pleasure seeking and social involvement are the main elements of this subculture.

Nonconformist Orientation: members of this subculture are seen as rebels against the establishment, partly because of their attempts to establish a distinct identity.

Figure 7 shows the orientation profiles for Group I (high achievers) and Group II (average achievers).

FIGURE 7

## COLLEGE TYPOLOGIES



From this figure we can see that a majority of the Group II women see themselves as being primarily collegiate in orientation. This dominated the profiles for both groups. The social activities of the campus are of most interest to people with this orientation. That the women of Group II seem to be more oriented to this typology is further substantiation of their interest in social relations as discussed in the results of the environmental and motivational measures.

The women of Group I were higher in all of the other orientations, vocational, academic and nonconformist, than the Group II women. This represents, with the first two typologies, a more serious indication on their part toward a career and academic success. For the last typology it may be an indication that some of the Group I women are more anxious to test their ideas and not be so acquiescent in bowing to the conforming influences of college life.

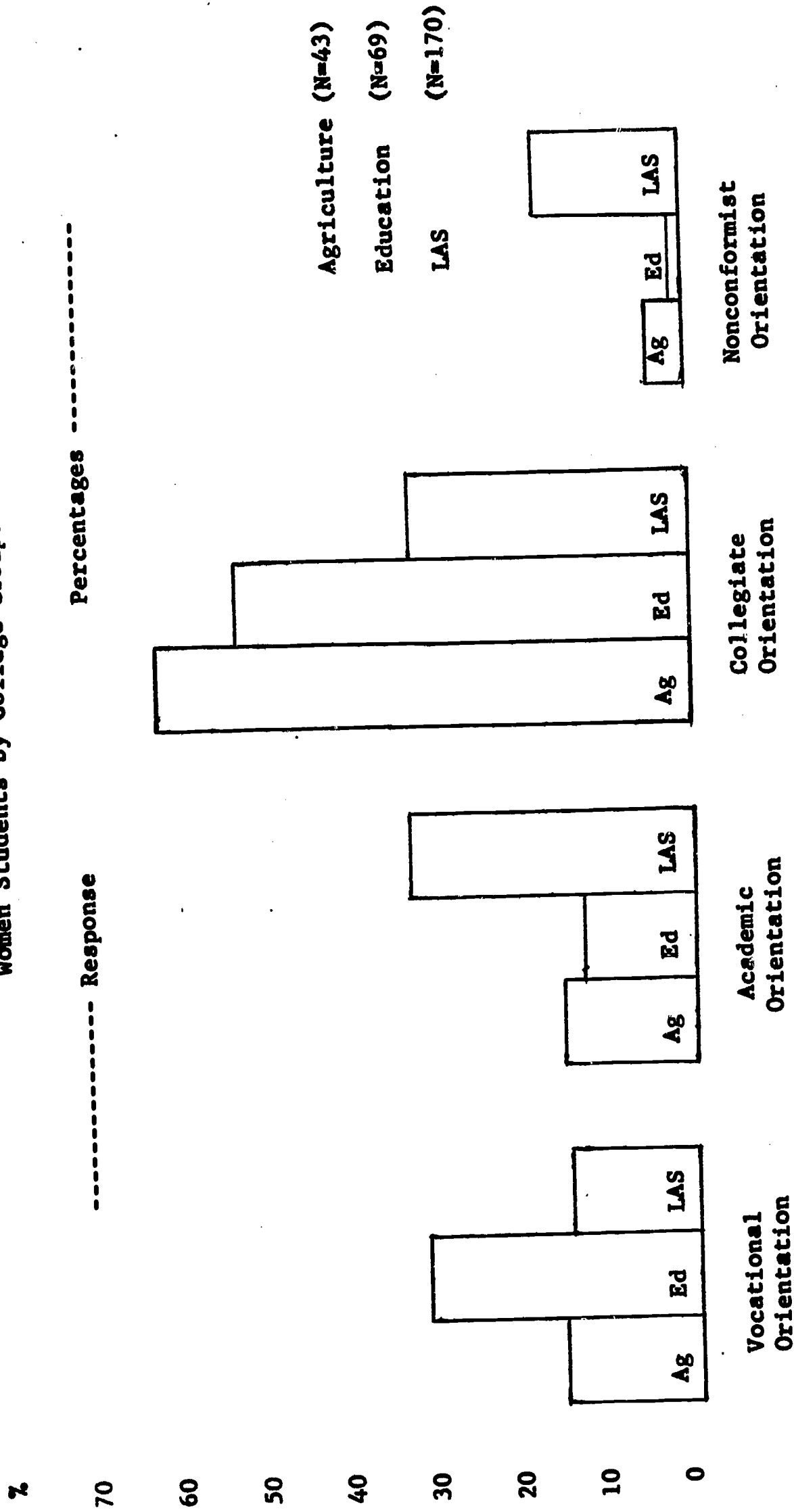
It must be noted that collegiate orientation ranked almost as high as did academic orientation for the high achievers (Group I). Less than one percentage point separated the two rankings. From this indication, social relations and activities are seen as being important to the women of Group I, as well as their pursuits of academic success.

Figure 8 shows the orientation of the study sample by the college groups. The women in Education dominate the vocational pattern. Academic orientation is rated more highly by the women of LAS than the companion groups. The groups in Agriculture and Education rated collegiate orientation high. The women in LAS dominated the pattern for the nonconformist orientation. This graphically substantiates some of the earlier implications from the results. For example, the women in Agriculture and Education reported strong interests in social relations and activities.

FIGURE 8

COLLEGE TYPOLOGIES -- COLLEGE GROUPS

Women Students by College Groups



The pattern in Figure 8 shows these two groups to be quite high in collegiate orientation which is largely based on the social aspects of college life. The stronger expression of vocational orientation on the part of the women in Education would seem to indicate that there is a tendency on the part of some of them to meet their commitments towards their major field and go into teaching. An academic orientation seems to be indicative of intellectual concerns and the women of LAS have expressed themselves on other measures as being interested in ideas and the opportunities for testing ideas. The LAS group also indicated they were more interested in the nonconformist orientation, being descriptive, perhaps, of their independence feelings.

Once again the social dimension has been designated as most important, for all three groups rated it as high, or higher, than any other orientation. More unique patterns were demonstrated on the other three orientations making up the college typologies.

#### Summary of Results

The evidence generated from the processed data was used to answer the questions posed in the Problem section, to discuss the relations of the independent variables to grade point average, and to appraise other information. While all of the questions could not be answered definitively there were patterns for each of the achievement and college groups. The data were comparative in nature and stress on particular dimensions does not imply that such items were the unique property of any particular group. The relationships between the groups were "more than" or "less than" rather than all or nothing.

## 1. Achievement Groups

The self-reported evidence from the high achievers indicated that they perceived themselves as being strong in self concept and confident in their own abilities. They felt that they operated autonomously with their efforts being characterized by purpose and order. Their academic success seemed to make the Group I women more responsive to the faculty. They seemed rather perceptive of the environmental forces and the methods needed to cope with these forces. These high achieving women seem to be more aware of the dynamics of our culture and society, ranging beyond the immediacy of their peers and the college environment. In general their traits reflected maturity, self-control and self-direction. The superior students were more critical of the general educational qualities observed at the university but felt their specific educational areas were excellent, especially the faculty.

The average achieving women of Group II express their primary interests in social dimensions and the social relationships available to them on campus. The strong needs reported by this group for social affiliation may be limiting their perspective of their environment. Pursuits are more pleasure-directed than academically directed. They have strong interests in life, men, and social activities.

The qualities of the university staff and facilities favorably impress the women of Group II and they indicate that the stress on things academic, applied and theoretical is adequate from their viewpoint.

## 2. College Groups

The following discourse is based on the comparative findings for the three college groups.

The women in the College of Agriculture indicate that their attention is largely focused on the social dimensions of college life. Their social activities are a source of pleasure and they may be using social relations to satisfy some of their dependency needs. While they reflect a willingness to work and to persist in their activities, they do not express a strong level of confidence in themselves nor in their organizational abilities. These women see themselves as open, friendly and happy with their college roles.

The College of Education study sample also seems to be strongly oriented toward the social dimensions of the university. Many of the trait interests that these women display involve group activities and social relations. This dependency on peers and need for group activities might be having a conforming influence on these women. This group may consider this as desirable since they express feelings of wanting direction from significant people in their lives. The young women in Education are favorably impressed by their college experiences and their contacts with the university. They see themselves as taking their academic work seriously and handling it in an organized fashion. They seem to reflect open and friendly attitudes and a general enjoyment of life.

The reports from the women in the College of Liberal Arts and Sciences develop a pattern that is in contrast with the other college groups. The women in LAS see themselves as being relatively independent and unrestrained in their attitudes and interest preferences. They seem to desire change and perceive their reactions as being nonconforming to the traditional patterns of society. They reflect a sense of inquiry and interest in new concepts. Conclusions are reached autonomously but their orientation tends to be liberal and global in scope, making their social

interests extend far beyond the confines of the university campus. The women in LAS also reflect in their response patterns more of a concern for their self-images, roles, and status. Perhaps this is more prevalent for them because of their expanded awareness and interest in the broader issues of contemporary society. Nevertheless, groups such as these women in LAS could, and perhaps do, serve as catalytic agents among their peers.

### 3. Analysis of Covariance.

This analysis indicated that environment factors contributed most significantly to the prediction of grade point. Attitudes and perceptions regarding Work-Play, Vocational Climate, Intellectual Climate and Academic Climate seem to have the greatest relationship to academic achievement for this sample. This indicates the importance of the individual's orientation toward things academic. If other interests take precedence, academic attainments will diminish.

### 4. General Areas

There were a number of areas wherein the responses were similar across groupings, whether achievement level or college. One item received the strongest reaction as both a source of satisfaction and as a problem--it was the personality dimension self-discovery or personal identification. While not reaching majority proportions in any group, this item was uniformly reflected as being of great importance to these women.

A common reaction from both high and average achieving groups was that the preferred choice in the future would be for marriage and family

with a large number adding a career to the combination. While the traditional role of woman in our society was being carried forward, that of marriage and family, there were strong indications that a career would be an important part of the college woman's future.

## CHAPTER IV

## DISCUSSION

The diagram of the college student and her environment (Figure 2, p. 23) establishes a frame of reference for discussing the results of this study. We will look at the contributions of the individual in developing her role as a woman college student. We will then look at the environmental forces as perceived by the study sample. Because of the ex post facto nature of this study, causal relationships are neither identified nor implied.

The final sections will deal with some of the implications arising from the study and areas of further research that need consideration.

1. Individuals

- a. Self Concept

The high achieving women of Group I were noted as being more serious, responsible, intelligent, persistent, self-controlled, organized and dependable--all important elements of the self concept. They are also the kind of traits that are developed over a lifetime. No one enrolls in college and suddenly acquires such strengths. These traits can be used effectively in the college situation to help individuals cope with the demands of academic work and to maintain control over excessive social influences and pleasurable activities. By not yielding to too many temptations and by maintaining their work efforts, these young women have been able to do academically superior work in college. High achieving women have the ability to be self-critical and to avoid complacency. Previous success is used as a step upward toward new attainments. A healthy outlook on life is reinforced by a strong self

concept. The Group I women seem to be functioning effectively in keeping their self concepts open and growing. If they continue to make intelligent use of their talents and self-control, their success patterns should also continue. The feelings of confidence in themselves and their abilities help these young women to develop their interests in intellectual dimensions. Their energies and interests are combined for effective academic attainment.

The women of Group II, the average achievers, have described themselves as being more spontaneous and excitable, as reflecting a stronger interest in the opposite sex and in life around them, as being relatively poor planners and self-starters, and as having a stronger tendency to act impulsively. Such items reflect a concern for the moment--the people and things immediately about them. Long range considerations are not as important to them. Persistence is an important motivational force in academic attainment. The seeming lack of persistence among the Group II women may be a significant element that distinguishes them from the high achievers. Another consideration is that these self-reported traits may contribute to, or be caused by, the desires on the part of the Group II women for social involvement of all types. This is substantiated by their apparent stronger interest in things of the moment and their permissive responses to external forces. Commitment is lacking toward things academic, for fear that the demands will be too great in terms of time and effort.

Whether academically superior or average, these young women generally seem to be happy, self-sufficient, and enjoying their college experiences. The differences in focal points reflect that high achievers are more committed to, and enjoy working more in the intellectual areas. Such

pursuits are of more interest and seem to better satisfy the personal needs of the women in the high group.

What needs and interests of the high achievers are being satisfied in particular? Does the satisfaction come because there is more purpose and sense of direction from these women? Is there more advice and encouragement for those women from advisors and faculty because of their previous successes in their academic areas? If the self concept is being supported and stimulated by both internal and external forces, then the student is in an excellent position to expand her attainments in personal and academic areas. It would seem that the individual's self confidence would strengthen her purpose to achieve academic success. Lack of confidence might block the attempts made by more dependent individuals. High dependency needs can weaken the self concept and debilitate self-confidence. Need satisfaction must be obtained in other ways and interests are pursued that are self-satisfying. This might explain why the focus for the high achievers is on intellectual activities while the average achievers find social activities of more interest.

The self concept patterns of the women in Agriculture and Education were similar. One reason for this is the vocational orientation of their fields (Home Economics and Elementary Education). Another is that such fields have been dominated by women and hence are more visible to women who are career oriented. The patterns exhibited by these two groups hint strongly at their susceptibility to the conforming influences of society. They are interested in structured situations that provide direction for their activities. In such settings they feel comfortable and can be counted on to be dependable.

The pattern for the LAS women diverges quite markedly. For one thing the curriculum Sciences and Letters has four major dimensions and its students come from a broader heterogeneous base. Employment opportunities in their areas are also dominated by men. Enrollment in these areas is at a ratio of about three men to every two women. As a result there is much more male-female interaction in their subject areas than would be true of the classes for the women in Agriculture and Education. Another factor might be that the LAS sample is much larger.

The self concept pattern for the LAS women shows their keen awareness of changes in society and a more rebellious attitude on their part toward the status quo. They see themselves as more spontaneous and independent, but also reflect more concern over their self image. Perhaps this pattern is an outgrowth of their concerns with the dynamics of contemporary society and how they can fit into it. Since the expansion of knowledge has been so much greater in the science areas than it has been in the social sciences, the perceived disparities may be a bit unsettling to these students.

b. Motivation

From the results obtained in this area, social dimensions received stronger responses than the creative-intellectual areas. The high achievers were satisfied with their social roles and activities. Feeling their social needs were being satisfied would enable them to concentrate more on their academic objectives. An aid to this academic concentration would be the traits of purpose and self confidence that distinguished the high achievers on the self concept measure. The autonomous feelings reported on the attitudinal scales would also contribute to this. However, intellectual autonomy on the motivation measure was seen as inversely

related to grade point achievement, according to the covariance analysis. One would predict a positive relationship. The perceptions of the students actually may be more realistic when they consider the opportunities for independent thinking may be limited if they wish to maintain good relations with their instructors as well as maintain their grade point.

The social arena in university life has the most interest for the average achievers. Their social interests were so strong that they exhibit needs to exercise authority and leadership in their social relations. Such relations seem to provide a vehicle for the Group II women to attain a sense of personal adequacy. By having their social leadership qualities recognized, such activities help meet personal needs. It seems from these reports that self-satisfaction is largely gained for the average achiever through social dimensions rather than academic ones.

Intellectual-creative interests, as assessed by the measure, were not too important to these women, or they did not perceive the items on the scales as relating to their own interests. Another consideration is that social relationships can be reacted to and measured rather easily. Assessing interests in creative-intellectual dimensions is much more difficult and the power of this instrument may not have been adequate.

The women in Agriculture and Education continued their patterns of similarity in the motivation measure. Social relations dominated their responses. This may be partially a condition of their major fields where the enrollment is primarily female. Social needs may be stronger for heterosexual activity. Social gregariousness may be nurtured in such settings, also, which compels some women to search out activities that will enable them to develop and use their social skills.

The LAS group was more interested in intellectual and creative pursuits in which they could develop their own ideas and test them against traditional concepts. One must once again consider the LAS curricula areas and what stimuli they may provide for using scientific knowledge and developing a philosophic base that has personal meaning to the student. The stress in LAS would seem to lie more in the expansion of knowledge in the areas of humanities. The stress in the other college groups would be on preparation for a vocation.

c. Attitude

The high achieving women of Group I had higher scores that significantly differentiated them from the average achieving group in the areas of independence, liberal orientation, satisfaction with faculty members, and willingness to study well and efficiently. These elements may be generating a pattern of purposive behavior that helps these students to more effectively attain their academic goals. Ignoring the vacillating pressures from family and peers must help eliminate some confusion in the life of these young women and allow them to concentrate more efficiently. With adequate confidence in themselves and a sense of determination to impel and sustain them, attainment of academic success is realistic as well as desirable for superior women.

The average achievers of Group II were more negatively keyed on almost every dimension of attitude than the Group I women. This may have been due to the lack of scale assessment on the social dimensions. The pattern of typologies, however, confirmed the stronger interest of the women in Group II toward social activities with their major orientation being collegiate. This hedonistic approach to college may help in personal and social development but it would be a deterrent to intellectual

development. Such differences, while not always major, between the two achievement groups in the study do establish patterns that make it more readily understood why one group of women has been academically superior and the other group average. Feelings of independence and openness in outlook are developed on the base of an assured self concept. The individual is not afraid to be herself and to expand her personal horizons. She has the strength to meet her challenges with confidence and the control to work her plans effectively to attain success.

For the college groups the women in LAS were strong in their expressions of independence, liberal orientation and cultural sophistication. This may be an outgrowth of the work and exposure to ideas these students have had in their major fields. An awareness of change would certainly be prevalent in the areas of science and social sciences represented in these curricula areas. Cultural sensitivity would be on a higher plane, also, with greater knowledge of the forces that contribute to cultural development and some awareness of the trends shaping contemporary society. The women in the LAS group have greater opportunities to study and discuss changes in the culture because of the curricula structure in their college. It would seem plausible that the LAS women would also develop stronger feelings of independence from their families and peers. Their courses should stimulate independent thinking, the use of empirical knowledge in decision making, an awareness for establishing value bases in making judgments, and more global perceptiveness of the world around them. An awareness of expanding knowledge and social change should expand personal horizons and obviate excessive needs for personal dependence on family and peers.

The women in Agriculture and Education were happy with the Administration and not critical of its rules. This might be interpreted that the rules were seen as fair and just in managing the operations of the university. There is also the possibility that forces that influence certain rebellious elements of the student culture aren't viewed as being too important by the women enrolled in Agriculture and Education fields.

d. Ability

As other studies have indicated, (Demos and Weijola, 1962; Roberts, 1965; Hall, 1966) the use of achievement tests has been mostly ineffective in predicting academic success in college. As was noted in the analysis of covariance results, the two achievement test scores were not significant contributors in the final analysis to the prediction of GPA. Hence for this study sample we would not give much credence to the value of achievement tests for predictive purposes. The abilities used by high achievers in college work evidently range beyond the skills measured by standard achievement tests used for screening college applicants.

What may be of more significance to academic attainments in college is the personality motivational traits of the individual. If she can find ways to satisfy most of her needs, control her behavior, supply the needed efforts to meet academic demands, and be able to cope with the invitations and distractions of student life in a large university setting, it would seem that she would have the main base for achieving success in her college work. High achievement test scores would be of little value if she did not possess self-confidence, control and purposive orientation. If she is too dependent on others and is living from day to day in a collegiate, hedonistic orientation, then verbal and numerical

skills will become less and less significant in the academic achievement of this woman student.

## 2. Environment

### a. Intellectual and Non-Intellectual Climates

Perceptions of the environment seem to be major contributors to the prediction of grade point for this study sample. More than the scales on self concept, on motivation and on attitude, the environment measure had factors that seemed to relate significantly to grade point according to the analysis of covariance. When we consider that the analysis of covariance controlled for college grouping and ability level, then the importance of all aspects of the college environment takes on increasing significance.

The high achieving woman perceives herself as being treated like an adult and being allowed an adequate amount of freedom with the university. This may be partially attributable to her academic success. Such success is largely attained by self-discipline and self-organization, traits appreciated by the academic organization. Faculty members are more responsive to their better students and hence treat such students with greater respect than they might students who are not performing well. Because of this respect, the high achiever reciprocates and feels satisfied that members of the faculty are competent and are interested in their students.

The average achiever is favorably impressed with the faculty and facilities of the university. This latter point can be understood on a large university campus where there seems to be an endless array of buildings, facilities, and functions. The student's impression of the faculty may be truly felt because of the quality of the academic staff,

or it may be because of the awe she has for the whole establishment, including the faculty, or it may be because of academic challenges she has never before experienced. The other element that greatly impresses the average achiever is the social dimension of university life. She seems to feel that this presents an excellent opportunity for her to learn more about social amenities and to attain creditable social skill. The size and the complexities of the social organization on a large campus seem to have more personal meaning to her than they do the high achieving student.

The similarity of the perceptions of the Agriculture and Education women continued with the high dimensions being social organization, group activities and social relationships. The support and need satisfaction gained from these areas were quite important to the women in these two colleges. All of these areas are represented in the Non-Intellectual Climate of the university environment. As noted in the discussion of other areas, the diversity of the curricula and the subjects in LAS may be the main factors influencing these perceptions.

The results from the analysis of covariance provided some patterns on the relationships between environmental perceptions and grade achievement. The Intellectual Climate had four factors contributing significantly toward grade point prediction. The positively related factors of Work-Play and Academic Climate reflect purposeful behavior that is academically directed as well as a satisfaction with, and a desire to do well in their major fields. These high achieving students appreciate the excellence of the faculty in their fields and the students are in turn motivated by their faculty members to work and excel in their courses. On the negative side, the high achievers do not perceive much stimulation

for students to become involved in activities of a theoretical or artistic nature. Nor are their impressions of the general quality of the staff and facilities too favorable in scholarly dimensions. The ambivalence in these perceptions seems to stem from contrasts in specific and general impressions. Within their specific areas and academic contacts the high achievers react positively to the intellectual forces they observe. However, when they view the general environment of the university these high achieving women feel the university's intellectual stature is not impressive.

A factor that could contribute to these ambivalent reactions is the degree of familiarity and understanding the students possess regarding the various university dimensions. Their major fields provide the main sources of contact with the university and these are evidently viewed by the high achievers in a favorable light. This light progressively dims as the grade point goes down. The understanding of departments and their dynamics outside the student's major field will be minimal. Without an understanding of the role and function of other university dimensions the student's attitude toward them is likely to be negative, perhaps even antagonistic, if she feels other areas are treated preferentially. Examples of this might be the funding of science projects while humanities struggle along with minimal support; or the graduate and research programs seem to get a lot of attention with illustrious faculty members while many of the undergraduate programs fight for space and suffer with inept graduate assistants for instructors. None of this happens as a real dichotomy but there are ranges of support and staff quality for all areas. The differences are sometimes overstressed.

Another factor that may contribute to these varied perceptions is the magnitude of the establishment. The university is almost incomprehensible because of its size. Very few people below the top hierarchy of the university are fully aware of its varied roles, functions and goals. The student in a major area is in almost daily contact with some member of the department, has a frame of reference to work from in assessing the value of the scholarly activities therein, and has inside status with that department. When she looks at other departments in other colleges she has to do it as an outsider with no real frame of reference for evaluation. It is quite reasonable to see why the successful student may rate her specific area high but be somewhat negative about the qualities in other areas of the university.

The Non-Intellectual Climate had two factors that seemed to be significant contributors to grade point prediction. These factors, Play-Work and Vocational Climate, are inverse scores of the factors Work-Play and Non-Vocational Climate previously discussed in this and the Results chapters. (pp. 44)

b. Faculty

The interaction between successful students and faculty is probably mutually stimulated. Instructors like students who do their work capably and meet the academic demands of the course. Successful students feel that their instructors are competent and make the course interesting, according to the attitude measure. This relationship establishes a rapport that helps motivate both student and instructor to perform well in the teaching--learning situation.

On the experimental measure of faculty--student relations, the general tone of responses was favorably disposed toward the faculty

and there were no significant signs of alienation existing among these students. Whether average or high achiever, the women in this study report no serious problems regarding faculty.

c. Students

While high achievers were more independent of their peers than their average group, both groups seemed to be satisfied with the qualities and characteristics of the students on this campus. The responses by college groups to these scales were well within normal ranges (Fig. 6, p. 77).

The typologies indicate the high achieving students were more academically oriented, closely followed by a collegiate orientation. This would seem to indicate that the students in Group I have as their main goal academic success but still feel they have the opportunity to take part in the social activities of the university. This displays a good balance between academic and social pursuits. For the average achiever the social attractions of the collegiate orientation were the strongest. Such a response would further substantiate the social interests of the average group. Within this limited sample there seems to be little in the academic or other orientations that interests or appeals to the average group except the social aspects of the university.

From one point of view we can place the responsibility on the students for these orientations. They will find and pursue what interests them. However, from another point we must consider whether heavy social involvement is strictly caused by personal needs or if such involvement is used as a substitute. Is the academic sphere in the university seen as a passive area that lacks dynamic appeal? If the quest for knowledge is looked on as unstimulating and unrewarding, then it will be of little

interest. Social activities are pleasurable and dynamically active, hence, a most viable substitute for dull pursuits in the academic realm.

### Implications

The foremost implication developed in this study is the importance of the environmental press on the individual. If the woman college student understands how to use and/or cope with environmental forces, she is in a much better position to achieve success in the academic realms. This suggests first of all that the goals of the university, colleges and departments need to be adequately explained to students in an active and thorough manner. The intellectual climate of the university should become as prominent as the social climate.

Next, early orientation as to the operations and structure of college academe as compared to high school environment needs to be explained and periodically restated for the teacher-learner roles have shifted in terms of individual responsibility. The third item that arises is the role of the college in orienting students toward their future vocational and social responsibilities in our society. College education for women no longer lies primarily in the realm of the "social finishing school" and hunting grounds for husbands.

Fourth, it would seem that the strong social interests of many college women could be capitalized on to introduce them to the extensive intellectual and cultural activities in the university. Seminars for women students could do much to expand their horizons and to increase their awareness and appreciation of the activities in other departments of the university. Many of the intellectual assets of the university seem to be hidden from the range of perceptiveness attributed to the

women in this study. Expanded understanding and awareness of intellectual activities needs to be stimulated. Reciprocally, heightened understanding should in turn help stimulate university elements to elevate their standards of excellence. Finally, some additional thought might be given to the extrinsic motivation forces (or lack of them) that are present in the university environment. If the individual is lacking in self-confidence and is unsure of good procedures to follow, her attempts to gain knowledge may easily wind up as failures. Such failures quickly inhibit efforts to expand intellectual horizons and the individual's energy output rapidly diminishes in academic areas. Extrinsic elements that support and help the student can help her proceed and persist.

Within the limitations of this study it would seem that more adequate profiles are needed on college students. For example, information is needed on socio-economic background, high school type and enrollment, type of community (rural, industrial, suburban, urban), education level of parents, special talents exhibited in areas other than academic, and so on. High school rank and grades, and college achievement tests seem inadequate when considering the personality and social dimensions of each individual. More background information on students would help in efforts to program for individual needs and stimulating educational experiences.

If the quest for achieving personal identity and self-understanding is as important as has been indicated in the various findings of this study, it would seem that a series of seminars, or even some course-work, on the roles of the college student and the university would be appropriate. The transition from the family and high school to an individual student in a large university is a demanding one. There are shifts in pressures,

responsibilities, roles, and routines that affect attitudes, perceptions, needs and self-confidence. Many make this transition successfully, but far too many do not. Expanding the students understanding of these problems and pressures and how to cope with them should save many of our capable students from becoming college dropouts.

In summary, the findings seem to imply that we need to give more attention to establishing an adequate climate for individuals to grow in both personal and academic dimensions. Certainly there is an aura from this sample that they are generally satisfied with their college roles and their reported perceptions indicate no major problems. The findings do provide patterns that deserve attention now and in the future if college women are to develop and use their talents more effectively in society.

#### Further Research

As has been noted this is an ex-post facto study on a limited sample of college women. The results are comparative in nature and the causal relationships are not established for the observed effects.

A more controlled study that would give some indices of progress through the college years would seem appropriate. Experimental and control groups with pretests, ongoing assessments and post tests over the four year college experience would provide more definitive and reliable data. Post-graduate followup surveys of students for one or more years would help indicate directions on the use of their talents and the effective meaning of their college experiences--intellectual and non-intellectual.

A major area for further research would be in defining the abilities employed by academically successful students. What skills are required? How much of their attainment is due to intellectual capacity? How much does organizational ability and persistence have to do with academic success? How does reading ability affect the success pattern? And so on. Much more information is needed on the ability factors and their affects on the student in her achievement efforts.

There are many questions that could be posited on personality and motivational traits, on her dependency needs, and on the interaction effects between the college environment and the college woman student. The present need for further research arising from this study would seem to focus on the growth patterns of college women and the abilities they use in the college progression. Longitudinal studies in these areas will expand our understanding of college women and will provide some important suggestions as to the better utilization of their talents in our society in the future.

## CHAPTER V

## SUMMARY

## Purpose

This exploratory study was designed to compare a group of high achieving college women with a group of women of average achievement. Analyses of the results from a variety of self report measures would indicate patterns that would seem to distinguish high achievers from average achievers. The data would also provide some assessment of individual traits and perceptions of the college environment as reported by the women students in the sample. The results would provide some indices as to individual strengths in personality, ability and attitude. They would also indicate some of the forces in the college environment that have influence on the women students in the study.

The major components of this study were grade point average achievement level, self concept, environmental perceptions, motivation index, faculty student relationships, and attitude scales. These areas were selected to cover some of the main areas of the woman's phenomenological base. To form a frame of reference for this exploratory study, the following questions were proposed:

1. Do academically superior women have a more positive self concept than average achieving women students?
2. Are the needs of academically superior women more outwardly directed than inwardly directed?
3. Will high achieving women be more influenced by the intellectual climate of the university than average women?
4. Are high achievers more immune to the social forces in the university than the average achievers?

5. Do academically superior women students operate on a higher motivational level than average achievers?
6. Do academically talented women respond more favorably to the faculty than do average women students?
7. Are high achieving women more independent than women of the average group?
8. Do high achieving women students find more satisfaction in the college structure than their average peers?
9. Are the goals of the high achieving woman student greater in the academic dimensions than the average achiever?
10. Are study habits stronger among academically superior women than academically average women?
11. Do high achievers exhibit more awareness of social and cultural areas than average achievers?
12. Are there unique differences characterizing women students by college areas?

The terms superior student, high achiever, or academically talented student were used interchangeably.

#### Procedures

The subjects were 286 women students on the Urbana campus of the University of Illinois in the Colleges of Agriculture, Education, and Liberal Arts and Sciences. To be selected they had to be either juniors or seniors in certain curricula in their colleges. Participation was limited for the high achieving (Group I) to women with a grade point average (GPA) of 4.0 or higher (5.0 =A). The average achieving group had grade points that ranged from 3.3 to 3.8.

The final sample was made up of 43 women in Agriculture, 70 in Education, and 173 in Liberal Arts and Sciences. Group I (high achievers) had 128 women (45% of the sample), while Group II had 158 women (55% of the sample). The sample represents between 10% and 18% of all of

the junior and senior women in the three colleges named. The girls came mainly from urban area high schools with the usual family background being middle or upper class.

Seven hundred and one letters of invitation were sent out with a result of 286 students electing to take part. Measurement sessions were held eight evenings that required from two to three hours time. The measures used were:

Self Concept	<u>Adjective Check List</u> by Harrison B. Gough and Alfred B. Heilbrun, Jr., National Computer Systems, Minneapolis, Minnesota, 1962.
Environment	<u>College Characteristics Index</u> by George G. Stern, National Computer Systems, Minneapolis, Minnesota, 1963.
Motivation	<u>Personal-Social Motivation Inventory</u> by E. Paul Torrance, Bureau of Educational Research, University of Minnesota, Minneapolis, 1963.
Faculty-Students	<u>Faculty Student Relations Index</u> by David C. Epperson, College of Education, University of Illinois, Urbana, 1966.
Attitude	<u>College Student Questionnaires</u> published by Educational Testing Service, Princeton, New Jersey, 1965.

All data were processed on the 7094 computer using statistical programs for analysis of variance, t-tests, and an analysis of covariance program.

### Findings

The data were comparative in nature and the results should be considered as a "more than" or "less than" relationship.

High achieving women (Group I) indicated traits of a strong self concept, of confidence in their abilities, of independence, of purposive behavior, of responsiveness to and rapport with faculty, and of broad

perception of the forces in the environment. Their socio-cultural awareness is at a higher level and they perceive the intellectual climate at a lower level than the women of Group II. In general the high achievers seem to reflect maturity, self control and self-direction.

Average achieving women (Group II) indicate their primary interests are the social relationships and activities in the university. Their strong needs for social activities may limit their perceptions of the total university environment. Pursuits for the Group II women are more of the moment and pleasure-directed.

The women in Agriculture are friendly individuals, seemingly happy with their college roles. Social dimensions occupy their main interests. They see themselves as not being strong in confidence nor organizational ability, although they are willing to work.

For the women in Education we find a similar social orientation. They take their academic work seriously and feel they are handling it in an organized manner. They reflect open and friendly attitudes.

The LAS women see themselves as independent, unrestrained, desirous of change and possessing a sense of inquiry. They reflect high awareness of socio-cultural dimensions. They also express some concern for their self-images, roles and status in contemporary society.

The results of the analysis of covariance program on most of the variables in the study related to grade point achievement indicated that environmental factors were of prime importance. The findings indicate that perceptions of certain environment factors contributed more significantly to the predictions of grade point than any of the scales or scores from the self concept, motivation, attitude or achievement measures. The environment factors that made these contributions were Work-Play,

Non-Vocational Climate, Intellectual Climate, Academic Climate, Play-Work, and Vocational Climate. It would seem that awareness of environmental forces and the ability to use or cope with them is related strongly to academic achievement.

### Implications

The implications were largely developed from the subjects' perceptions of the college environment. In this research it was noted that environment factors seem to contribute the most to the predictions of grade point achievement. If this is substantially correct, then some attention needs to be given to explaining to women students the goals of the university, to expand student awareness of the various dimensions making up the intellectual climate of the university, to compare and contrast programs in the university to their previous educational experiences, to capitalize on women's social interests as a means of expanding awareness in intellectual and aesthetic dimensions, and, finally, to assess the extrinsic motivation forces at work in the university to determine how much aid they provide the student or how much harm they might be doing.

At present, background information on each entering student is lacking and the profile is weak on the personal-social-cultural traits of the individual. Knowing more about students' backgrounds will enable advisors and programmers to be more effective in educational planning. With expanded knowledge about each student, better means can be found to help women attain a sense of personal identity and self-understanding.

Role functions of the student and university elements will be better understood and assimilated. Adequate climates can be developed in higher education to help students grow and mature personally and academically.

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## Appendix A

### Invitational Materials

UNIVERSITY OF ILLINOIS OFFICE OF THE DEAN OF WOMEN

30 Student Services Building, 610 East John Street, Champaign, Illinois 61822

November 18, 1966

Dear Student:

From time to time, the office of the Dean of Women is asked to authorize research in an area of college student life and education. Mr. Simmons is studying a field of direct and personal interest to each of us. That area is the woman college student. The research study that Mr. Simmons will be doing on this campus will help us in advancing our knowledge of women students as to their perceptions of the college environment, their role as students, and their interests in the academic and social life of the campus.

Your cooperation and participation in this study will be a valuable contribution. The general findings of this study will be of interest to all of us who are interested in the status and the role of women college students.

We hope that you will be able to take part in this study.

Sincerely yours,

*Miriam A. Sheldon*

Miriam A. Sheldon  
Dean of Women

MAS:us

# *Institute for Research on Exceptional Children*

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UNIVERSITY OF ILLINOIS 210 EDUCATION BUILDING • URBANA, ILLINOIS 61801 • AREA CODE: 217, TELEPHONE: 333-0260

November 18, 1966

Dear Student:

The role of women in our society is rapidly increasing in its importance in many dimensions. An area that has needed attention for some time is that of the woman college student and her attitudes and reactions toward her life and activities on the college campus.

After almost a year of planning we are embarking upon a study of college women on this campus. This study is restricted to junior and senior women selected from the Colleges of Agriculture, Education, and Liberal Arts and Sciences.

We would like to invite you to take part in this program. Your participation will require about two and one-half hours of your time. For spending this time with us we will pay you a fee of five (\$5.00) dollars.

We have a series of self-report measures for you to complete. Your individual reactions will be held confidential and not revealed to any source in or out of the University setting. The areas of investigation will relate to various aspects of college life and your reactions to it. We are interested, also, in your assessment of yourself as an upper-level college student.

The study is approved by the Dean of Women and the Admissions Office, and it is being supported by a grant from the U.S. Office of Education.

We hope that you will be able to join us. Your cooperation is important and will make a valuable contribution toward the better understanding of women students on the college campus.

Detailed information on schedules is enclosed. We will look forward to hearing from you very soon.

Thank you for your interest and cooperation.

Sincerely yours,



Wilber D. Simmons  
Research Associate

WDS:npm  
Enclosure

## COLLEGE WOMEN STUDENTS STUDY

Information  
Sheet

You are invited to participate in this special study of junior and senior women from the College of Agriculture, Education, and Liberal Arts and Sciences.

The main elements in this study will be a series of self report measures that will require about two and one-half hours of your time for one evening. You will be paid a fee of five dollars (\$5.00) for this.

These measures will be given on the following nights:

Monday, December 19th	7:00 pm	269 Electrical Engineering
Tuesday, December 20th	7:00 pm	269 Electrical Engineering

or

Wednesday, January 4th	7:00 pm	269 Electrical Engineering
Thursday, January 5th	7:00 pm	269 Electrical Engineering

Please indicate your first two choices as to your availability for one of the above times on the enclosed participation form. Return this form to us as soon as possible via campus mail (drop into a campus mail box in any university building).

You will be notified by mail as to the night we can schedule your participation.

Thank you.

Wilber D. Simmons  
Research Associate

Special Education  
210 Education

WDS/ce

## COLLEGE WOMEN STUDENTS STUDY

## Participation Form

Please insert below the dates that you will be available to join us for the self report measures. We will do our best to meet your preferences.

The dates are Monday thru Thursday, December 5, 6, 7, and 8th, at 7:00 pm, in 209 Electrical Engineering.

\*\*\*\*\*

## Dates

1st choice: \_\_\_\_\_

2nd choice: \_\_\_\_\_

3rd choice: \_\_\_\_\_

\_\_\_\_\_  
Name

\_\_\_\_\_  
Social Security Number

\_\_\_\_\_  
College

\_\_\_\_\_  
Major

\*\*\*\*\*

Return form by campus mail to: Wilber D. Simmons  
Research Associate  
Special Education  
210 Education Bldg.

Your early return of this form will be most helpful!!!

Thank you.

## APPENDIX B

## ADJECTIVE CHECK LIST

by

Harrison G. Gough and Alfred B. Heilbrun

## DESCRIPTION OF THE SCALES

1. Total number of adjectives checked: No. Ckd.

Checking many adjectives seems to reflect surgency and drive, and a relative absence of repressive tendencies. . . . The individual high on this variable tends to be described as emotional, adventurous, wholesome, conservative, enthusiastic, unintelligent, frank, and helpful. . . . The man with low scores tends more often to be quiet and reserved more tentative and cautious in his approach to problems, and perhaps at times unduly taciturn and aloof.

2. Defensiveness: Df

The higher-scoring person is apt to be self-controlled and resolute in both attitude and behavior, and insistent and even stubborn in seeking his objectives. His persistence is more admirable than attractive. The lower-scoring subject tends to be anxious and apprehensive, critical of himself and others, and given to complaints about his circumstances. He not only has more problems than his peers, but tends to dwell on them and put them at the center of his attention.

3. Number of favorable adjectives checked: Fav

The individual who checks many of the words in the list of 75 appears to be motivated by a strong desire to do well and to impress others, but always by virtue of hard work and conventional endeavor. . . . The social desirability component. . . is . . . sincere concern with behaving appropriately and with doing one's duty.

The low-scoring subject is much more of an individualist -- more often seen as clever, sharp-witted, headstrong, pleasure-seeking, and original in thought and behavior.

4. Number of unfavorable adjectives checked: Unfav

Checking of unfavorable adjectives does not spring from a sense of humility and self-effacement, but from a kind of impulsive lack of control over the hostile and unattractive aspects of one's personality. The high-scoring subject strikes others as rebellious, arrogant, careless, conceited, and cynical. He tends to be a disbeliever, a skeptic, and a threat to the complacent beliefs and attitudes of his fellows. The low-scorer is more placid, more obliging, more mannerly, more tactful, and probably less intelligent.

## 5. Self-confidence: S-cfd

The high-scorer is assertive, affiliative, outgoing, persistent, an actionist. He wants to get things done, and is impatient with people or things standing in his way. He is concerned about creating a good impression, and is not above cutting a few corners to achieve this objective. He makes a distinct impression on others, who see him as forceful, self-confident, determined, ambitious, and opportunistic.

The low-scoring person is a much less effective person in the everyday sense of the word -- he has difficulty in mobilizing himself and taking action, preferring inaction and contemplation. Others see him as unassuming, forgetful, mild, preoccupied, reserved, and retiring.

## 6. Self-control: S-cn

High scorers tend to be serious, sober individuals, interested in and responsive to their obligations. They are seen as diligent, practical, and loyal workers. . . .

At the other end of the scale one seems to find the inadequately socialized person, headstrong, irresponsible, complaining, disorderly, narcissistic, and impulsive.

## 7. Lability: Lab

The high-scoring subject is seen favorably as spontaneous, but unfavorably as excitable, temperamental, restless, nervous, and high-strung. . . .

The low-scorer is more phlegmatic, routinized, planful and conventional. He reports stricter opinions on right and wrong practices, and a greater need for order and regularity.

## 8. Personal Adjustment: Per Adj

The high-scoring subject is seen as dependable, peaceable, trusting, friendly, practical, loyal, and wholesome. He fits in well, asks for little, treats others with courtesy, and works enterprisingly toward his own goals. He may or may not understand himself psychodynamically, but he nonetheless seems to possess the capacity to "love and work."

The subject low on the personal adjustment scale sees himself as at odds with other people and as moody and dissatisfied. This view is reciprocated by observers, who describe the low scorer as aloof, defensive, anxious, inhibited, worrying, withdrawn, and unfriendly.

## 9. Achievement: Ach

Definition: To strive to be outstanding in pursuits of socially recognized significance.

The high-scoring subject on Ach is usually seen as intelligent and hard-working, but also as involved in his intellectual and other endeavors. He is determined to do well and usually succeeds. His motives are internal and goal-centered rather than competitive, and in his dealings with others he may actually be unduly trusting and optimistic. The low-scoring subject on Ach is more skeptical, more dubious

about the rewards which might come from effort and involvement, and uncertain about risking his labors. He tends also to be somewhat withdrawn and dissatisfied with his current status.

10. Dominance: Dom

Definition: to seek and sustain leadership roles in groups or to be influential and controlling in individual relationships.

The high-scorer on this scale is forceful, strong-willed, and persevering individual. . . . The low scorer on Dom is unsure of himself, and indifferent to both the demands and the challenges of interpersonal life.

11. Endurance: End

Definition: to persist in any task undertaken.

The subject high on End is typically self-controlled and responsible, but also idealistic and concerned about truth and justice. . . . The low-scorer on End, on the other hand, is erratic and impatient, intolerant of prolonged effort or attention, and apt to change in an abrupt and quixotic manner.

12. Order: Ord

Definition: to place special emphasis on neatness, organization, and planning in one's activities.

High-scorers on Ord are usually sincere and dependable, but at the cost of individuality and spontaneity. . . . Low-scorers are quicker in temperament and reaction, and might often be called impulsive.

13. Intracception: Int

Definition: to engage in attempts to understand one's own behavior or the behavior of others.

The high-scorer on Int is reflective and serious, as would be expected; he is also capable, conscientious, and knowledgeable. . . . The low-scorer may also have talent, but he tends toward profligacy and intemperateness in its use.

14. Nurturance: Nur

Definition: to engage in behaviors which extend material or emotional benefits to others.

The subject high on this scale is of a helpful, nurturant disposition, but sometimes too bland and self-disciplined. . . . The subject scoring low on Nur is the opposite: skeptical, clever, and acute, but too self-centered and too little attentive to the feelings and wishes of others.

15. Affiliation: Aff

Definition: to seek and sustain numerous personal friendships.

The high-scorer on Aff is adaptable and anxious to please, but not necessarily because of altruistic motives; i.e., he is ambitious and concerned with position, and may tend to exploit others and his relationships

with them in order to gain his ends. The low-scorer is more individualistic and strong-willed, though perhaps not out of inner resourcefulness and independence.

16. Heterosexuality: Het

Definition: to seek the company of and derive emotional satisfactions from interaction with opposite-sexed peers.

The high-scorer on Het is interested in the opposite sex as he is interested in life, experience, and most things around him in a healthy, direct, and outgoing manner. . . . The low-scorer thinks too much, as it were, and dampens his vitality; he tends to be dispirited, inhibited, shrewd and calculating in his interpersonal relationships.

17. Exhibition: Exh

Definition: to behave in such a way as to elicit the immediate attention of others.

Persons who are high on this scale tend to be self-centered and even narcissistic. . . . Persons who score low tend toward apathy, self-doubt, and undue inhibition of impulse.

18. Autonomy: Aut

Definition: to act independently of others or of social values and expectations.

The high-scorer on Aut is independent and autonomous, but also assertive and self-willed. . . . The low-scorer is of a moderate and even subdued disposition.

19. Aggression: Agg

Definition: to engage in behaviors which attack or hurt others.

The individual high on this scale is both competitive and aggressive. He seeks to win, to vanquish, and views others as rivals. His impulses are strong, and often under-controlled. . . . The individual who is low on Agg is much more of a conformist, but not necessarily lacking in courage or tenacity. He tends to be patiently diligent, and sincere in his relationships with others.

20. Change: Cha

Definition: to seek novelty of experience and avoid routine.

Persons high on Cha are typically perceptive, alert, and spontaneous individuals who comprehend problems and situations rapidly and incisively and who take pleasure in change and variety. . . . The low-scorer seeks stability and continuity in his environment, and is apprehensive of ill-defined and risk-involving situations. In temperament he is patient and obliging, concerned about others, but lacking in verve and energy.

21. Succorance: Suc

Definition: to solicit sympathy, affection, or emotional support from others.

Suc appears to depict, at its high end, a personality which is trusting, guileless, and even naive in its faith in the integrity and benevolence of others. . . . The low-scorer, on the contrary, is independent, resourceful, and self-sufficient, but at the same time prudent and circumspect.

22. Abasement: Aba

Definition: to express feelings of inferiority through self-criticism, guilt, or social impotence.

High-scorers on Aba are not only submissive and self-effacing, but also appear to have problems of self-acceptance. . . . The low-scorer is optimistic, poised, productive, and decisive.

23. Deference: Def

Definition: to seek and sustain subordinate roles in relationships with others.

The individual scoring high on Def is typically conscientious, dependable, and persevering. He is self-denying not so much out of any fear of others or inferiority to them as out of a preference for anonymity and freedom from stress and external demands. . . . The individual with a low score on Def is more energetic, spontaneous, and independent; he likes attention, likes to supervise and direct others, and to express his will.

24. Counseling Readiness: Crs

The high-scorer on Crs is predominantly worried about himself and ambivalent about his status. He feels left out of things, unable to enjoy life to the full, and unduly anxious. . . . The low-scorer is more or less free of these concerns. He is self-confident, poised, sure of himself and outgoing.

## APPENDIX C

## COLLEGE CHARACTERISTICS INDEX

by

George G. Stern

The Activities Index and the Environment Indexes each consist of 300 items distributed among 30 scales of 10 items each. The AI scales parallel those of the EI, those of the former corresponding to behavioral manifestations of personality needs, those of the latter to environmental press conditions likely to facilitate or impede their expression.

The Order variable will serve to illustrate the structure of the instruments. Order may be defined briefly as: A prevailing trend towards the compulsive organization of the immediate physical environment, manifested in a preoccupation with neatness, orderliness, arrangement, and meticulous attention to detail. The magnitude of this same variable as a personality need is inferred from the number of preferences a person indicates among such items in the Activities Index as: "washing and polishing things like a car, silverware, or furniture," "keeping an accurate record of the money I spend," "arranging my clothes neatly before going to bed," etc. The magnitude of this same variable as a relevant press in a college environment is inferred from the number of respondents from the same institution who agree with such statements in the College Characteristics Index as: "in many classes students have an assigned seat," "attendance is usually taken in each class," "student papers and reports must be neat," etc.

## Scale Definitions

1. aba Abasement--ass Assurance: self-depreciation versus self-confidence.
2. ach Achievement: striving for success through personal effort.
3. ada Adaptability--dfs Defensiveness: acceptance of criticism versus resistance to suggestion.
4. aff Affiliation--rej Rejection: friendliness versus unfriendliness
5. agg Aggression--bla Blame Avoidance: hostility versus its inhibition.
6. cha Change--sam Sameness: flexibility versus routine.
7. cnj Conjunctivity--dsj Disjunctivity: planfulness versus disorganization.
8. ctr Counteraction--inf Inferiority Avoidance: restraining after failure versus withdrawal.
9. dfr Deference--rst Restiveness: respect for authority versus rebelliousness.
10. dom Dominance--tol Tolerance: ascendancy versus forbearance.
11. e/a Ego Achievement: striving for power through social action.
12. emo Emotionality--plc Placidity: expressiveness versus restraint.
13. eny Energy--pas Passivity: effort versus inertia.
14. exh Exhibitionism--inf Inferiority Avoidance: attention-seeking versus shyness.

15. f/a Fantasied Achievement: daydreams of extraordinary public recognition.
16. har Harm Avoidance--rsk Risktaking: fearfulness versus thrill-seeking.
17. hum Humanities, Social Science: interest in the Humanities and the Social Sciences.
18. imp Impulsiveness--del Deliberation: impetuosity versus reflection.
19. nar Narcissism: vanity
20. nur Nurturance--rej Rejection: helping others versus indifference.
21. obj Objectivity--pro Projectivity: detachment versus superstition (AI) or suspicion (EI).
22. ord Order--dso Disorder: compulsive organization of details versus carelessness.
23. ply Play--wrk Work: pleasure-seeking versus purposefulness.
24. pra Practicalness--ipr Impracticalness: interest in practical activities versus indifference.
25. ref Reflectiveness: introspective contemplation.
26. sci Science: interests in the Natural Sciences.
27. sen Sensuality--pur Puritanism: interest in sensory and esthetic experiences
28. sex Sexuality--pru Prudishness: heterosexual interests versus their inhibition.
29. sup Supplication--aut Autonomy: dependency versus self-reliance.
30. und Understanding: intellectuality.

#### Factor Definitions

##### I. Intellectual Climate

Eight of the eleven CCI factors covary together to define the overall dimensions of the intellectual climate. Among them are represented the more conventional aspects of the academic program, including (a) staff and facilities, (b) standards of achievement set by students as well as faculty, and (c) opportunities for the development of self-assurance. In addition to these three, the intellectual climate is also marked, as we shall see below, by (d) non-custodial student personnel practices and (e) an absence of vocationalism.

1. Factor -10. Work-Play. This is an inversion of Factor 10 (see area 10 below). It reflects an absence of activities associated with dating, athletics, and other forms of collegiate play or amusement.

2. Factor -11. Non-Vocational Climate. This factor is also an inversion (see area 11 below). In its reversed form the items reflect opportunities to engage in theoretical, artistic, and other "impractical" activities. Other items imply an absence of expectation, coercion, or demands for student conformity to conventional values.

3. Factor 1. Aspiration Level. A high score on this factor indicates that the college encourages students to set high standards for themselves in a variety of ways. These include opportunities for students to

participate in decision-making processes involving the administration of the school, and administrative receptivity to change and innovation, thus implying that a student's efforts to make some impact on his environment have some probability of being successful. But a high level of aspiration is also encouraged by introducing students to individuals and ideas likely to serve as models of intellectual and professional achievement. Scales included: Counteraction, Change, etc., etc.

4. Factor 2. Intellectual Climate. All of the various items contributing to this factor reflect the qualities of staff and plant specifically devoted to scholarly activities in the humanities, arts, and social sciences. Scales included: Humanities-Social Sciences, Sensuality, Understanding, Fantasied Achievement.

5. Factor 3. Student Dignity. This factor is associated with institutional attempts to preserve student freedom and maximize personal responsibility. Schools with high scores on this factor tend to regulate student conduct by means other than legislative codes or administrative fiat. There is a minimum of coercion and students are generally treated with the same level of respect accorded any mature adult. Scales included: Objectivity, Assurance, Tolerance.

6. Factor 4. Academic Climate. This factor stresses academic excellence in staff and facilities in the conventional areas of the natural sciences, social sciences, and the humanities. Scales included: Humanities-Social Sciences, Science.

7. Factor 5. Academic Achievement. Schools high in this factor set high standards of achievement for their students. Course work, examinations, honors, and similar devices are employed for this purpose. Scales included: Achievement, Energy, Understanding, Counteraction, Conjunctivity.

8. Factor 6. Self-Expression. The last of the factors in this area is concerned with opportunities offered to the student for the development of leadership potential and self assurance. Among the activities serving this purpose are public discussions and debates, projects, student drama and musical activities, and other forms of participation in highly visible activities. Scales included: Ego Achievement, Emotionality, Exhibitionism, Energy.

9. Total: Intellectual Climate.

## II. Non-Intellectual Climate

This area shares the Self-Expression factor with the preceeding one. The highest loadings, however, are connected with three factors involving a high level of organization of student affairs, both academic and social. The remaining two factors are associated with student play and an emphasis on technical and vocational courses.

10. Factor 6. Self-Expression. See Item 3. Above.

11. Factor 7. Group Life. The four scales on this factor are concerned with various forms of mutually supportive group activities among the student body. These activities are of a warm, friendly character, more or less typifying adolescent togetherness, but the items also reflect a more serious side to this culture as represented in activities devoted to the welfare of fellow students and less fortunate members of the community. Scales included: Affiliation, Supplication, Nurturance, Adaptability.

12. Factor 8. Academic Organization. The various components of this factor may be regarded as the environmental counterparts of the needs for orderliness and submissiveness in the individual. High scores on this factor are achieved by institutions which stress a high degree of organization and structure in the academic environment. Scales included: Blame Avoidance, Order, Conjunctivity, Deliberation, Deference, Narcissism.

13. Factor 9. Social Form. In some respects this factor represents the formal institutionalization of those activities represented in Factor 7 (Group Life). There is in fact considerable overlap between these two factors, but Factor 9 minimizes the friendly aspects of Factor 7 while stressing its welfare components. Schools characterized by this factor also offer opportunities for the development of social skills of a formal nature and in some respects suggest the finishing school counterpart of the vocational climate represented in Factor 11 below. Scales included: Narcissism, Nurturance, Adaptability, Dominance, Play.

14. Factor 10. Play-Work. Schools high in this factor offer opportunities for participation in a form of collegiate life reminiscent of the popular culture of the 1920's. These are the institutions sometimes referred to as the fountains of knowledge where students gather to drink. Scales included: Sexuality, Risktaking, Play, Impulsiveness.

15. Factor 11. Vocational Climate. The last of the non-intellectual factors is also shared with the Intellectual Climate area. The items of Factor 11 emphasize practical, applied activities, the rejection of aesthetic experience, and a high level of orderliness and conformity in the student's relations to the faculty, his peers, and his studies. Scales included: Practicalness, Puritanism, Deference, Order, Adaptive-ness.

16. Total: Non-Intellectual Climate.

## APPENDIX D

## PERSONAL-SOCIAL MOTIVATION INVENTORY

by

E. Paul Torrance

## MOTIVATION SCALES

1. Creative Motivation:  
Indicates an individual who displays an inquiring, searching reaching-out, and courageous attitude.
2. Critical Motivation:  
The individual displays sensitivity to defects, problems, gaps in knowledge, and the like; however, he may not in himself be able to produce constructive ideas or to see other possibilities.
3. Intellectual Autonomy:  
Individuals displaying this are able to reach conclusions independently from their observations and other data and have the courage to stick to their judgments. This is highly essential because the person who produces original ideas is always in the very beginning a minority of one and it takes a great deal of strength to withstand the discomfort engendered thereby.
4. Quest for Power:  
This is an excessive quest for power, manifesting itself in authoritarian attitudes in friends and family and in authoritarian attitudes in social relations in general causing problems for the individual in his attempts at social interaction.
6. Quest for Meaning:  
For the individual, an excessive quest for "meaning" results in frenetic status-striving and in frenetic insistence on self worth, manifested by extreme sensitivity to possible imputations of worthlessness and in extreme and calculated disregard of the welfare of others, lest they indicate that one is acting in a deferential manner.
7. Quest for Social Relations, and
8. Rejection of Social Relations:  
An excessive quest for social relationship in the form of "joining", or a pathological rejection of social relations and marked apathy and indifference to community affairs. These are taken to be manifestations of the fundamental

feeling of alienation from significant social ties which student derives from her college situation, especially when she realizes the temporary status of her position.

Items 1 - 3:

Torrance, E. Paul. Personal-Social Motivation Inventory,  
Bureau of Educational Research, College of Education,  
University of Minnesota, April 1, 53.

Items 4 - 8:

Tumin, Melvin. "Obstacles to Creativity", A REVIEW OF GENERAL  
SEMANTICS. Educational Testing Service, Princeton, N.J.,  
Vol. XI(4), 1954.

## APPENDIX E

## FACULTY-STUDENT RELATIONS INDEX

by

David C. Epperson

## FACULTY SCALES

1. Friendly Support - This scale is made up of items which indicate that students see the faculty as knowing personal information about students, being willing to talk about intimate topics, and encouraging students to be friendly with one another. The highest loading item is:

"What proportion of the faculty you have had for a class at this college know where you live while attending school?"\*

2. Rationality - This scale contains two major components - the idea of fair treatment and the imposition of faculty views on students. The highest loading item is:

"What proportion of the faculty you have had for a class at this college overwork the words 'should' and 'must?'"  
(scored negatively)

3. Free Expression - This scale includes the notions that the faculty feel free to express themselves and that they care whether students achieve aesthetic appreciation and understanding of complexity. The highest loading item is:

"What proportion of the faculty you have had for a class at this college feel free to express their opposition to your views on controversial issues?"

4. Non-Coercive Approach - The items on this scale refer to faculty behaviors that put varying degrees of pressure on students. (The way in which grades and competition are used and the demands that are placed upon students by faculty.) The highest loading item is:

"What proportion of the faculty you have had for a class at this college closely supervise quizzes and examinations?"  
(scored negatively)

5. Unstructured Approach - The items on this scale describe an atmosphere where students are encouraged to act independently but are still provided assistance when needed. The highest loading item is:

"What proportion of the faculty you have had for a class at this college 'spoon feed' their students?" (scored negatively)

\*The student was presented with four response alternatives: a) almost all, b) over half, c) less than half, and d) very few

6. Creativity - These items refer to encouragement by the teacher of departures from conventional ways of responding and to a willingness to talk with students about areas of aesthetic concern. The highest loading item is:

"What proportion of the faculty you have had for a class at this college place creativity above order?"

### STUDENT SCALES

1. Personal Acquaintance - This scale is made up of items which indicate that the students are well enough acquainted with the faculty to relate to them personally. The highest loading item is:

"What proportion of the students you know in your classes joke freely with faculty?"

2. Professional Acquaintance - The items in this scale indicate that the students feel at ease to interrelate with faculty members on a professional basis. The highest loading item is:

"What proportion of the students you know in your classes would be willing to initiate conversations with most faculty about political and social issues that concern them, even if these issues are unrelated to the faculty member's field of specialization?"

3. Respect - These items refer to amount of respect that students tend to show faculty members in their relationships with them. The highest loading item is:

"What proportion of the students you know in your classes are sincere with faculty?"

### ALIENATION SCALES

1. Isolation - Need for Protection - This scale is made up of items which indicate that students do not share faculty views regarding what constitutes faculty abuse of students. The highest loading item is:

"What proportion of the faculty you have had for a class at this college share your views about the degree to which faculty should attempt to indoctrinate their students?"

2. Dissatisfaction - These items refer to the students degree of dissatisfaction with his relations with faculty members. The highest loading item is:

"What proportion of the students you know in your classes are satisfied with how friendly most faculty are with them?"

3. Generational Conflict - The items on this scale refer to the presence of a generational gap between faculty and students. The highest loading item is:

"What proportion of the faculty you have had for a class at this college tend to hold conservative views about how young people should behave?"

4. Student Deception - This scale is composed of items that indicate that students are deceiving faculty. The highest loading item is:

"What proportion of the students you know in your classes feel it is sometimes necessary to make up an excuse for why you have been absent from class?"

5. Isolation - Need for Attention - The items in this scale indicate that students do not share faculty views regarding what constitutes appropriate attention to students. The highest loading item is:

"What proportion of the faculty you have had for a class at this college share your views about how friendly faculty should be with students?"

6. Union Ethic - This scale contains items that refer to student expressions of a need to organize in opposition to the faculty. The highest loading item is:

"What proportion of the students you know in your classes feel that there could be justification for a student strike to call attention to grievances against faculty?"

## APPENDIX F

## COLLEGE STUDENT QUESTIONNAIRE

published by

Educational Testing Service

## SCALE DEFINITIONS

1. (FI) FAMILY INDEPENDENCE: refers to a generalized autonomy in relation to parents and parental family. Students with high scores tend to perceive themselves as coming from families that are not closely united, as not consulting with parents about important personal matters, as not concerned about living up to parental expectations, and the like. Low scores suggest "psychological" dependence on parents and family.
2. (PI) PEER INDEPENDENCE: refers to a generalized autonomy in relation to peers. Students with high scores tend not to be concerned about how their behavior appears to other students, not to consult with acquaintances about personal matters, and the like. They might be thought of as unsociable, introverted, or inner-directed. Low scores suggest conformity to prevailing peer norms, sociability, extraversion, or other-directedness.
3. (L) LIBERALISM: This is defined as a political-economic-social value dimension, the nucleus of which is sympathy either for an ideology of change or for an ideology of preservation. Students with high scores (liberals) support welfare statism, organized labor, abolition of capital punishment, and the like. Low scores (conservatism) indicate opposition to welfare legislation, to tampering with the free enterprise system, to persons disagreeing with American political institutions, etc.
4. (SC) SOCIAL CONSCIENCE: This is defined as moral concern about perceived social injustice and what might be called "institutional wrongdoing" (as in government, business, unions). High scores express concern about poverty, illegitimacy, juvenile crime, materialism, unethical business and labor union practices, graft in government, and the like. Low scores represent reported lack of concern, detachment, or apathy about these matters.
5. (CS) CULTURAL SOPHISTICATION: refers to an authentic sensibility to ideas and art forms, a sensibility that has developed through knowledge and experience. Students with high scores report interest in or pleasure from such things as wide reading, modern art, poetry, classical music, discussions of philosophies of history, and so forth. Low scores indicate a lack of cultivated sensibility in the general area of the humanities.

6. (SF) SATISFACTION WITH FACULTY: refers to a general attitude of esteem for instructors and the characteristic manner of student-faculty relationships at the respondent's college. Students with high scores regard their instructors as competent, fair, accessible, and interested in the problems of individual students. Low scores imply dissatisfaction with faculty and the general nature of student-faculty interaction.
7. (SA) SATISFACTION WITH ADMINISTRATION: is defined as a generally agreeable and uncritical attitude toward the college administration and administrative rules and regulations. High scores imply satisfaction with both the nature of administrative authority over student behavior and with personal interactions with various facets of the administration. Low scores imply a critical, perhaps contemptuous view of an administration that is variously held to be arbitrary, impersonal, and/or overly paternal.
8. (SM) SATISFACTION WITH MAJOR: refers to a generally positive attitude on the part of the respondent about his activities in his field of academic concentration. High scores suggest not only continued personal commitment to present major field, but also satisfaction with departmental procedures, the quality of instruction received, and the level of personal achievement within one's chosen field. Low scores suggest an attitude of uncertainty and disaffection about current major field work.
9. (SS) SATISFACTION WITH STUDENTS: refers to an attitude of approval in relation to various characteristics of individuals comprising the total student body. High scores suggest satisfaction with the extent to which such qualities as scholastic integrity, political awareness, and particular styles and tastes are perceived to be characteristic of the student body. Low scores imply disapproval of certain characteristics that are attributed to the overall student body.
10. (SH) STUDY HABITS: refers to a serious disciplined, planful orientation toward customary academic obligations. High scores represent a perception of relatively extensive time devoted to study, use of systematic study routines and techniques, and a feeling of confidence in preparing for examinations and carrying out other assignments. Low scores suggest haphazard, perhaps minimal, attempts to carry through on instructional requirements.
11. (EI) EXTRACURRICULAR INVOLVEMENT: This is defined as relatively extensive participation in organized extracurricular affairs. High scores denote support of and wide involvement in student government, athletics, religious groups, preprofessional clubs, and the like. Low scores represent disinterest in organized extracurricular activities.