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ABSTRACT

This study is a secondary analysis of data from recent surveys of faculty and students in 89 American colleges and universities. It explores undergraduate socialization in academic departments, focusing on the impacts of student and faculty norms concerning the desirability of liberal vs. vocational education as outcomes of college, and primary social interaction among faculty and students. Covariance analysis is used to investigate five values similar to those in the Cornell Values Study. The findings indicate that departmental faculty contact is more consistently influential than peer ties, having similar, positive effects for both sexes on three of the five values- helping others, creativity, career eminence. This suggests lower salience of peer influences in departments relative to other college settings. Educational norms, while not as important as primary interaction, are more influential for men than women. When the joint effects of norms and social relationships are examined, faculty contact continues to be the most influential variable, regardless of norms. Only for women's creativity orientations is the strong influence of faculty contact reduced by peer ties, regardless of those peers' norms. Findings are interpreted with respect to differential styles by sex of organizational behavior and their implications for undergraduate socialization. (Author)

Final Report

Project No. 1-E-111
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THE EFFECTS OF ACADEMIC DEPARTMENTS ON CHANGES IN UNDERGRADUATES' OCCUPATIONAL VALUES

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Minneapolis, Minnesota

February 28, 1974

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
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The Effects of Academic Departments on Changes in Undergraduates' Occupational Values

by

John C. Weidman
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Abstract

This study is a secondary analysis of data from recent surveys of faculty and students in 89 American colleges and universities. It explores undergraduate socialization in academic departments, focusing on the impacts of student and faculty norms concerning the desirability of liberal vs. vocational education as outcomes of college, and primary social interaction among faculty and students. Covariance analysis is used to investigate five values similar to those in the Cornell Values Study.

The findings indicate that departmental faculty contact is more consistently influential than peer ties, having similar, positive effects for both sexes on three of the five values - helping others, creativity, career eminence. This suggests lower salience of peer influences in departments relative to other college settings. Educational norms, while not as important as primary interaction, are more influential for men than for women. When the joint effects of norms and social relationships are examined, faculty contact continues to be the most influential variable, regardless of norms. Only for women's creativity orientations is the strong influence of faculty contact reduced by peer ties, regardless of those peers' norms. Findings are interpreted with respect to differential styles by sex of organizational behavior and their implications for undergraduate socialization.

Preface

The aim of this study is to develop and test a framework for predicting which normative characteristics of college departments and mechanisms of student and faculty influence are most likely to bring about changes in undergraduates' values. I focus on change as an outcome of the academic department, a unit organized for instruction and research, and on the interpersonal processes through which change occurs in individuals (i.e., their socialization). I argue that students are most likely to change if their departments are characterized by high rates of interaction among faculty and students, especially interaction that is personal and not confined to course-related matters. Furthermore, departmental socialization is greatest when there is high agreement among both students and faculty on norms.

The study is intended to contribute to research focusing on college impact or, more generally, socialization in organizations. On one level, I am dealing with situational constraints on the choices made by participants in an organizational environment. On another level, I am exploring a set of socialization processes, concentrating largely on the structure of interpersonal relations among an organization's members. I focus on the normative influences exerted by faculty and students, attempting to delineate the structure of organizational socialization and to determine empirically the nature of the relationships between interpersonal interaction and the transmission of normative influences. The general working hypothesis for the study is that high rates of primary interaction are likely to be accompanied by changes in people's orientations if the dispositions of the individual and the normative pressures of faculty and peers to which he is exposed are not at odds.

While there has been continuing scholarly interest in undergraduate socialization, findings remain equivocal. I attempt to provide additional insights into a closely specified set of socialization processes, thereby contributing something to the elaboration and extension of existing theory.

In addition to its importance for the continuing development of more refined sociological theory, I chose to focus on the socializing effects of primary social relationships because of their central place in many current efforts to "humanize" learning environments. Findings from the present research may help to inform the development of educational policy in this area of higher education.

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Chapter One: A Framework for Studying Undergraduate Socialization

The aim of this study is to develop and test propositions about relationships among normative characteristics of colleges and college subunits, mechanisms of interpersonal influence, and change or stability in undergraduates' values. For this study, I consider a value to be a predisposition toward or preference for some personal end or life goal. This conception is similar to the one used in the Cornell Values Study which defined a value as "that which is considered desirable, satisfying, good or worthy -- in short, the thing which is valued."[1] The research focusses on the academic department, a unit organized for instruction and research, and on the interpersonal processes through which change occurs in individuals (i.e., their socialization).

Two general questions deal with the socializing effects of an individual's participation in an organizational environment. One pertains to social interaction: What are the interpersonal processes through which individuals' values are influenced? The other pertains to organizational structure: What are the various characteristics of socializing organizations that exert similar or dissimilar influences on members' values? Wheeler gives the following reasons for considering both the individual and the organization in studying socialization:

> Just as individuals may become differently socialized because of differences in past experience, motivations, and capacities, so may they become differently socialized because of differences in the structure of the social settings in which they interact . . .
>
> The guiding assumption is simply that in many situations individuals remain highly adaptable and flexible, prepared to fit their behavior into the demands of the current social context.
>
> The result is that we must not look only at underlying motives, that is, at how people have internalized deeply rooted features of the social order. Much can also be learned about the processes of socialization by taking a close look at the structures and situations within which it occurs.[2]

The present research is concerned with intrapersonal mechanisms of socialization, only insofar as: 1) amount of involvement in an organizational setting is an indirect indicator of an individual's motivation

to participate in that organization's activities, and 2) students' values at entrance to college are indicative of "underlying motives." Of central concern are the socializing impacts of interpersonal ties students have with individuals and groups, both at college and elsewhere. In this context, the relationship between individual and organizational variables in the study of socialization can be explained as follows: Just as students differ in their patterns of interaction, colleges differ in their structuring, intentionally or not, of normative contexts and opportunities for interaction among members.

Three general outcomes of socialization described by Brim are the "knowledge, skills, and dispositions that make [people] more or less able members of their society."[3] While each of these general outcomes can be influenced by college attendance, I am concerned primarily with the dispositional aspect, that is, change or stability of values.

Since an important outcome of the socialization process is the development of dispositions necessary for effective performance in adult roles, I have selected the occupational role as the general referent for this study. Moore describes the significance of occupations as follows:

> In modernized societies, occupation represents a central place in life organization for a vast majority of adult males and a substantial minority of adult females. In temporal terms, occupation is challenged only by the family as the major determinant and locus of behavior; were we to limit our comparison to the waking hours, occupation would appear to be a clear winner. And to the degree that formal education can be viewed as occupational preparation, we need not even exempt children and youths from the salience of occupational matters.[4]

Technological advancement in the United States has been accompanied by a great expansion of higher education and by a level of popular educational attainment unequalled anywhere else in the world.[5] The growth of service occupations and the increasing movement toward greater professionalization by such occupations have given impetus to the establishment of occupation-specific training programs in colleges and universities. Furthermore, as larger numbers of people attain bachelor's degrees, that degree has come to be required increasingly as a prerequisite for employment in many occupations. Among male adults eighteen years of age or older in 1959, college graduates were more than twice as likely to be employed in white collar occupations than were high school graduates.[6] In fact, based on a longitudinal survey of 1,332 men born in 1934 who enrolled as freshmen at the University of Illinois (Urbana) in 1952, Eckland asserts the following:

> Employment in a nonmanual occupation is almost guaranteed by the attainment of a college diploma, quite independently of either academic ability or class background, thus assuring the upward mobility of graduates from manual origins and the stability of graduates from nonmanual origins.[7]

In addition to providing the educational credentials necessary for access to upper white collar, professional, and managerial occupations, the traditional liberal arts education has also provided experiences and resources for the student to develop more generalized orientations toward work and leisure activities. In fact, Beardslee and O'Dowd assert that "students perceive occupations largely in terms of their implications for a style of life and a place in the community status system . . ."[8] To maintain continuity with previous research, particularly the Cornell Values Study, this study examines students' orientations toward intrinsic rewards (using special abilities, aptitudes, being creative); extrinsic rewards (financial success, prestige, security); and interpersonal relationships (helping others, working with people rather than things).[9]

Attention will be paid to similarities and differences in the orientations of male and female students. Men may be more likely than women to develop life-time career orientations in college, especially since women can attain through marriage the same sorts of financial security or community status attained by men through occupational participation. Tinto and Cullen explain this phenomenon as follows:

> It is fairly clear that despite some recent changes in women's behavior, men more than women face the necessity of establishing a position in the occupational structure. For women, the decision to pursue a career is, relatively speaking, less often dictated by social and/or economic necessity. As a result, it is probable that women are both freer to deal with college as an intrinsically rewarding experience and face less pressure to complete college.[10]

Traditionally, many women have sought training in college for readily available short-term employment in office work of a clerical sort, editing, or teaching in anticipation of working only until their spouses have completed any post-bachelors training and/or are holding relatively secure jobs.[11] It has been suggested that restricted access for women to most fields other than teaching, nursing, and social work is crucial in determining their occupational participation.[12] Increasingly, women in college are preparing for continuous careers following graduation, interrupted only for brief periods (if at all) for child-rearing or other family responsibilities. Nonetheless, I suspect that value orientations of women will still tend to lean more toward interpersonal relationships and intrinsic rewards and less toward extrinsic rewards than those of men, mainly because of the slow movement toward increasing access for women to business and professional positions.

Several levels of analysis will be considered in examining the socializing effects of settings and persons: the individual; the reference group, particularly college peers and faculty; and the normative climate of the academic department. In the following discussion of these levels, I use the term "college" to mean the institution as a whole rather than a sub-unit such as a College of Arts and Sciences or a College of Education.

On the individual level, I focus on primary social relationships, that is, relationships "characterized by intimate face-to-face association and cooperation."[13] I take, as my conceptual starting point, Shibutani's assertion that "socialization is a product of a gradual accumulation of experiences with certain people, particularly those with whom we stand in primary relations . . ."[14] Consequently, an important determinant of the socialization potential of social relationships is the intensity of feelings and other affective attachments between the persons involved, namely their sentiments.[15]

Another critical aspect of interaction is its frequency. The more frequently an individual interacts with specific others the more he is exposed to their attitudes, values, and opinions. Furthermore, as Homans argues, there is often a direct relationship between frequency of interaction with another person and liking that person:

> . . . if Other does Person a service, Person is apt both to like him and to interact with him often. That is, Person's liking for Other varies directly as the frequency of his interaction with him.[16]

Homans does not, however, assert this proposition without qualification. Sentiments may be so negative that frequency of interaction does not lead the participants to like each other.

> When the costs of avoiding interactions are great enough, a man will go on interacting with another even though he finds the other's activity punishing; and far from liking the other more, he will like him less.[17]

The foregoing notions of frequency and sentimental intensity of interaction, are the basic components of the general proposition on which the present research is built; namely, that interaction involving frequent, primary relationships (e.g. activities with friends) is more likely to have socializing impacts than interaction involving infrequent, impersonal relationships (e.g. request for directions at a service station).

At the reference group level, close attention must be given to the sources of interpersonal influence encountered by students in college so that some predictions can be made concerning the type of socialization outcomes likely to occur. The task is to identify a student's reference groups and the sorts of normative pressures these groups exert on their individual members. I use "reference group" in the inclusive sense defined by Kemper:

> In general, a reference group is a group, collectivity, or person which the actor takes into account in some manner in the course of selecting a behavior from among a set of alternatives, or in making a judgment about a problematic issue. A reference group helps to orient the actor in a certain course, whether of action or of attitude.[18]

Sentiments or expectations held by members of reference groups that influence members' behavior constitute normative pressures. I rely on Homans' conception of norm:

> A norm is an idea in the minds of members of a group . . . that can be put in the form of a statement specifying what the members or other men should do, ought to do, are expected to do, under given circumstances.[19]

Two likely sources of normative pressures on college students are peers and faculty. The following are several potential socializing functions that can be served by peer groups described by Feldman and Newcomb:

> 1) Under certain conditions . . . the peer group can support and facilitate the academic-intellectual goals of the college.
>
> 2) The peer group offers general emotional support to the students; it fulfills needs not met by the curriculum, the classroom, or the faculty.
>
> 3) The college peer group can provide for the student an occasion for and practice in getting along with people whose background, interests, and orientations are different from his own.
>
> 4) Through value reinforcement, the peer group can provide support for not changing . . . Yet, it can also challenge old values, provide intellectual stimulation and act as a sounding board for new points of view, present new information and new experiences to the student, help to clarify new self-definitions, suggest new career possibilities, and provide emotional support for students who are changing.
>
> 5) The peer group can offer an alternative source of gratification and of positive self-image, along with rewarding a variety of non-academic interests, for students who are disappointed or not completely successful academically.[20]

An important point emphasized by the fourth function listed is that reinforcement of existing values can be considered an outcome of undergraduate socialization just as change in values is an outcome.

Sometimes, an effort should be made to differentiate membership groups from reference groups. Simply living in a dormitory, for instance, does not necessarily indicate that students from the same dormitory will constitute most of an individual's reference group(s). In a classic study of college women, Siegel and Siegel manipulated choice of residence location by deliberately assigning subjects to non-preferred

locations. The authors discovered that attitude change was greatest when subjects ". . . came to take the imposed, initially non-preferred membership group as their reference group."[21] This sort of research can be done when it is possible to identify the individuals constituting various groups. For example, Wallace was able to use sociometric techniques for identifying the Interpersonal Environments of students at a small midwestern college.[22] Large sample survey research, however, is not always amenable to such techniques, especially since confidentiality of respondents is often of great concern. It may then be necessary to settle for more general measures of membership group attachments based on friendship or interaction not tied to specific individuals.

The spatial location of reference groups can also affect their potential for socialization. Bidwell and Vreeland describe the importance for socialization of student involvement with college-related people and activities as follows:

> A major dimension along which the student-college relation may vary is the scope of the student's involvement with the college: from broad (e.g., the residential college) to narrow (e.g., the commuter college). The client-member status of the student permits the college staff to intervene in such areas of his personal life as beliefs and commitments. This intervention may be direct (e.g., instruction or counseling) or indirect (e.g., manipulation of living groups or of the time sequence of events). The broader the scope of the student's involvement with the college, the more accessible he is to intervention and the more diverse the mechanisms that can be employed (especially mechanisms of indirect manipulation). In this way the college's power is enhanced and its effects upon student values and attitudes should be more extensive.[23]

Consequently, limited student involvement with on-campus reference groups is likely to reduce the impact of normative pressures exerted by a college.

Faculty reference groups can also serve important socializing functions, as Feldman and Newcomb indicate:

> 1) A faculty member can expose a student to new knowledge and ways of doing things.
>
> 2) He can motivate students to engage in intellectual activities, or reinforce existing motivation.
>
> 3) He can be a critic, defining standards of aspirations and academic achievement. He may evaluate students' performance, either formally or informally.

4) The instructor may be a catalyst to the student's reorienting his value system rather completely, or he may reinforce the student's existing values and attitudes.

5) He can be a model for students.[24]

Interaction with faculty can have notable impacts on students. In a preliminary report on research on faculty influence, Wood and Wilson mentioned the following educational consequences for students of frequent interaction with faculty:

1) Increased commitment to intellectual concerns.

2) Greater satisfaction with virtually all aspects of their college experience.

3) Greater sense of who they were and where they were going, both personally and vocationally.[25]

Again, there is the problem of identifying which faculty members are most influential for students. In this study the strategy is to select a particular segment of the organizational environment where faculty influence is likely to be concentrated, the academic department. In a study of Michigan State University students, Lehmann and Dressel found that seniors rated major field courses and instructors (along with close friends) as having the most significant influences on their attitudes and values during college.[26] Practically all post-freshman students have some affiliation with an academic department since it tends to be the unit through which degree requirements are formulated and certification of their successful completion is made. A student usually takes more courses in his major field than in any other and so is likely to interact more frequently with faculty in his own department than with faculty in other areas. Vreeland and Bidwell describe the department as follows:

> The department . . . is the principal workplace of the college, has relatively well-defined goals and expectations for students, and commands powerful normative and utilitarian sanctions.[27]

In addition to concentrating faculty influence, the department serves as a focus for peer influence.[28] As an upperclassman, a student generally takes advanced courses in his major field populated largely by fellow majors. In this way, the probability of interacting with departmental peers increases as the student gets closer to a degree.

Furthermore, the academic department often provides an impetus for defining occupational concerns and for the development of preliminary occupational commitments. Even if the student's ultimate career is unrelated to his academic major, general pressures of at least two sorts operate during college. First, choices have to be made concerning activities after completion of college. Usual choices for men are

immediate full-time employment or continuation of studies at the graduate level that will result ultimately in employment. In addition to the options mentioned for men, women may choose to assume full-time responsibility for child care and the management of a household.[29]

A second pressure results from the attempts of an individual to determine and then attain desirable goals. Merton calls this process "anticipatory socialization:"

> . . . the acquisition of values and orientations found in statuses and groups in which one is not yet engaged but which one is likely to enter . . . It serves to prepare the individual for future statuses in his status-sequence. An explicit, deliberate, and often formal part of this process is of course what is meant by education and training. But much of such preparation is implicit, unwitting, and informal . . .[30]

In occupational terms, a student seeks to determine both his own level of qualification for various occupations and the reactions of significant others to his choices. My concern is not with occupational choice, but rather with more general value orientations. The academic department serves as a context for anticipatory occupational socialization involving the concommitant influences of students' values and occupational aspirations:

> The occupational status still to be occupied influences the current attitudes, values, and behavior of the individual. Thus, in addition to people choosing an occupation in order to satisfy a value, they may choose a value because they consider it appropriate for the occupational status they expect to fill in the future.[31]

The main thrust of the present research is to examine the socializing effects, expressed as either change or reinforcement of values, of normative pressures transmitted by departmental members through primary social relationships. This approach parallels the work of Vreeland and Bidwell who posit three conditions that contribute to departmental socialization: faculty interest in undergraduate teaching; student/faculty interaction measured on two dimensions, intimacy and frequency; and faculty and student norms that are "consistent and reinforcing."[32]

One way to determine faculty and student norms is to examine the goals of each for attaining such outcomes of a college education as vocational training, individual psychological development and maturation, intellectual enlightenment, or general education. Vreeland and Bidwell suggest that the departmental faculty's collective conception of goals for undergraduate education conditions the faculty's affective responses to students. According to them, the faculty's conception of the instructional task, more than specific subject-matter content, determines the social organization of departmental student-faculty interaction.[33]

The authors systematize the structure of departmental faculty influence by dividing faculty goals for undergraduate education into two categories: technical and moral. Technical goals concern occupational preparation and the intellectual structure of an academic discipline. Moral goals concern the ethical practice of an occupation and the broadening or humanizing effects of education. According to this formulation, the expressed goals of faculty for undergraduate education determine faculty behavior and expectations which, in turn, determine the socializing effects of the department. The authors argue as follows:

> . . . When technical goals predominate, any change in student values and attitudes is likely to be an unanticipated consequence of technical instruction. Under this condition, observed changes in student sentiments should be heterogeneous. When moral goals predominate in a department, instructional activities are expected to impart preferred values and attitudes, so that observed changes in student sentiments should converge on these preferences.
>
> Departments may differ in the extent of faculty consensus about the content of department goals for undergraduate education. Given the widely accepted norm of faculty autonomy, faculty members are likely to pursue their own aims, rather than department goals with which they disagree. Widespread faculty disagreement (mixed goal departments) should generate cross-pressures on students and thus diminish the department's socializing power.[34]

Careful attention is paid in the present research design to two dimensions of departmental impact mentioned by Vreeland and Bidwell, direction and intensity of influence. Concerning the direction of impact, Vreeland and Bidwell suggest that not only do different patterns of change occur as a function of faculty conceptions of the instructional process, but also that some values are more likely than others to be influenced by either technical or moral goals. Student values concerned with extrinsic rewards of occupational participation (income, status, recognition from colleagues) would be more likely to be influenced positively by technical rather than moral goals. Values concerned with individual creativity or interpersonal relationships, on the other hand, would be more amenable to positive influence by moral rather than technical goals.

Intensity of influence can refer both to the overall importance among faculty of a particular goal and to the consistency of faculty sentiments, i.e., the extent of agreement among faculty on the goals for undergraduate instruction. Consequently, in assessing potential departmental impact, both the general importance of a particular instructional goal and the level of consensus among faculty on the goal's importance should be assessed. Vreeland and Bidwell classified academic departments at Harvard according to the degree of consensus among faculty on

moral and technical goals. Departments having high faculty consensus on technical goals included physics, chemistry, Germanic and Slavic languages, engineering, music, mathematics, astronomy, psychology, and philosophy. Departments having high faculty consensus on moral goals included architectural science, classics, government, economics, history and fine arts. Departments having low consensus because various faculty members held different goals included romance languages, biology, anthropology, English, geology, and social relations.

Vreeland and Bidwell also argue that departmental effects are greatest when faculty and student norms are not in conflict. Table 1 shows the emphasis placed on some outcomes of a college education (normative pressures) by faculty and students in four general academic areas at a "Northeastern American State University."[35] While the relative ordering of faculty and student emphasis is similar for each area, the absolute importance of student and faculty emphasis differs markedly. The rank-order correlations (Spearman's rho) between faculty and student rankings of the goals were .74 for humanities, .91 for science, and .94 for both social science and engineering.[36] Similar findings for students and faculty at Syracuse (rho = .79) have been reported by Feldman and Newcomb.[37] However, since neither study was longitudinal, it was not possible to tell whether or not students had changed their values as a result of faculty influence. One task of the present research is to investigate the impact of faculty influence on change in students' values.

A different approach to the analysis of the normative pressures exerted in various academic departments is the Environmental Assessment Technique (EAT) developed by Astin and Holland.[38] Taking research on the psychology of vocational choice as his basepoint, Holland developed a scheme classifying occupations in terms of six personality types: Realistic, Intellectual, Social, Conventional, Enterprising, and Artistic:

> For each of these types there is a narrative summary of personality characteristics called the "modal personal orientation." By identifying the type to which any vocation belongs, we can use a person's vocational choice as a miniature personality "test" . . . Using this theory as a beginning, we have assumed that a given social environment can, to some degree, be described in terms of the occupations (personalities) of its members.[39]

Using these six modal types, Holland classified the normative pressures of major field environments according to the vocational preferences and personality orientations of the people in them.[40] Some majors assigned to each of the types include the following: Realistic - agriculture, industrial arts, engineering, and forestry; Intellectual-mathematics, philosophy, physical sciences, and anthropology; Social-education, nursing, psychology, American civilization, sociology, and social work; Conventional - accounting, economics, finance, and business education; Enterprising - history, international relations, political science,

Table 1. Goals of a University Education, as Seen by Faculty and Students in Different Disciplines*

Respondents	Provide a Basic Education for the Appreciation of Ideas	Develop Knowledge and Interest in Community and World Problems	Develop Moral Capacities, Ethical Standards and Values	Provide Vocational Training and Skills Related to Career
FACULTY				
Humanities (N=66).....	74.2[a]	31.8[a]	31.8[a]	45.5[b]
Social science (N=112).....	58.9	26.8	13.4	46.4
Science (N=143).....	60.8	16.1	12.6	58.0
Engineering (N=32).....	43.8	9.4	9.4	56.3
STUDENTS				
Humanities (N=71).....	57.7[a]	29.5[a]	11.2[a]	63.4[b]
Social Science (N=110).....	43.6	24.5	19.0	66.4
Science (N=173).....	26.6	14.4	16.7	74.6
Engineering (N=72).....	25.0	13.8	12.5	76.4

[a]Thought to be of first importance.

[b]Thought to be of at least considerable importance.

*Source: Lional S. Lewis. "Two Cultures: Some Empirical Findings." Educational Record 48(1967): 263.

industrial relations, business administration and management; and Artistic - art and music education, fine and applied arts, English and journalism, and foreign languages and literature.

Table 2 shows some correlations of Environmental Assessment Technique (EAT) variables with ratings of the environments by students at seventy-six colleges. This table suggests some base lines from which to predict general relationships among groups of academic majors, student orientations toward a college education as intellectual activity vs. occupational training and levels of student/faculty interaction. There are two distinct pairs of major groupings that show significant correlations in opposite directions on four of the five student ratings. Students in Realistic and Conventional majors reported low student/faculty interaction, low eagerness to discuss issues, decreased interest during college in creative arts, and high orientations toward getting a degree rather than learning. This indicates a very instrumental orientation among students in these majors, probably directed toward rather specific occupations. Certainly, engineering, a Realistic major, and accounting, a Conventional major, provide such training.

On the other hand, students in Enterprising and Artistic majors reported completely opposite relationships on three of the four variables described in the foregoing. They indicated high student/faculty interaction, low orientations toward getting a degree rather than learning, and increased interest in creative arts. In addition, these students reported decreased interest during college in science. It seems somewhat strange to find students in Enterprising majors such as history, political science and business administration responding in patterns similar to students in Artistic majors such as English, journalism, and fine arts. Perhaps the items included in Table 2 are too general for a clear separation of student orientations by academic major. One item that does differentiate between these two major groups is eagerness to discuss issues. Students in Enterprising majors appear to be much more oriented toward argumentation and related skills that might lead ultimately to careers in areas like administration or law than are Artistic majors. For Artistic majors, on the other hand, creative capacities in writing or artistic endeavors are more important than skills in discussion.

There were too few significant correlations for Social and Intellectual majors for precise comparisons with the other four major groups. This is probably indicative of the diversity of student interests and outcomes represented among the departments in these two groups.

In the foregoing discussion, particular departments were not always placed in the same groups, but some general patterns appear that are useful in developing expectations for the present research. Humanities departments tend to be populated by faculty and students who are concerned with intellectual activities, creative endeavors, and the development of values and ethical standards. Occupational value orientations among humanities students tend to cluster in the area of instrinsic rewards rather than extrinsic rewards, with a moderate "people" orientation.

Table 2. Correlations of Environmental Assessment Technique (EAT) Variables with Student Ratings of the College Environment and with Perceived Effects of the College*

Ratings of the College environment	EAT Variable							
	Student Body		Personal Orientation					
	Intelligence Level	Size	Realistic	Intellectual	Social	Conventional	Enterprising	Artistic
Amount of faculty-student contact	.35[a]	-.74	-.53		.35	-.40	.41	.47
Students' orientation to getting a degree rather than learning	-.73	.63	.37	-.31		.56	-.30	-.44
Students' eagerness to argue and debate issues	.59	-.33	-.34			-.31	.41	
Perceived effects of the college								
Increased interest in music and art	.47	-.41	-.59		.51	-.33	.40	.59
Increased interest in science	-.44	.34	.53				-.55	-.45

[a]All correlations reported are significant at or below the .01 level. N=76 colleges, 15-216 student raters per college

*Source: Alexander W. Astin. "Further Validation of the Environmental Assessment Technique." Journal of Educational Psychology 54 (1963): 222-223.

Science and mathematics departments, while also high on members' intellectual orientations, are likely to be high on career orientation and occupational training as well. These areas will probably be relatively high on students' orientations toward both intrinsic and extrinsic rewards, with relatively low "people" orientations. Compared with other science departments, engineering departments are likely to have students somewhat lower on instrinsic reward orientation, somewhat higher on extrinsic reward orientation, and about the same on "people" orientation. Majors in the social sciences, particularly economics and political science, appear to have the highest extrinsic reward and people orientations, and the lowest intrinsic reward orientations. Faculty tend to be less favorably oriented to the pursuit of extrinsic rewards than students, especially in the humanities and social sciences where little direct occupational training is provided and large numbers of graduates enter occupations unrelated to their majors.

A summary of general career orientations for students planning on careers in various fields is represented in the following findings by Davis:

> 1) For "people-oriented" students, the fields of education and medicine were most desirable; humanities, biological sciences, engineering, and physical sciences were least desirable.
>
> 2) Among "money-oriented" or extrinsic reward oriented students, the fields of law, business, engineering, and physical sciences were most desirable; biological sciences, social sciences, humanities, and education were least desirable.
>
> 3) Among students wanting to be "creative and original," an intrinsic reward orientation, the fields of humanities, physical sciences, engineering and social sciences were most desirable; law, medicine, and business were least desirable.[41]

One aspect of the present research will be to look at profiles of student values in several selected departments to determine whether more recent data support previous findings.

In addition to the six EAT major groups, Table 2 contains two characteristics of the college as a whole, size and intelligence level of the student body. These two characteristics show strong relationships with environmental ratings and perceived effects of college, but in opposite directions. Intelligence level of the student body was related to the five variables in the same direction as Enterprising and Artistic major, while size of student body showed relationships similar to Conventional and Realistic majors. Quite possibly, these latter majors are more likely to be found in large, less-selective, multi-purpose public institutions than in more selective private institutions. While the data in the table are insufficient for verifying this speculation, similar findings concerning the effects of college quality and size on

students' endorsement of intellectual values are reported by Davis.[42] He found that students attending private colleges at all quality levels were more likely to endorse intellectualism than their public college counterparts. Quality of the institution, particularly if quality is an indicator of the intelligence level of the student body, might also be expected to have some independent influence on students' value orientations. Specifically, students attending high quality colleges might legitimately be expected to be oriented more toward intellectual pursuits than others at low quality colleges.

The basic problem with the foregoing speculations is that global characteristics of institutions are rather imprecise and analytically vague as measures of the more dynamic aspects of social relationships in organizations. I prefer to examine the dynamic aspects of participation in analytically defined sectors of an organizational context, in this case, the academic department. Given an accurately defined context, I expect that departments with similar configurations of student/faculty social relationships and normative influences will have similar socializing effects on undergraduates, quite independent of the global characteristics of the department or of the college.

My primary aim is to investigate the socializing impacts on individual students of the covariation of departmental faculty and student norms transmitted in patterns of influence via primary social relationships. Figure 1 contains a diagram of the model derived for the present research. The model represents a set of processes whereby an undergraduate:

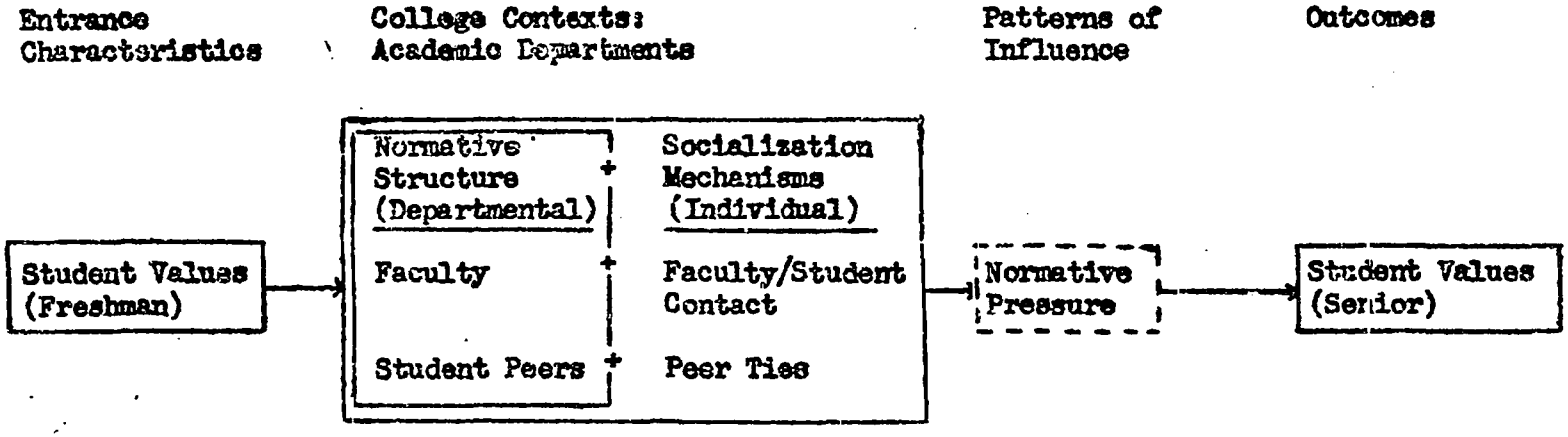
1) Enters college as a freshman with certain occupational values;

2) Is exposed to various socializing influences while attending college, particularly normative pressures exerted via primary interaction with faculty and peers in the major department; and

3) By senior year, either changes or maintains those values that he held at entrance to college.

The crucial set of independent variables are those that either define or are defined with respect to the academic department. In Figure 1, "college context" calls attention to two different levels of analysis in determining departmental effects. Departmental norms are aggregate characteristics, the collective orientations of all members of each constituent group (faculty and students). The socialization mechanisms transmitting normative influences are the students' individual social relationships with departmental faculty and peers. Since the individual student is the unit of analysis, this model treats the normative structure of an individual student's major department as an attribute of the student. Hence, findings can be interpreted as departmental effects on individual students' values.

Figure 1. A Model of Undergraduate Socialization in Academic Departments



In Figure 1, a dotted line appears around "normative pressure" because it is a set of unmeasured variables which can be inferred from various patterns of covariation among variables constituting the college context. That is, predictions concerning the direction and intensity of normative pressures to which a student is exposed can be made if the normative orientations of faculty and students in the major department and the interpersonal linkages of the student with faculty and peers are known.

If each of the four variables constituting departmental normative pressure is divided simply into two categories, "high" and "low", there are sixteen possible combinations of them. Rather than try to generate expectations for the effects of each normative pressure configuration, I shall summarize two of the more important concerns. First, norms and social relationships can have independent effects on students' values. For instance, values concerned with the extrinsic rewards of occupational participation are more likely to be influenced positively by faculty technical (vocational training) than moral (liberal education) norms. Values concerned with individual creativity or interpersonal relationships are more likely to be influenced positively by faculty moral norms than technical norms. Due to the general dimensions of the faculty role, close social relationships should especially tend to affect students' academic-intellectual orientations. Peers may also influence academic orientations, but across a broad spectrum of colleges and departments, they should be more likely to have impacts on students' interpersonal and non-intellective occupational orientations. This study is restricted to a closely specified set of social relationships and normative contexts and, consequently, does not purport to be exhaustive. In examining the independent effects of social relationships, there may be unmeasured variables intervening between social interaction and socialization outcomes. Since my purpose is to analyze a particular context, the academic department, I rely heavily on theoretical specification to avoid the problems of including spurious variables or excluding variables from the analysis. Second, norms and social relationships can have joint effects on students' values. It is to be expected that normative influences of departmental faculty and students will be stronger when students' social relationships with the norm-sending groups are frequent and personal rather than impersonal and infrequent.

Departmental effects on value change are likely to be stronger when faculty and student normative orientations are similar than when they conflict. If departmental faculty and student norms are at odds, it is difficult to predict whether faculty or peer norms will exert greater socializing influences unless the interpersonal linkages of students with faculty and peers are known. Certainly, it is reasonable to expect that a group with which the student has closer social relationships would be more likely to exert socializing influences than a group with which the student has minimal contact.

The foregoing discussion touches on only a few of the possible patterns of covariation of norms and social relationships, though they are the patterns that seem most likely to appear and are easiest to interpret.

The data analysis presented in Chapter Four deals with the individual and joint effects of these crucial variables and provides further elaboration of these expectations with respect to particular value orientations.

Chapter One

Footnotes

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Chapter Two: Research Design

This study is a secondary analysis of data from recent national surveys of faculty and students in American colleges and universities. These surveys were conducted in conjunction with the National Survey of Higher Education sponsored by the Carnegie Commission on Higher Education in collaboration with the American Council on Education. The faculty survey took place in the spring of 1969; the survey of undergraduates in September, 1966, and again during the Christmas vacation of 1969.

> The faculty (survey was) done in cooperation with the Office of Research of the American Council on Education; the survey of undergraduates was done collaboratively with them. Since 1966 ACE has been conducting surveys of new students in a national sample of over 300 institutions of higher education, representative of all types of American colleges and universities, two and four year, public and private . . .
>
> The ACE sample institutions were selected by a stratified probability method. This sample was used with some modification, for the . . . surveys. All . . . surveys used mail questionnaire forms.[1]

The following is a general description of the undergraduate survey:

> The undergraduate survey utilizes a sample of those students who responded to the American Council on Education ongoing research of first time students during the fall terms of 1966-1969 inclusive. This sample design provided the benefit of panel data for all respondents and easy access to student names and addresses, though it failed to reach those students in sample institutions who first entered college more than four years earlier and those students who transferred into a sample institution after first enrolling in another institution. However, the survey did include those who dropped out or transferred from a sample institution after entering during these 4 terms.

> The undergraduate sample was designed to include approximately 200,000 students. These students were sampled from the respondents to the ACE freshman surveys in a manner which insured representation from each initial cohort in each institution sufficient to provide reliable data on the student body as a whole and on its major segments, as the other surveys aimed to do. These sampling goals were achieved by eliminating from the original sample of 310 institutions those which had not participated during all of the years 1966-69, those with poor response rates to the ACE freshman questionnaires, and those with inadequate student name and address files. This reduced the institutional sample to 189. Then, up to 1,000 students were selected from each institution, distributed by their entrance cohort.[2]

Institutions with poor student response rates (less than 25%) to the 1969 ACE-Carnegie survey were excluded from the analysis, reducing the institutional sample for the present research to 89.

Since this is a study of undergraduate socialization in academic departments, I chose to analyze data from the cohort of students who had had maximum exposure to departmental influences, those who had been in college for 3½ years at the time of the second survey. Students who entered college in 1966 and expected to graduate no later than June, 1971, who had attended college on a full-time basis, and who had responded to both surveys comprised my sample.[3] Furthermore, only white students are included in the present research due to the small number of minority group students in the total sample.

Nine academic departments representative of humanities, natural sciences, and social sciences, were chosen for study: English, music, philosophy, engineering, chemistry, mathematics and statistics, economics, history, and political science. No effort was made to differentiate engineering students by area of specialization. Table 3 shows the distribution by department, sex, and institutional quality of student respondents used for the study.

The questionnaires used to obtain the data for the research are appended. The 1966 ACE freshman student questionnaire is contained in Appendix I.[4] Appendix II contains the 1969 ACE-Carnegie student questionnaire, and Appendix III contains the 1969 ACE-Carnegie faculty questionnaire.[5]

The dependent variables examined are students' occupational values. While the present research is designed to analyze occupational values in the tradition of the Cornell Values Study, it is important that subtle conceptual and methodological clarifications be made in order to distinguish this study from previous research. Although the general content of the value items on the various

TABLE 3.

Distribution of Respondents by Sex,
Quality of Institution Attended in Fourth Year of College, and Department

Sex	MALE					FEMALE				
		Institutional Quality					Institutional Quality			
Department	N	High	Medium	Low	NA	N	High	Medium	Low	NA
English	191	103	57	31	0	391	113	162	115	1
Music	19	9	4	6	0	50	15	20	13	2
Philosophy	46	35	8	3	0	23	13	8	1	1
Engineering	555	277	146	90	42	8	6	1	1	0
Chemistry	144	78	43	18	5	34	12	13	8	1
Mathematics	189	97	54	38	0	146	42	62	41	1
Economics	200	113	45	39	3	51	20	27	3	1
History	282	153	73	56	0	203	81	79	42	1
Political Science	292	156	77	54	5	144	63	61	18	2
Totals	1918	1021	507	335	55	1050	365	433	242	10

questionnaires is similar, the referant of the items used for the present research (ACE-Carnegie) differs from the referant of the items used in previous studies. Examples of similar items from three different questionnaires illustrate these differences:

Cornell Values Study:

"Consider to what extent a job or career would have to satisfy each of these requirements . . .

a) Give me an opportunity to be helpful to others
b) Provide me with a chance to earn a good deal of money
c) Give me a chance to exercise leadership."[6]

National Opinion Research Center (NORC):

"Which of these characteristics would be very important to you in picking a job or career?"

a) Opportunities to be helpful to others or useful to society
b) Making a lot of money
c) A chance to exercise leadership."[7]

ACE-Carnegie (Appendix II, question 19):

"How important are each of the following to you for your future?

a) Opportunities to be useful to society
b) A chance to exercise leadership."

There is also a second group of items, similar to the foregoing, appearing on both the 1969 ACE-Carnegie questionnaire (Appendix II, question 27) and the 1966 ACE freshman questionnaire (Appendix I, question 24):

"Indicate the importance to you personally of each of the following:

a) Helping others who are in difficulty
b) Being very well-off financially
c) Having administrative responsibility for the work of others."

The items in the Cornell and NORC studies refer specifically to "job or career." The ACE-Carnegie items, on the other hand, have the much more vague referent of "personal importance," as well as slightly different content. It is thus much more appropriate to call the Cornell and NORC items measures of "occupational" values than to so designate the ACE-Carnegie items.

For the present research, however, I retained the "occupational" designation for three reasons. First, the content of several items is very similar on all three questionnaires. This enables comparisons of values for the different time periods and samples of students polled. Continuity in social science research is important for more complete understanding of changing trends in the phenomena being studied.

Second, a persistent problem in the development of change theories in sociology has been the paucity of research using true, longitudinal measures. The second group of ACE-Carnegie items provide the only longitudinal measures of students' values as freshmen in the fall of 1966 and then as upperclassmen in the fall of 1969.

Third, continue to use the ACE-Carnegie items as indicators of "occupational" values in the present study because attainment of the personal goals described is usually related to occupational participation. "Being well-off financially," for instance, is generally the result of some type of employment (except, of course, for windfalls, inheritances, and the like.)

This study incorporates two levels of analysis, the individual and the departmental, but the individual student is the unit of analysis. For each student, I developed measures of three properties described by Lazarsfeld and Menzel.[8] "Absolute" characteristics include sex, major, and measures of five occupational values. "Relational" characteristics include measures of students' primary interaction with departmental faculty and friendship ties with departmental peers. "Contextual" properties include departmental faculty and student norms concerning appropriate goals for undergraduate education and departmental student norms on each of the five occupational values. Contextual properties were derived by averaging scores on each measure for all respondents (faculty and students separately) in each department included in the sample. The following is a narrative description of each variable. Table 4 contains summary information about the measures. All scale development was accomplished through the use of the computer program package called SPSS (Statistical Package for the Social Sciences), particularly routines for Guttman scaling (Guttman Scale) and product-moment correlation (Pearson Correlation).[9]

Variables used in the present research were based either on single items or multi-item scales. Item groups for scales were derived on logical grounds, by correlational techniques, or by Guttman scaling techniques. The dependent variables, occupational values, were drawn from a set of items with the instructions, "Indicate the importance to you personally of each of the following. . ." (Appendix I, question 24; Appendix II, question 27). Alternatives and the scores assigned to each were "essential" (4), "very important" (3), "somewhat important" (2), and "not important" (1). Three general

Table 4. Summary of Measures Developed from Questionnaires

Name of Measure[a]	Type[b]	Comments
Occupational Values		
Administration 1, 2[c]	3 items(student questionnaire), Guttman scale	Coefficient of reproducibility = .93[d] Coefficient of scalability = .62[e]
Finance 1, 2	2 items(student questionnaire), summative score	Correlation between items = .74
Eminence 1, 2	2 items(student questionnaire), summative score	Correlation between items = .50
Helping Others 1, 2	1 item(student questionnaire)	
Creativity 1, 2	2 items(student questionnaire), summative score	Correlation between items = .39
Interpersonal Mechanisms of Socialization		
Fac Contact	4 items(student questionnaire), Guttman scale	Coefficient of reproducibility = .87 Coefficient of scalability = .66
Peer Ties	2 items(student questionnaire)	Number of close friends in major department, two considered average
Departmental Norms		
Stud Liberal Ed	1 item(student questionnaire)	Scores summed for all senior respondents in each department in sample. Departmental mean assigned to each student.
Stud Vocational Ed	2 items(student questionnaire)	Correlation between items = .40 Scores summed for all senior respondents in each sample department. Departmental mean assigned to each student.
Fac Liberal Ed	1 item(faculty questionnaire), identical item for Stud Liberal Ed	Scores summed for all faculty respondents in each sample department. Departmental mean assigned to each student.

Table 4. Summary of Measures Developed from Questionnaires -2

Name of Measure[a]	Type[b]	Comments
Fac Vocational Ed	2 items (faculty questionnaire), combined by face validity	Scores summed for all faculty respondents in each sample department. Departmental mean assigned to each student.
Dept. Administration	Same items as Administration 1, 2	Scores summed for all senior respondents in each sample department. Departmental mean assigned to each student.
Dept Finance	Same items as Finance 1, 2	"
Dept Eminence	Same items as Eminence 1, 2	"
Dept Creativity	Same items as Creativity 1, 2	"
Dept Helping others	3 items (student questionnaire), Guttman scale	"
		Coefficient of reproducibility = .93
		Coefficient of scalability = .74

[a]Variable name are shortened versions of the following:

Administration	Orientation toward administrative leadership and responsibility
Finance	Orientation toward financial success in business
Eminence	Orientation toward career eminence, particularly recognition from colleagues
Helping others	Orientation toward helping other people
Creativity	Orientation toward literary and artistic creativity
Fac Contact	Primary, interpersonal interaction with faculty in respondent's major department
Peer Ties	Number of close friends in major department
Stud Liberal Ed	Senior students' liberal education norms in respondent's major department
Stud Vocational Ed	Senior students' Vocational education norms in respondent's major department
Fac Liberal Ed	Faculty liberal education norms in respondent's major department
Fac Vocational Ed	Faculty vocational education norms in respondent's major department
Dept Administration, Dept Finance, Dept Eminence, Dept Creativity, Dept Helping others	Senior students' norms on Administration, Finance, Eminence, Creativity, and Helping Others in respondent's major department

Table 4. Summary of Measures Developed from Questionnaires -3

[b]Items are described in the narrative portion of Chapter Three.

[c]The number 1 following a variable name indicates that the measure is based on a student's freshman responses to the items; the number 2 following a variable name indicates that the measure is based on a student's senior responses to the same items as the freshman measure.

[d]The coefficient of reproducibility is an estimate of the internal consistency and reliability of responses to a set of items. It should be close to .90 to indicate a valid scale. For a complete description of the measure see Louis Guttman, "The Basis for Scalogram Analysis," Measurement and Prediction, ed. Samuel A. Stouffer, et. al. (Princeton: Princeton University Press, 1950), pp. 60-90.

[e]The coefficient of scalability is another estimate of internal consistency and reliability of responses to a set of items. It should be greater than .60 if the scale is truly unidimensional and cummulative. For a complete description of the measure, see Herbert Menzel, "A New Coefficient for Scalogram Analysis," Public Opinion Quarterly, XVII (Summer, 1953), pp. 268-280.

value sets were investigated: orientation toward interpersonal relationships, intrinsic reward orientation, and extrinsic reward or career orientation. Longitudinal data were available on each of these measures.

Student orientation toward interpersonal relationships (Helping Others) was based on a single item, "Helping others who are in difficulty." Scores on this item could range from one to four.

The intrinsic reward orientation used in the analysis, orientation toward literary and artistic creativity (Creativity), was the sum of responses to two items. "Creating artistic work (painting, sculpture, decorating, etc.)," and "Writing original works (poems, novels, short stories, etc.)."

Three extrinsic or career reward orientations were derived for the study. Orientation toward administrative responsibility (Administration) was based on responses to three items, "Having administrative responsibility for the work or others," "Becoming an expert in finance and commerce," and "Becoming a community leader." For this measure, one point was assigned for each response of "essential," or "very important." Scores could range from zero to three.

Career success orientation (Eminence) was the sum of responses to two items, "Obtaining recognition from my colleagues for contributions in my special field," and "Becoming an authority on a special subject in my subject field." Scores on this and other two-item, summative measures ranged from two to eight.

A fifth measure, combining activity and career rewards was orientation toward financial success in business (Finance). It was the sum of responses to two items, "Being successful in a business of my own," and "Being very well-off financially."

Since the present research is an analysis of change in occupational values between freshman and senior year in college, a change measure was also computed for each of the five foregoing values. In order to adjust for students scoring initially very low or very high on the freshman value measure (floor and ceiling effects), the change scores were computed as the difference between senior and freshman value scores divided by the freshman score ($V_s - V_f/V_f$) or the percentage change from freshman to senior year.[10] A constant of one was added to both administration scores because the lowest possible score was zero. Division by zero is an undefined mathematical operation.

Two general types of independent variables are used in the analysis: 1) normative characteristics of academic departments for both faculty and students, and 2) interpersonal mechanisms linking normative influences with socialization in college.[11]

An important aspect of the present research is the analysis of the socializing effects of an individual's participation in an organizational context. Blau describes a method of analyzing the influence of an organizational context, its "structural effects," as follows:

> The essential principle is that the relationship between the distribution of a given characteristic in various collectivities and an effect criterion is ascertained, while this characteristic is held constant for individuals. This procedure differentiates the effects of social structures upon patterns of action from the influences exerted by the characteristics of the acting individuals or their interpersonal relationships. If a structural effect is observed, it invariably constitutes evidence that social processes originating outside the individual personality are responsible for the differences in the dependent variable since the influences of psychological processes have been controlled in the analysis.[12]

Further elaboration of this method has been presented by Campbell and Alexander:

> It is proposed that structural effects be analyzed with a two-step model that employs structural variables to predict the relevant characteristics of an individual's social environment and then explains his behaviors in terms of a social-psychological theory whose predictions take these conditions of the social environment as given.[13]

This approach to the analysis of group-level effects on individual variables is not without its critics. Hauser, in particular, criticizes Blau and others for committing what he terms "the contextual fallacy."

> The contextual fallacy occurs when residual group differences among a set of social groups, which remain after the effects of one or more individual attributes have been partialled out, are interpreted in terms of social or psychological mechanisms correlated with group levels of one of the individual attributes.[14]

A problem that contextual analysis inevitably presents is determining the adequacy of the contextual measures. In short, there is always the possibility that individual variables, unmeasured, but nonetheless correlated with the individual variables aggregated to form group-level measures, are responsible for residual differences among groups on the dependent variable. Hauser suggests the following as a partial resolution of this dilemma:

> In a purely logical sense this objection can never be met because there are always "other" variables. From a practical standpoint, the objection means that one should be prepared to argue that his theory of relations among individual attributes is complete and correct, or at least defensible in relation to some explicit criterion, before speculating about residual group differences.[15]

I deal with this concern for theoretical specification in the present research by using the conceptual model developed in Chapter One. This model includes recognition that the normative pressures exerted on students are functions of the covariation of departmental norms and social relationships. Hauser also suggests that analysis of covariance is an appropriate statistical technique for the study of contextual effects. More detailed descriptions of analysis of covariance and of my reasons for using it in the present research are included in Chapter Four.

The contextual variables of interest here define the normative climate of the department. The two major sources of normative influence are departmental faculty and students. Four measures of departmental norms, two each for departmental faculty and students, were derived by averaging the scores for all departmental respondents in each group on orientations toward 1) liberal education, and 2) occupational or specialized training as preferred outcomes of college. Liberal education norms correspond with the notion of moral instructional goals discussed in Chapter One, and vocational education norms correspond with technical instructional goals. Faculty norms were computed for all departments with faculty respondents.[16] Student norms were computed only for those departments with at least five student respondents.[17] The within-group variance on each measure was also computed so that the effects of normative consistency could be examined.

Student norms concerning academic specialization and occupational training (Stud Vocational Ed) as outcomes of college were derived by averaging responses of departmental students on a two-item scale. The measure was a simple summative score of responses to two items (Appendix II, question 10) indicating the importance to the respondent of "A detailed grasp of a special field," and "Training and skills for an occupation." Scores could range from two (responses of "not important") to six (responses of "essential"). Corresponding faculty norms were derived by averaging responses of departmental faculty on a scale based on two items, personal importance to the faculty member of "Provide undergraduates with a broad liberal education" and "Prepare undergraduates for their chosen occupation" (Appendix III, question 43). Scores were assigned for individuals as follows: liberal education first and occupation third (1), liberal education first and occupation second (2), liberal education second and occupation third (3), liberal education second and occupation second (4), liberal education second and occupation first (5), and liberal education third and occupation first (6).

For both departmental students and faculty, departmental norms concerning the desirability of liberal education as an outcome of college (Stud Liberal Ed, Fac Liberal Ed) were derived by averaging responses by each group to the same item, "Undergraduate education would be improved if there were less emphasis on specialized training and more on broad liberal education" (Appendix II, question 8; Appendix III, question 9). Scores for individuals could range from one ("Strongly disagree") to four ("Strongly agree").

In addition, departmental student norms were computed for each of the five occupational values that constitute the dependent variables in the study. Four of the five measures used for determining the departmental student normative climate on occupational values were derived by averaging responses to the questions indicative of each dependent variable. Departmental student norms concerning orientation toward career rewards (Dept Eminence) were based on responses to "Eminence," norms concerning orientation toward literary and artistic creativity (Dept Creativity) were based on "Creativity," norms concerning orientation toward administrative leadership were based on "Administration," and norms concerning financial success in business (Dept Finance) were based on "Finance." Norms concerning orientations toward people, particularly working with people (Dept Helping Others) were derived from students' scores on a Guttman-type scale. One point was assigned for each of the following: a response of "fairly important" or "essential" to "Learning to get along with people" (Appendix II, question 10); a response of "essential" to "Work with people rather than things" (Appendix II, question 19); and a response of "very important" or "essential" to "Helping others who are in difficulty" (Appendix II, question 27). Scores for individuals could range from zero to three.

It was not possible to do sociometric classifications of normative influences because the data did not contain measures of specific individuals' influences on one another for either faculty or students. Consequently, it was necessary to develop some ways of inferring the existence of influences on the basis of indirect indicators. The focus here is on the socializing effects of attachments or interpersonal ties among departmental members. Two measures were derived as indicators of students' attachments to departmental peers and faculty. The first, a measure of interaction with faculty in the student's major field (Fac Contact), was derived from a set of Guttman-type items that incorporated the dimensions of frequency and intensity of sentiments exchanged. One point was assigned for a response of "yes" on each of the following items (Appendix II, question 23): "Often discuss topics in his field;" "Often discuss other topics of intellectual interest;" "Sometimes engage in social conversation;" and "Ever talk about personal matters." Scores could range from zero to four. As can be seen from Table 4, Fac Contact was the only Guttman scale with a coefficient of reproducibility less than .90, though still a reasonably high .87. I chose to use in it the analysis because 1) it combined the dimensions of frequency and closeness of social relationships, and 2) it was the only scale for which items were designed prior to data collection. The items were ordered on the questionnaire according to the theoretical formulation of the scale.

The second, a measure of extensity of ties to departmental peers (Peer Ties), was based on responses to two items: "Of all your close friends at your college only, what proportion are in your major field" (Appendix II, question 29); and "Of all your close friends, what proportion are students at your college" (Appendix II, question 43). Scores were assigned as follows: a score of 1.00 was given to all combinations of the two items in which there was a response of "none" to either item; 2.00 was assigned to responses of "all" to both items; 1.50 was assigned for responses of "all" close friends on campus and "most" or "a few" close college friends in major; 1.66 was assigned for "most" close friends on campus and "all" close college friends in major; 1.33 was assigned for "most" close friends on campus and "most" or "a few" of close college friends in major, and for "a few" close friends on campus and "all" close college friends in major; and 1.25 was assigned for "a few" close friends on campus and "most" or "a few" close college friends in major.

Appendix IV contains a matrix of the zero-order correlations among the major variables used in the analysis: students' 1966 and 1969 occupational value orientations, primary interaction with departmental faculty, friendship ties with departmental peers, and departmental faculty and student norms concerning the desirability of liberal education and vocational training as outcomes of a college education. Due to low numbers of student respondents, no departmental student norms were calculated for majors in music, philosophy, and chemistry.

From the foregoing descriptions of indicators used for the present research, it should be apparent that specific processes of socialization are not being measured. Rather, the presence or absence of socializing influences is determined by analyzing the systematic covariation of outcomes and conditions. In other words, it is not the process of socialization that is being observed, but only the presence or absence of a socializing mechanism in relation to normative conditions and indications of effect. One caution has been pointed out in this regard by Blau:

> It cannot be simply assumed, however, that any observed group pattern is the result of socialization. Other processes, such as differential selection, might be responsible.[18]

Thus, values of students at entrance to college or start of departmental concentration must be taken into consideration so that prior socialization can be distinguished from the impact of socializing influences during college. I adjusted for the effects of differential selection and recruitment into college and major in the present research by using longitudinal measures of dependent variables and by comparing attributes of both changers and non-changers. The latter procedure allows for the analysis of differential outcomes under similar normative influences in the department.

Three analyses are used, two descriptive and one more analytical. For each, men and women are treated separately. The first is a simple comparison of mean change on each of the five occupational values between September, 1966 and December, 1969 by department.

The second involves comparisons for students grouped by department and successively by change status (negative, no change, positive) on each of the five occupational values of the mean scores taken by these variables: student and faculty educational norms, student norms on the occupational value considered, student/faculty contact, and peer ties. The findings from these two analyses appear in Chapter Three.

In the third, the joint effects of departmental norms and patterns of student/faculty interaction on changes in students' occupational values are estimated. For this purpose I use analysis of covariance, since this procedure uses a regression estimate to adjust for the effects of initial or freshman score on the occupational value. It operates on cases grouped according to two levels each of student/faculty interaction, student/peer interaction, faculty education norms, and student education norms. These findings and a more complete description of covariance analysis are included in Chapter Four.

Chapter Two

Footnotes

1. Martin Trow, et. al., Technical Report: Carnegie Commission National Survey of Higher Education (Berkeley, California: Carnegie Commission on Higher Education, December, 1972), mimeo copy, pp. 1-2. This report also contains descriptions of the sampling and weighting procedures, non-response bias, and other technical details of the surveys.

2. Ibid., pp. 3-4. Institutions are classified by quality (high, medium, low) and level of post-secondary instruction available (college, university). Procedures used for developing the classification and a listing of institutions in each of the six cells are included on pp. 91-125.

3. For a detailed description of the sampling procedures used for selecting the institutions included in the 1966 ACE freshman survey, see Alexander W. Astin, Robert J. Panos, and John A. Centra, "A Program of Longitudinal Research on the Higher Educational System," ACE Research Reports, I (No. 1, 1966).

4. National norms based on responses to the 1966 freshman survey can be found in two reports by Alexander W. Astin, Robert J. Panos, and John A. Centra: "National Norms for Entering College Freshmen - Fall, 1966," ACE Research Reports, II (No. 1, 1967); and "Supplementary National Norms for Freshmen Entering College in 1966," ACE Research Reports, II (No. 3, 1967). A discussion of reliability of survey items of this sort is contained in Robert F. Boruch and John A. Creager, "Measurement Error in Social and Educational Survey Research," ACE Research Reports, VII (No. 2, 1972).

5. Details of sampling procedures and national norms based on responses to the 1969 faculty survey are reported in Alan E. Bayer, "College and University Faculty: A Statistical Description," ACE Research Reports, V (No. 5, 1970).

6. Rose K. Goldsen, et. al., What College Students Think (Princeton: Van Nostrand, 1960), p. 27.

7. James A. Davis, Undergraduate Career Decisions (Chicago: Aldine, 1965), pp. 294-295.

8. Paul L. Lazarsfeld and Herbert Menzel, "On the Relation Between Individual and Collective Properties," A Sociological Reader on Complex Organizations, ed. Amitai Etzioni (New York: Holt, Rinehart, and Winston, 1969), pp. 499-516.

9. Norman Nie, Dale H. Bent, and C. Hadlai Hull, SPSS: Statistical Package for the Social Sciences (New York: McGraw-Hill, 1970).

10. For a general discussion of some methodological problems with respect to floor and ceiling effects of change scores, see Kenneth A. Feldman and Theodore M. Newcomb, The Impact of College on Students, vol. I (San Francisco: Jossey-Bass, 1969), pp. 62-64.

11. For a detailed discussion of the organizational and interpersonal levels of analysis, see Abraham Zaleznik, "Interpersonal Relations in Organizations," Handbook of Organizations, ed. James G. March (Chicago: Rand McNally, 1965), pp. 574-613.

12. Peter M. Blau, "Structural Effects," American Sociological Review, XXV (April, 1960), p. 191.

13. Ernest Q. Campbell and C. Norman Alexander, "Structural Effects and Interpersonal Relationships," American Journal of Sociology, LXXI (September, 1965), p. 285.

14. Robert M. Hauser, "Context and Consex: A Cautionary Tale," American Journal of Sociology, LXXV (January, 1970), p. 659.

15. Ibid., p. 659.

16. The faculty sample was based on a total enumeration of faculty. The faculty response rate was 60 percent. See Trow, et. al., for details, especially pp. 49-60 on non-response bias.

17. Student response rates were generally much lower than faculty response rates, so a minimum departmental student response of 5 was selected to insure stability of normative climate measures. I recognize that this introduces a bias toward the selection of large departments for analysis. In terms of socialization, however, this should result in underestimation of departmental effects since large departments are presumably less cohesive than small ones. The mean numbers of respondents on which departmental norms were based are 15 for faculty and 10 for students.

18. Blau, p. 193.

Chapter Three: Academic Departments and Undergraduates' Occupational Values

This chapter presents descriptive data on students' occupational value orientations by sex and major department. The first part contains profiles on each of the five occupational values considered. The second part contains an analysis of departmental norms and social relationships related to change in values.

Departmental Value Profiles

The purpose of this part of the chapter is to examine the degree of correspondence between value profiles in the data and trends discussed in Chapter One. Included among these trends were the following:

1) Students in humanities tend to be higher than students in natural and social sciences on orientations toward literary and artistic creativity, and intellectual pursuits.

2) Students in natural science and mathematics tend to be high on intellectual orientations, but also higher than social science and humanities majors on career orientations, due in part to the rather close relationship between academic study and activities required for the successful pursuit of careers in science and mathematics.

3) Students in engineering tend to be less intellectually oriented than students in science and mathematics, but just as strongly oriented toward career preparation in college.

4) Students in the social sciences tend to have higher orientations toward working with people than majors in science, mathematics, and engineering. Humanities majors tend to have lower "people" orientations than social science majors, but higher than the other areas mentioned. Majors in fields like economics and other social sciences in Holland's "Conventional" category tend to have the highest financial reward orientations within the social sciences.[1]

I examine five value orientations grouped into the three general categories of "people" (Helping Others), "money" or career (Finance, Administration, Eminence), and "creative and original" (Creativity). I shall describe the configurations for each value, comparing men and women by department. The tables containing the profiles for each occupational value show the following: 1) the average score on each

value scale for students when they entered college as freshmen in the fall of 1966, 2) the average scores for the same people three years later when most respondents in the sample were seniors, and 3) the average change between 1966 and 1969. Average change is computed by summing individual change scores over each group of departments and dividing by the number of respondents in the corresponding departmental group. Table 5 contains means by sex and department for students' orientations toward helping other people. For each of the four departments in which the mean for women's senior orientations toward helping others is significantly different from the mean for senior men, the women's mean is higher. This table also illustrates potential floor and ceiling effects because women, initially much higher than men on orientation toward helping others, tend to report little change on this value, while men, initially lower than women, tend to become more oriented toward helping others during college.

A prior expectation was that majors in the social sciences would have the highest people orientations, but that is not confirmed here. Among senior scores, men in music have the highest mean on this value, followed by women in philosophy, chemistry, and English. These findings are particularly surprising, since all of these areas require more individual than interpersonal activities. I cannot explain why both male and female chemistry majors are so high on people orientation. There are no significant differences by sex for majors in music and philosophy on people orientation, though the general tendency is for women to become more and men less people-oriented during college. On this particular value, configurations of values and value change lend only minimal support to expectations.

Table 6 contains the means by department and sex on students' orientations toward administrative leadership, an extrinsic reward orientation. Among men, majors in economics, history, and politics were highest on this value. Among women, majors in economics, history, and philosophy had the highest means. For all departments except music and chemistry, women's senior scores on this value were significantly lower than men's senior scores. Only for economics majors was the mean change significantly different for men and women, with women decreasing and men increasing during college in orientations toward administrative leadership. Women, generally, are also much less oriented toward administrative leadership than men, probably because women's aspirations tend toward careers and career responsibilities of a non-administrative nature. Traditionally, occupational recruitment for women has not tended to occur in administrative areas. There are also cross-sex pressures on women proscribing certain sorts of role-behavior. Husbands suggests the following reasons for women's orientations:

> Women make contingency plans for their futures, and marriage is the primary contingency. Young women modify their behavior to prevailing standards of 'femininity' and to whatever notions they have of what a man expects in a marriage partner.[2]

Table 5. Student Orientations Toward Helping Other People: Freshman Score, Senior Score, Per Cent Change Between Freshman and Senior Year in College (Means by Department and Sex)

	Men			Women		
Department	Frosh Helping Others	Senior Helping Others	% Change	Frosh Helping Others	Senior Helping Others	% Change
English	2.66	2.80	3.4	3.10[a]	2.97[a]	1.9[a]
Music	3.26	3.11	-4.6	3.00	2.89	3.3
Philosophy	2.93	2.63	-4.8	3.18	3.00[a]	-1.5
Engineering	2.59	2.51	2.1	*	*	*
Chemistry	2.68	2.79	11.0	3.21[a]	3.00	-5.0[a]
Mathematics	2.62	2.54	3.2	2.96[a]	2.76[a]	.1
Economics	2.76	2.74	4.9	3.00[a]	2.80	-3.3
History	2.80	2.81	6.0	3.00[a]	2.94[a]	3.4
Politics	2.80	2.90	9.1	2.88	2.88	6.7

[a]Difference between means for men and women significant at or below the .05-level, based on t-test.

*Not enough cases (fewer than 10) for meaningful comparisons.

Table 6. Student Orientations Toward Administrative Leadership: Freshman Score, Senior Score, Percent Change Between Freshman and Senior Year in College (Means by Department and Sex)

	Men			Women		
Department	Frosh Administration	Senior Administration	% Change	Frosh Administration	Senior Administration	% Change
English	.71	.41	-6.6	.41[a]	.26[a]	-1.5
Music	.74	.41	-3.9	.42	.24	-4.0
Philosophy	.64	.53	4.5	.59	.23[a]	-11.0
Engineering	.70	.69	17.9	*	*	*
Chemistry	.69	.50	.5	.39[a]	.45	14.5
Mathematics	.64	.42	.7	.37[a]	.28[a]	3.5
Economics	1.28	1.22	16.3	.82[a]	.54[a]	-4.5[a]
History	.94	.62	.8	.41[a]	.24[a]	.6
Politics	1.14	.87	2.6	.63[a]	.49[a]	4.2

[a]Difference between means for men and women significant at or below the .05-level, based on t-test.

*Not enough cases (fewer than 10) for meaningful comparisons.

These findings on orientations toward administrative responsibility certainly indicate this sort of differentiation by sex on expected occupational roles. Two other observations on Table 6 are that administrative values of men in the fields of history, politics, and engineering rank very high, as expected. Women in history, however, are among the lowest in senior orientations on this value. Again, this indicates differential outcomes within departments by sex. Helping others and assuming administrative responsibility for the work of others are both rather specific activities involved in occupational roles. As might be expected, the former activity is of greater concern for women, the latter of greater concern for men.

Two other value orientations refer to the extrinsic rewards of income and career recognition. Men and women tend to become less oriented to both of these values during college, but departmental configurations on each are quite different from one another. Table 7 contains means by sex and department for orientations toward the attainment of financial success in business. Women's means are significantly lower than men's for all departments except music, where means are similar for men and women. As was the case for administration, these findings suggest a marked differentiation along potential career lines by sex. Women are not as oriented toward the attainment of financial success as men. This lends support to the assertion in Chapter One that women may attain the same sorts of financial rewards through marriage that men attain through occupational participation. Perhaps most college women still feel that the husband should be the family's main provider. Another possibility is that women are just not as interested in the sorts of activities involved in the attainment of financial success, partly due to perceptions of limited access for women to business careers.

As was also the case for administrative responsibility orientations, majors in economics (both men and women) had the highest means on financial success orientation. For senior women, financial success orientations were similar across all departments except philosophy, which was considerably lower than the rest. For men, financial success orientations of majors in engineering, history, and politics fell close behind those of economics majors, confirming preliminary expectations. Generally, passage through college tends to result in reduced student orientations toward financial success.

As shown in Table 8, students' orientations toward career eminence also tend to decrease during college for everyone except women in music and philosophy. It may be that women in these two areas are reinforced for good performance in their academic endeavors and, insofar as undergraduate work is related to specific aspects of a future career, undergraduate success raises their career aspirations. The same might be said of men majoring in music since they report the highest orientations toward career eminence of any major group. It is also interesting to note, as with financial success orientations, that women have significantly lower career eminence orientations than men for all majors except philosophy. This is further

Table 7. Student Orientations Toward Financial Success: Freshman Score, Senior Score, Per Cent Change Between Freshman and Senior Year in College (Means by Department and Sex)

	Men			Women		
Department	Frosh Finance	Senior Finance	% Change	Frosh Finance	Senior Finance	% Change
English	4.77	3.78	-15.5	4.13[a]	3.28[a]	-14.5
Music	4.42	3.47	- 7.2	3.71	3.50	2.0
Philosophy	4.35	3.60	- 7.7	3.73	2.86[a]	-12.7
Engineering	5.09	4.40	- 8.4	*	*	*
Chemistry	4.80	3.93	-13.8	3.48[a]	3.32[a]	- 1.3[a]
Mathematics	4.78	3.95	-13.7	4.10[a]	3.35[a]	-14.7
Economics	5.60	4.80	-10.1	4.66[a]	3.49[a]	-20.0[a]
History	5.16	4.11	-15.9	4.05[a]	3.18[a]	-16.8
Politics	5.16	4.24	-13.5	4.31[a]	3.40[a]	-18.0

[a]Difference between means for men and women significant at or below the .05-level, based on t-test.

*Not enough cases (fewer than 10) for meaningful comparisons.

Table 8. Student Orientations Toward Career Eminence: Freshman Score, Senior Score, Per Cent Change Between Freshman and Senior Year in College (Means by Department and Sex)

	Men			Women		
Department	Frosh Eminence	Senior Eminence	% Change	Frosh Eminence	Senior Eminence	% Change
English	5.54	4.82	- 8.2	5.05[a]	4.22[a]	-11.5
Music	6.37	6.11	- 3.3	5.52[a]	3.35[a]	3.1
Philosophy	5.65	4.64	-12.2	4.59[a]	5.00	21.1[a]
Engineering	5.65	4.97	- 8.5	*	*	*
Chemistry	5.88	5.35	- 7.0	5.55	5.03	-10.2
Mathematics	5.66	5.03	- 8.4	5.12[a]	3.92[a]	-21.2[a]
Economics	5.45	4.55	-12.4	5.10[a]	4.04[a]	-17.8
History	5.74	4.86	-12.3	5.29[a]	4.27[a]	-14.7
Politics	5.74	5.13	- 7.2	5.26[a]	4.41[a]	-12.7

[a]Difference between means for men and women significant at or below the .05-level, based on t-test.

*Not enough cases (fewer than 10) for meaningful comparisons.

evidence of much lower career-related value orientations among women than among men. The findings show that not only do women enter college with lower career eminence orientations than men, but women also tend to have larger, negative changes than men. Husbands' assertion, quoted previously, seems even more cogent in light of these results.

On the only intrinsic reward orientation considered, literary and artistic creativity, different configurations also appear for men and women. These findings are shown in Table 9. First, the overall pattern of change during college for men and women is toward increased creativity orientations. However, women tend to change less than men, largely because women's freshman orientations toward literary and artistic creativity tend to be higher than men's. Senior men in music have the highest mean creativity orientations, followed closely by women in philosophy and both men and women in English. English and music are two majors which presumably involve students directly in artistic and/or literary activities. Since men in philosophy are also high on creativity orientations, it appears that majoring in philosophy for both sexes involves emphasis on skillful written argument. Those departments whose disciplines require little of students in the way of written expression (engineering, chemistry, mathematics, and economics) also have majors, both male and female, with the lowest creativity orientations. This profile parallels findings reported by Thistlewaite with respect to students' "Esthetic Orientations."[3]

On the whole, these results follow the expectations outlined at the beginning of this chapter, both with respect to the rank of students in various departments on each value orientation and in the gross change tendencies indicated. Also affirmed are notable differences in values by sex. Men tend to be higher than women in the more directly career-related orientations (financial success, career eminence, and administrative responsibility), while women tend to be higher than men on orientations toward helping others. Women's freshman orientations toward literary and artistic creativity tend to be higher than men's, but senior creativity orientations are similar for both men and women.

Some additional information about patterns of value change is included in Table 10 which shows the proportions of students in each department reporting no change during college on each of the five values. Since similar findings resulted for both men and women, the table does not include a breakdown by sex. For students majoring in all areas except economics and politics, administrative leadership orientation is the most stable of the five values considered. Career eminence and financial success orientations are the least stable.

Table 9. Student Orientations Toward Literary and Artistic Creativity: Freshman Score, Senior Score, Per Cent Change Between Freshman and Senior Year in College (Means by Department and Sex)

	Men			Women		
Department	Frosh Creativity	Senior Creativity	% Change	Frosh Creativity	Senior Creativity	% Change
English	4.27	4.76	22.8	4.36	4.56	11.2[a]
Music	3.16	5.06	66.9	3.68	4.00[a]	21.5[a]
Philosophy	3.76	4.36	28.8	4.18	4.95	28.2
Engineering	2.75	2.83	8.9	*	*	*
Chemistry	2.94	2.95	7.3	3.52[a]	3.19	-1.8
Mathematics	2.86	3.02	10.8	3.09[a]	2.90	2.6[a]
Economics	2.90	2.97	10.3	2.94	3.00	9.4
History	3.31	3.46	13.9	3.72[a]	3.64	5.3[a]
Politics	3.22	3.44	15.9	3.54[a]	3.28	- .7[a]

[a]Difference between means for men and women significant at or below the .05-level, based on t-test.

*Not enough cases (fewer than 10) for meaningful comparisons.

TABLE 10.

Proportions of Students Reporting No Change in Occupational Values from Freshman to Senior Year in College by Department (Per Cent)

		VALUE				
Department	(N)	Administration	Finance	Creativity	Career Eminance	Helping Others
English	(582)	63.0	28.0	28.5	22.7	47.4
Music	(69)	60.3	25.4	27.4	32.8	45.3
Philosophy	(69)	66.2	22.4	21.2	19.4	43.3
Engineering	(563)	49.3	22.3	49.3	22.4	47.4
Chemistry	(178)	61.8	28.1	42.7	23.0	52.9
Mathematics	(335)	63.7	28.5	45.8	23.9	45.7
Economics	(251)	38.4	20.8	45.9	22.0	40.2
History	(485)	50.7	25.7	35.7	23.9	45.8
Politics	(436)	47.1	23.1	37.4	26.4	49.2

Correlates of Value Change

This part of the chapter presents more elaborate profiles by department of the effects norms and social relationships have on change in students' values. This step begins a more systematic investigation of variables influencing values and allows an initial test of expectations discussed in Chapter One. The following are some of the general relationships expected between departmental student and faculty norms, departmental social relationships, and student value change during college:

1. Personal contact with departmental faculty is expected to have a positive influence on change in students' values concerning intellectual endeavor.

2. Primary social relationships with departmental peers are expected to exert positive influences on change in more closely career-related orientations of students.

3. Departmental student and faculty liberal education (moral) norms are expected to have positive effects on change in both intrinsic reward and interpersonal orientations.

4. Departmental student and faculty vocational education (technical) norms are expected to exert positive influences on change in career orientations.

5. For each occupational value, positive change is expected to be influenced by high departmental student norms on the corresponding value.

While the measures for intrinsic reward (creativity) and interpersonal (helping others) orientations lend themselves to straightforward testing of the foregoing expectations, the three extrinsic reward or career orientations (finance, administration, and eminence) each tap somewhat different values. Consequently, one task of this portion of the data analysis is to refine expectations by linking them more closely to the values measured here. Another task is to identify clusters of effects that suggest the operation of joint or interacting variables. Both types of findings could provide points of departure for the systematic investigation employing more rigorous statistical techniques reported in the following chapter.

Two methodological issues should be addressed before reporting the findings for this part of the data analysis. The first concerns the use of group means as the sole indicator of the strength of a norm. Another indicator, within-group variance on the norm, might also be considered. For example, research discussed in Chapter One suggests that departments in which there is general agreement or consistency among members on a particular normative position should exert stronger influences on students' values than departments with inconsistent norms.

To test the socializing effects of departmental normative consensus, I did a partial correlational analysis of the relationship between departmental norms and change in students' values, controlling for within-department variance on norms and sex. These results are shown in Table 11. On only two of twenty-five comparisons was the partial r notably different from the simple r. Introducing the controls for sex and normative consistency among peers on the corresponding value resulted in 1) a reduction from the zero-order correlation between departmental student administration norms and change in administration orientation during college, and 2) an increase from the zero-order correlation between departmental student creativity norms and change in creativity orientation during college. Even these two coefficients are really too small to attribute substantial support to an argument that normative agreement or consistency among members is an important determinant of departmental impact. Consequently, for the data at hand, it is not necessary to consider within-department variance on norms when examining departmental impact.

The second methodological issue concerns the analysis of average change, as reported in the first part of this chapter. Feldman points out that this procedure may obscure changes made by individuals.

> A mean difference score obscures the fact that change may be in different directions for different individuals. Moreover, neither the extensity of change (the number or proportion of individuals changing in a given direction) nor the intensity of change (the degree to which individuals change in the given direction) can be determined from the average difference above.[4]

In order to deal more directly with individual change, I partitioned the sample by the student's change status during college on each of the five value orientations: positive (freshman score lower than senior score), negative (freshman score higher than senior score), and no change (freshman and senior scores the same). In addition, I grouped students by their sex and department. I shall compare means of change status groups on departmental norms and social relationships. Three departments (music, philosophy and chemistry) are not included in this and subsequent analyses because there were not enough student respondents from individual departments for the computation of reliable student norms.

These findings are reported in Tables 12-16. Rather than discussing each significant effect for every value, I will attempt to summarize and synthesize trends in the data contained in these very lengthy and complex tables. Unfortunately, the only unequivocal confirmation of expectations occurred among men for departmental student norms on each occupational value. In twenty-seven of thirty comparisons, positive changers on a value were in departments with higher student norms on that value than negative and non-changers. For women, similar effects appeared in only eight of twenty-one

Table 11. Relationships Between Departmental Norms and Student Value Change, Controlling for Sex and Within-Department Normative Variance

Departmental Norm	Value (Change Score)[a]								
	Helping Others		Administration		Finance		Eminence		Creativ
	r	r	r	r	r	r	r	r	r
	Simple	Partial	Simple	Partial	Simple	Partial	Simple	Partial	Simple
Stud Liberal Ed	.03	.04	-.09	-.09	-.04	-.04	.01	.02	.03
Stud Vocational Ed	-.07	-.07	.08	.08	.04	.04	.05	.04	.00
Stud Value[b]	.03	.04	.15	.07	.17	.14	.26	.24	.13
Fac Liberal Ed	.06	.06	-.10	-.08	-.07	-.09	-.02	-.00	.05
Fac Vocational Ed	-.03	.01	.08	.05	.03	-.00	.00	-.03	-.02

[a]The change score, used for the dependent variable is the average difference between a student's freshman and senior score on each of the five values, i.e. $(V_s - V_f) / V_f$. Controls for partial r are sex and within-department standard deviations for each norm. Students were assigned the means and standard deviations on each norm for their major departments.

[b]This is the departmental mean for all students in the department on the value heading the column.

comparisons. These data suggest very consistent effects of departmental peer occupational value orientations on the values of individual male students that cut across all six departments on each of the five values. For women, the effects of departmental peer occupational orientations are clustered only among majors in English and mathematics, where there are significant, positive effects on three of the five values.

Table 12 contains comparisons of means on departmental student and faculty norms, faculty contact, and peer ties for three categories of student change on administrative leadership, a career orientation. One cluster of effects appears on this table for women majoring in mathematics. Contrary to expectations, women reporting negative changes on administration tend to be in departments with the highest student vocational education norms and the lowest student liberal education norms. Women in mathematics did report, however, the expected negative influence of faculty contact on change in administrative leadership orientation.

Among men majoring in engineering, history, and political science, non-changers report the lowest rates of contact with departmental faculty. Apparently, students who interact infrequently with faculty insulate themselves from challenges to their values. The finding also suggests that faculty contact for men is just as likely to result in positive as negative change on administration orientations. Here it would be very useful to know something about departmental faculty norms. If the normative influences communicated through faculty contact were known, it would be possible to predict with much greater accuracy the effects of faculty contact on value change.

One important reason for the small number of significant influences on students' administrative leadership orientations may simply be the great stability during college for students on this value.

Table 13 shows the results of comparisons, by student change status, on financial success, a second extrinsic reward orientation. For men in political science, peer ties have the expected, positive influence on finance orientations. Faculty contact has the expected negative effect on finance orientations for men in English departments. For men in economics, however, contact with departmental faculty exerts a positive influence on finance orientations. These findings suggest that the academic discipline and related activities represented by a department influence the sorts of contents communicated in social interaction. Since economics is a discipline whose subject matter deals almost exclusively with monetary concerns, the positive effect of faculty contact on men's finance orientations is not surprising.

The only confirmation of expectations for the effects of student educational norms on change in financial success orientation appears for women majoring in political science. But, the effects of the same variables for women in history are contrary to expectations.

TABLE 12.

Departmental Student and Faculty Interaction, Departmental Student and Faculty Academic Norms, and Departmental Student Administrative Leadership Norms by Sex, Major, and Change Between Freshman and Senior Year in Individual Students' Orientations Toward Administrative Leadership (Means)

Major Department	Variable	Administration Change Status MEN -[d]	MEN 0	MEN +	WOMEN -	WOMEN 0	WOMEN +
ENGLISH	Peer Ties	1.29	1.29	1.27	1.30	1.29	1.31
	Stud Liberal Ed	2.86	2.87	2.81	2.68	2.68	2.72
	Stud Vocational Ed	3.60	3.69	3.70	4.05	4.05	4.00
	Dept Administration	.34	.35[b]	.60[c]	.31	.31	.34
	Fac Contact	2.48	2.48	2.24	2.26	2.14	2.49
	Fac Liberal Ed	3.17	3.23	3.23	3.06	3.04	2.93
	Fac Vocational Ed	1.82	1.77	1.82	1.80	1.73	1.68[c]
ENGINEERING	Peer Ties	1.32	1.32	1.33	*	*	*
	Stud Liberal Ed	2.16	2.15	2.15	*	*	*
	Stud Vocational Ed	4.89	4.86	4.92	*	*	*
	Dept Administration	.70	.67[b]	.77[c]	*	*	*
	Fac Contact	2.01[a]	1.72[b]	2.17	*	*	*
	Fac Liberal Ed	1.97	2.05	2.00	*	*	*
	Fac Vocational Ed	3.85	3.93	3.88	*	*	*
MATHEMATICS	Peer Ties	1.28	1.27	1.30	1.31	1.26	1.33
	Stud Liberal Ed	2.29	2.36	2.37	2.15[a]	2.33	2.43[c]
	Stud Vocational Ed	4.42	4.28	4.49	4.59	4.54[b]	4.13[c]
	Dept Administration	.38	.39[b]	.55[c]	.33	.40[b]	.50[c]
	Fac Contact	1.94	1.67	1.62	2.43[a]	1.72	1.94
	Fac Liberal Ed	2.60[a]	2.41	2.35	2.64	2.58	2.59
	Fac Vocational Ed	3.02	3.20	3.33	2.64	2.96	2.67

TABLE 12 (cont'd)

Department	Variable	Administration Change Status	MEN			WOMEN	
		-[d]	0	+	-	0	+
ECONOMICS	Peer Ties	1.28	1.29	1.26	1.22	1.26	*
	Stud Liberal Ed	2.74	2.64	2.67	2.59	2.45	*
	Stud Vocational Ed	3.54	3.62	3.70[c]	3.89	3.79	*
	Dept Administration	1.10	1.16	1.27[c]	.72	.71	*
	Fac Contact	2.08	1.97	2.16	2.14	2.17	*
	Fac Liberal Ed	2.79	2.80	2.75	2.80	2.81	*
	Fac Vocational Ed	2.10	1.95	1.89	2.09	2.17	*
HISTORY	Peer Ties	1.30	1.28	1.29	1.29	1.28	1.26
	Stud Liberal Ed	2.65	2.69	2.59	2.71	2.68	2.55
	Stud Vocational Ed	3.76	3.65	3.65	3.80	3.79	3.94
	Dept Administration	.55	.55[b]	.73[c]	.36	.38	.44
	Fac Contact	2.32[a]	1.95[b]	2.48	2.50	2.18	2.13
	Fac Liberal Ed	2.98	3.03	2.99	3.12[a]	2.98[b]	2.85[c]
	Fac Vocational Ed	1.66	1.75	1.77	1.81	1.70	1.75
POLITICS	Peer Ties	1.30	1.30	1.29	1.30[a]	1.26	1.26
	Stud Liberal Ed	2.78	2.81	2.76	2.60	2.63[b]	2.52
	Stud Vocational Ed	3.55	3.56	3.57	3.79	3.77	3.85
	Dept Administration	.77	.75[b]	.86[c]	.58	.58	.57
	Fac Contact	2.35[a]	1.99[b]	2.38	2.62	2.26	2.09
	Fac Liberal Ed	3.04	3.01	3.01	2.78	2.84	2.96
	Fac Vocational Ed	1.95	2.05	2.23[c]	1.68	1.70	1.71

*Not enough cases (fewer than 10) in group for meaningful comparisons.

[a]Significance of difference between the means for negative changers and non-changers $\leq$ .05 (based on t statistic).

[b]Significance of difference between the means for positive changes and non-changes $\leq$ .05 (based on t statistic).

[c]Significance of difference between the means for positive changers and negative changers $\leq$ .05 (based on t statistic).

[d]- = negative change (freshman score higher than senior score), 0= no change (freshman and senior scores the same), += positive change (senior score higher than freshman score).

TABLE 13.

Departmental Student and Faculty Interaction, Departmental Student and Faculty Academic Norms, and Departmental Student Financial Success Norms by Sex, Major and Change Between Freshman and Senior Year in Individual Students' Orientations Toward Financial Success in Business (Means)

Major Department	Variable	Finance Change Status	MEN			WOMEN	
		-[d]	0	+	-	0	+
ENGLISH	Peer Ties	1.29	1.26	1.31	1.30	1.28	1.31
	Stud Liberal Ed	2.90[a]	2.77	2.90	2.70	2.66	2.69
	Stud Vocational Ed	3.66	3.69	3.62	4.03	4.06	4.02
	Dept Finance	3.55	3.54	3.65	3.37	3.33[b]	3.48[c]
	Fac Contact	2.73[a]	1.98	2.07[c]	2.16	2.26	2.43
	Fac Liberal Ed	3.23	3.13	3.27	3.02	3.04	3.07
	Fac Vocational Ed	1.81	1.79	1.77	1.77[a]	1.67	1.77
ENGINEERING	Peer Ties	1.31	1.33	1.33	*	*	*
	Stud Liberal Ed	2.14	2.16	2.14	*	*	*
	Stud Vocational Ed	4.88	4.86	4.90	*	*	*
	Dept Finance	4.36	4.38[b]	4.46[c]	*	*	*
	Fac Contact	1.85	1.92	2.09[c]	*	*	*
	Fac Liberal Ed	2.00	2.11[b]	1.94	*	*	*
	Fac Vocational Ed	3.90	4.04[b]	3.72	*	*	*
MATHEMATICS	Peer Ties	1.28	1.29	1.25	1.28	1.26	1.31
	Stud Liberal Ed	2.37	2.30	2.30	2.28	2.34	2.34
	Stud Vocational Ed	4.32	4.28[b]	4.58[c]	4.52	4.51	4.34
	Dept Finance	3.63	3.65[b]	3.91[c]	3.58	3.69	3.92[c]
	Fac Contact	1.64	1.89	2.00	1.88	1.84	1.81
	Fac Liberal Ed	2.51	2.40	2.35	2.60	2.58	2.60
	Fac Vocational Ed	3.22	3.03	3.29	2.97[a]	2.74	2.84

TABLE 13.(cont'd)

Department	Variable	Finance Change Status: MEN - [d]	MEN 0	MEN +	MEN -	WOMEN 0	WOMEN +
ECONOMICS	Peer Ties	1.28	1.29	1.27	1.25	1.17	*
	Stud Liberal Ed	2.70	2.61	2.67	2.61	*	*
	Stud Vocational Ed	3.62	3.52	3.67	3.80	*	*
	Dept Finance	4.48[a]	4.73	4.75[c]	3.85	*	*
	Fac Contact	1.87	2.18	2.37[c]	2.04	2.18	*
	Fac Liberal Ed	2.80	2.85[b]	2.69	2.77	2.94	*
	Fac Vocational Ed	1.96	2.11	1.95	2.07	2.35	*
HISTORY	Peer Ties	1.30	1.28	1.29	1.28	1.27	1.27
	Stud Liberal Ed	2.65	2.69	2.61	2.67	2.63[b]	2.80
	Stud Vocational Ed	3.72	3.61	3.74	3.83	3.83[b]	3.61[c]
	Dept Finance	3.88	3.89[b]	4.21[c]	3.38	3.39	3.38
	Fac Contact	2.13	2.36	2.29	2.38	2.11	2.05
	Fac Liberal Ed	3.00	2.98	3.04	3.01	3.00	3.04
	Fac Vocational Ed	1.69	1.75	1.74	1.73	1.76	1.62
POLITICS	Peer Ties	1.28	1.30	1.33[c]	1.28	1.24	1.31
	Stud Liberal Ed	2.79	2.78	2.80	2.61	2.69[b]	2.48[c]
	Stud Vocational Ed	3.56	3.57	3.52	3.75	3.78[b]	3.98[c]
	Dept Finance	3.93	4.05[b]	4.39[c]	3.63	3.69	3.72
	Fac Contact	2.19	2.16	2.11	2.36	2.27	2.28
	Fac Liberal Ed	3.03	2.93	3.04	2.85	2.84	2.91
	Fac Vocational Ed	2.02	2.08	2.11	1.71	1.69	1.62

*Not enough cases (fewer than 10) for meaningful comparison.

[a]Significance of difference between the means for negative changers and non-changers $\leq .05$ (based on t statistic).

[b]Significance of difference between the means for positive changers and non-changers $\leq .05$ (based on t statistic).

[c]Significance of difference between the means for positive changers and negative changers $\leq .05$ (based on t statistic).

[d] - = negative change, 0 = no change, + = positive change.

These overall results do not show very convincing confirmation of the expectations concerning normative and interpersonal influences on change in financial success orientations.

Correlates of change in career eminence orientations are shown in Table 14. If career eminence is considered to be an extrinsic reward orientation, departmental peer ties should influence eminence orientations positively. This is the case only for women in mathematics.

Faculty contact, on the other hand, is also positively related to change in eminence orientations for men majoring in English, mathematics, and history. A similar relationship appears for women in English departments. These findings suggest that eminence orientations are not purely career orientations. Again, it would be helpful to know the content communicated via faculty contact. Since the eminence measures incorporate indicators of orientations toward achievement in a special field and recognition from colleagues, eminence has something in common with intrinsic reward orientations. If so, eminence should be influenced positively by liberal education norms. This effect does appear for men in English on departmental student liberal education norms. Contradictory evidence appears for men in mathematics, however, where change in eminence orientations is negatively related to faculty liberal education norms. Findings are just as inconsistent for the effects of departmental vocational norms on change in eminence orientations.

Table 15 contains the influences of norms and social relationships on individual change in creativity orientations. Since the general trend among all English majors is to increase in creativity orientations during college, negative changers report the fewest departmental peer ties. Notable effects on change in creativity orientations that confirm expectations appear on faculty contact for women in English and economics and on faculty vocational education norms for women in political science. While effects on change in creativity orientations occur in the expected directions, there are too few significant effects for very accurate confirmation of expectations.

Finally, comparisons of variable means by change status on orientation toward helping others is shown in Table 16. For both men and women, the relationships among change status on helping others, norms, and social relationships are partially confirming and partially disconfirming. The most consistent effects occur among men in economics where the influences of faculty liberal education norms, faculty vocational education norms, and student vocational education norms are all contrary to expectations. Faculty vocational educational norms have the expected effects on change in helping others for men and women in English, and for men in mathematics.

TABLE 14.

Departmental Student and Faculty Interaction, Departmental Student and Faculty Academic Norms, and Departmental Student Career Eminence Norms by Sex, Major, and Change Between Freshman and Senior Year in Individual Students' Orientations Toward Career Eminence (Means)

		Eminence Change Status					
		MEN			WOMEN		
Department	Variable	-[1]	0	+	-	0	+
ENGLISH	Peer Ties	1.29	1.28	1.29	1.30	1.27	1.30
	Stud Liberal Ed	2.83	2.74[b]	3.02[c]	2.69	2.67	2.67
	Stud Vocational Ed	3.65[a]	3.82[b]	3.56	4.01[a]	4.13	4.03
	Dept Eminence	4.35	4.55[b]	4.96[c]	4.27[a]	4.41	4.52[c]
	Fac Contact	2.05[a]	2.75	2.96[c]	1.98[a]	2.41	2.68[c]
	Fac Liberal Ed	3.27	3.11	3.16	3.02	3.08	3.03
	Fac Vocational Ed	1.72[a]	1.97	1.81	1.73	1.81[b]	1.67
ENGINEER-ING	Peer Ties	1.33	1.32	1.30[c]	*	*	*
	Stud Liberal Ed	2.15	2.14	2.15	*	*	*
	Stud Vocational Ed	4.88	4.91	4.87	*	*	*
	Dept Eminence	4.96	4.98	5.02	*	*	*
	Fac Contact	1.85	1.96	2.02	*	*	*
	Fac Liberal Ed	1.99	2.00	2.05	*	*	*
	Fac Vocational Ed	3.88	3.94	3.84	*	*	*
MATHE-MATICS	Peer Ties	1.28	1.28	1.30	1.27	1.24[b]	1.39[c]
	Stud Liberal Ed	2.40	2.33	2.24[c]	2.31	2.30	2.29
	Stud Vocational Ed	4.16[a]	4.45	4.60[c]	4.49	4.45	4.67
	Dept Eminence	4.43[a]	4.73[b]	5.21[c]	4.32	4.41[b]	4.76[c]
	Fac Contact	1.41[a]	2.10	2.23[c]	1.74	2.08	2.00
	Fac Liberal Ed	2.61	2.44	2.15[c]	2.52[a]	2.72	2.73
	Fac Vocational Ed	3.29	3.19	2.94	2.96	2.72	2.74

TABLE 14.(cont'd)

Department	Variable	Eminence Change Status: MEN - [d]	MEN 0	MEN +	WOMEN -	WOMEN 0	WOMEN +
ECONOMICS	Peer Ties	1.27	1.25[b]	1.31	1.22	1.23	*
	Stud Liberal Ed	2.64	2.74	2.72	2.52	*	*
	Stud Vocational Ed	3.59	3.68	3.62	3.85	*	*
	Dept Eminence	4.27[a]	4.58	4.67[c]	3.92	*	*
	Fac Contact	1.98	2.24	2.11	1.92	2.33	*
	Fac Liberal Ed	2.82	2.73	2.76	2.78	*	*
	Fac Vocational Ed	2.02	1.95	1.92	2.14	*	*
HISTORY	Peer Ties	1.30	1.28	1.27	1.28	1.24	1.29
	Stud Liberal Ed	2.62	2.65	2.74[c]	2.67	2.63	2.72
	Stud Vocational Ed	3.69	3.78	3.64	3.77[a]	3.93	3.81
	Dept Eminence	4.54[a]	4.97	4.92[c]	4.41	4.49	4.46
	Fac Contact	2.02	2.33	2.42[c]	2.21	2.32	2.36
	Fac Liberal Ed	3.00	3.00	2.99	2.99	3.05	3.06
	Fac Vocational Ed	1.71	1.77	1.68	1.76	1.70	1.68
POLITICS	Peer Ties	1.29	1.30	1.32	1.28	1.25	1.28
	Stud Liberal Ed	2.82[a]	2.75	2.77	2.62	2.58	2.56
	Stud Vocational Ed	3.50[a]	3.69	3.55	3.76	3.84	3.79
	Dept Eminence	4.83[a]	5.04	5.04[c]	4.61	4.77	4.75
	Fac Contact	2.05	2.21	2.28	2.22	2.56	2.43
	Fac Liberal Ed	3.00	3.08	2.95	2.85	2.82	2.92
	Fac Vocational Ed	2.04	2.06	2.07	1.73	1.71[b]	1.54[c]

*Not enough cases (fewer than 10) in group for meaningful comparison.

[a]Significance of difference between the means for negative changers and non-changers $\leq .05$ (based on t statistic).

[b]Significance of difference between the means for positive changers and non-changers $\leq .05$ (based on t statistic).

[c]Significance of difference between the means for positive changers and negative changers $\leq .05$ (based on t statistic).

[d] - = negative change, 0 = no change, + = positive change.

TABLE 15.

Departmental Student and Faculty Interaction, Departmental Student and Faculty Academic Norms, and Departmental Student Creativity Norms by Sex, Major, and Change Between Freshman and Senior Year in Individual Students' Orientations Toward Literary and Artistic Creativity (Means)

Major Department	Variable	MEN Creativity Change Status -[d]	MEN 0	MEN +	WOMEN -	WOMEN 0	WOMEN +
ENGLISH	Peer Ties	1.24[a]	1.30	1.30[c]	1.30	1.29	1.29
	Stud Liberal Ed	2.82	2.87	2.88	2.69	2.66	2.69
	Stud Vocational Ed	3.63	3.66	3.68	3.96	4.06	4.10[c]
	Dept Creativity	4.64	4.65	4.78	4.65	4.62[b]	4.73
	Fac Contact	2.17	2.45	2.53	1.98	2.23	2.38[c]
	Fac Liberal Ed	3.28	3.17	3.19	3.01	3.01	3.08
	Fac Vocational Ed	1.70	1.84	1.82	1.72	1.77	1.73
ENGINEERING	Peer Ties	1.32	1.32	1.32	*	*	*
	Stud Liberal Ed	2.11	2.15	2.17[c]	*	*	*
	Stud Vocational Ed	4.92	4.87	4.87	*	*	*
	Dept Creativity	2.84	2.81[b]	2.91[c]	*	*	*
	Fac Contact	1.81	1.88	2.06	*	*	*
	Fac Liberal Ed	1.96	2.02	2.04	*	*	*
	Fac Vocational Ed	3.90	3.87	3.88	*	*	*
MATHEMATICS	Peer Ties	1.27	1.29	1.28	1.26[a]	1.31[b]	1.25
	Stud Liberal Ed	2.28	2.34	2.37	2.33	2.28	2.31
	Stud Vocational Ed	4.48	4.34	4.31	4.41	4.56	4.52
	Dept. Creativity	2.84	2.79[b]	3.21[c]	2.95	2.99	3.03
	Fac Contact	1.66	1.68	2.00	2.10	1.72	1.76
	Fac Liberal Ed	2.38	2.40	2.59	2.55	2.58	2.67
	Fac Vocational Ed	2.82[a]	3.38	3.04	2.85	2.86	2.96
ECONOMICS	Peer Ties	1.27	1.27	1.30	1.22	1.24	1.23
	Stud Liberal Ed	2.65	2.68	2.70	*	2.52	*
	Stud Vocational Ed	3.61	3.59	3.67	*	3.81	*
	Dept.Creativity	2.84	2.89[b]	3.21[c]	*	2.68	*
	Fac Contact	2.31	1.96	2.04	1.58	2.15	2.75[c]
	Fac Liberal Ed	2.81	2.77	2.79	2.89	2.76	2.79
	Fac Vocational Ed	1.94	2.06	1.90	2.05	2.28	1.91

TABLE 15.(cont'd)

Department	Variable	Creativity Change Status: MEN - [d]	MEN 0	MEN +	WOMEN -	WOMEN 0	WOMEN +
HISTORY	Peer Ties	1.30[a]	1.26[b]	1.31	1.25[a]	1.30	1.28
	Stud Liberal Ed	2.66	2.63	2.67	2.74	2.64	2.64
	Stud Vocational Ed	3.61[a]	3.76	3.73	3.77	3.86	3.79
	Dept. Creativity	3.38	3.37[b]	3.55[c]	3.47	3.59	3.74[c]
	Fac Contact	2.32	2.11	2.16	2.14	2.14	2.52
	Fac Liberal Ed	2.97	2.98	3.05	3.00	3.04	2.99
	Fac Vocational Ed	1.69	1.76	1.69	1.73	1.76	1.71
POLITICS	Peer Ties	1.29	1.30	1.29	1.31[a]	1.24	1.27
	Stud Liberal Ed	2.82[a]	2.74	2.80	2.62	2.60	2.58
	Stud Vocational Ed	3.48[a]	3.62	3.57	3.76	3.81	3.82
	Dept. Creativity	3.36	3.32[b]	3.47	3.40	3.40	3.42
	Fac Contact	2.16	2.08	2.21	2.47	2.37	2.04
	Fac Liberal Ed	2.95	3.00	3.06	2.80	2.90	2.85
	Fac Vocational Ed	2.05	1.99	2.06	1.73	1.72[b]	1.58[c]

*Not enough cases (fewer than 10) in group for meaningful comparison.

[a]Significance of difference between the means for negative changers and non-changers $\leq .05$ (based on t statistic).

[b]Significance of difference between the means for positive changers and non-changers $\leq .05$ (based on t statistic).

[c]Significance of difference between the means for positive changers and negative changers $\leq .05$ (based on t statistic).

d - = negative change, 0 = no change, + = positive change.

TABLE 16.

Departmental Student and Faculty Interaction, Academic Norms, and Departmental Student Helping People Norms by Sex, Major and Change Between Freshman and Senior Year in Individual Students' Orientations Toward Helping Others (Means)

		Helping Others Change Status					
		MEN			WOMEN		
Major Department	Variable	-[d]	0	+	-	0	+
ENGLISH	Peer Ties	1.28	1.29	1.29	1.31	1.29	1.29
	Stud Liberal Ed	2.90	2.85	2.85	2.68	2.68	2.69
	Stud Vocational Ed	3.64	3.66	3.65	4.04	4.06	4.03
	Dept Helping Others	2.05[a]	2.21	2.27[c]	2.33	2.36	2.37
	Fac Contact	2.28	2.42	2.55	2.20	2.22	2.17
	Fac Liberal Ed	3.11	3.21	3.27	3.04	3.04	3.04
	Fac Vocational Ed	1.93	1.80	1.71[c]	1.81	1.73	1.69[c]
ENGINEERING	Peer Ties	1.33[a]	1.30	1.34	*	*	*
	Stud Liberal Ed	2.18	2.14	2.12	*	*	*
	Stud Vocational Ed	4.85	4.89	4.91	*	*	*
	Dept Helping Others	1.68	1.69	1.73[c]	*	*	*
	Fac Contact	1.82	1.95	1.94	*	*	*
	Fac Liberal Ed	1.90[a]	2.04	2.08[c]	*	*	*
	Fac Vocational Ed	3.76	3.93	3.97	*	*	*
MATHEMATICS	Peer Ties	1.30[a]	1.26	1.30	1.29	1.27	1.29
	Stud Liberal Ed	2.30	2.35	2.39	2.28	2.32	2.33
	Stud Vocational Ed	4.47	4.33	4.21	4.53	4.51	4.41
	Dept Helping Others	1.74	1.73[b]	1.92[c]	1.97	1.92	1.85
	Fac Contact	2.15[a]	1.69	1.60[c]	1.72	1.88	2.03
	Fac Liberal Ed	2.56	2.39	2.47	2.62	2.59	2.54
	Fac Vocational Ed	3.43[a]	2.98	3.20	2.83	2.89	2.93
ECONOMICS	Peer Ties	1.28	1.26	1.28	1.24	1.21	1.28
	Stud Liberal Ed	2.72	2.73[b]	2.58	2.63	*	*
	Stud Vocational Ed	3.56	3.60	3.70	3.79	*	*
	Dept Helping Others	2.01	2.05	2.11[c]	1.97	*	*
	Fac Contact	2.20	1.97	2.04	2.59[a]	1.63	2.40
	Fac Liberal Ed	2.80	2.83[b]	2.72	2.77	2.85	2.84
	Fac Vocational Ed	1.94	1.89[b]	2.18	2.13	2.10	*

TABLE 16.(cont'd)

Department	Variable	Helping Others Change Status: MEN -[d]	MEN 0	MEN +	WOMEN -	WOMEN 0	WOMEN +
HISTORY	Peer Ties	1.28	1.29	1.30	1.29	1.28	1.26
	Stud Liberal Ed	2.68	2.62	2.68	2.64	2.68	2.69
	Stud Vocational Ed	3.72	3.73	3.65	3.78	3.86	3.74
	Dept Helping Others	2.23	2.27	2.32[c]	2.33	2.37	2.35
	Fac Contact	1.93	2.20	2.47[c]	2.22	2.34	2.22
	Fac Liberal Ed	2.96	3.01	3.03	3.03	3.04[b]	2.92
	Fac Vocational Ed	1.77	1.69	1.69	1.72	1.77	1.69
POLITICS	Peer Ties	1.31	1.28	1.31	1.25	1.27	1.30
	Stud Liberal Ed	2.83	2.76	2.80	2.60	2.61	2.59
	Stud Vocational Ed	3.58	3.57	3.52	3.78	3.80	3.77
	Dept Helping Others	2.21	2.23[b]	2.32[c]	2.34	2.36[b]	2.44[c]
	Fac Contact	2.02	2.24	2.14	2.24	2.47	2.29
	Fac Liberal Ed	3.01	2.99	3.06	2.84	2.85	2.86
	Fac Vocational Ed	2.15	2.00	2.09	1.58[a]	1.74	1.68

*Not enough cases (fewer than 10) in group for meaningful comparison.

[a]Significance of difference between the means for negative changers and non-changers $\leq .05$ (based on t statistic).

[b]Significance of difference between the means for positive changers and non-changers $\leq .05$ (based on t statistic).

[c]Significance of difference between the means for positive changers and negative changers $\leq .05$ (based on t statistic).

[d] - = negative change, 0 = no change, + = positive change.

On the whole, this highly descriptive analysis has produced many individual findings but few clearly interpretable patterns of normative and interactional influences on value change. In an already diverse sample, partitioning by major department and change status on an occupational value resulted in comparisons based on equally diverse groups of students. For several comparisons, the means on faculty contact for changers on a value were not significantly different from each other but they were significantly different from the means of non-changers. This illustrates the necessity of identifying the nature of the normative influences exerted by department members and of controlling for analytical rather than global characteristics of departments. A more fruitful approach for the present research would be to compare effects on students across similar contexts, defined analytically by the covariation of departmental norms and social relationships. The following chapter takes the present research to this next analytical level, defining like contexts and comparing student value change through the use of covariance analysis.

Chapter Three

Footnotes

1. Holland's categories were discussed earlier, in Chapter One.

2. Sandra Acker Husbands, "Women's Place in Higher Education?," School Review, LXXX (February, 1972), pp. 265-266.

3. Donald L. Thistlewaite, Effects of University Subcultures on Student Attitudes, Technical Report of Research Supported by NSF Grants GS-2658 and GS-28984 (Nashville: Vanderbilt University, 1972), p. 48.

4. Kenneth A. Feldman, "Difficulties in Measuring and Interpreting Change and Stability During College," College and Student, ed. Kenneth A. Feldman (New York: Pergamon Press, 1972), p. 133.

Chapter Four: Undergraduate Socialization in Academic Departments

The findings from the previous chapter are difficult to interpret because the effects of interpersonal and contextual variables vary so widely from department to department. These results indicate that the variables chosen theoretically for the analysis do have effects on value change, but the specification of these effects remains somewhat unclear. In this chapter I use a different approach to the analysis of departmental impact in an effort to determine more consistent influences of contextual and interpersonal variables.

Value Change, Contextual Effects and Covariance Analysis

In this section of the study, the goal is to describe a method for grouping respondents on the basis of analytically defined characteristics of their major departments and of their ties to those departments. More rigorous empirical specification of normative influences should provide more consistent indicators of effects than appeared in Chapter Three. An important shortcoming of methods using change scores as dependent variables has been discussed by Lord:

> In general, the analysis of observed gains results in a built-in bias in favor of whatever treatments happen to be assigned to initially low-scoring groups. This bias is not likely to be large unless the number of individuals per group is small; thus analyses of observed gains will often not be seriously misleading. It would be preferable to avoid this bias altogether, however.[1]

Lord suggests analysis of covariance as an appropriate statistical technique for avoiding the problems involved in analyzing change scores that provides similar, though not identical, results. The technique is described by Lord as follows, where x is a before-treatment measure and y is an after-treatment measure:

> An analysis of covariance . . . is essentially an analysis of "adjusted y-scores," which are simply deviations from the regression line of y on x . . . The analysis of covariance is equivalent to a simple significance test between the means of the distribution of adjusted y-scores. (This equivalence falls short of exact identity because the regression line itself is not known exactly and must be estimated from the data.)[2]

In the present research, y is a student's senior value and x is the student's freshman score on the same value. As used here, analysis of covariance provides a statistical control for the effects of student's values at entrance to college on their values three years later. The covariance adjustment does not necessarily remove the effects of the student's freshman scores on a value from the student's senior score on that value, simply because subjects in the present research are not randomly assigned to the treatment groups. Bock and Haggard describe the appropriate considerations as follows:

> It is frequently assumed that when pre-test scores are available, individual differences can be eliminated and the usual requirement of random assignment of the subjects to the experimental and control groups relaxed. Actually, this is true only if all individual differences in the "post-test," i.e., the dependent variable, are represented in the concomitant variable. In mental test terminology, the pre- and post-tests must have the same factorial composition. If not, the groups may be biased with respect to factors of performance which affect the post-test but are not present in the pre-test scores and cannot be eliminated by analysis of covariance.[3]

Contextual analyses of the sort generally done by sociologists virtually preclude the random assignment of respondents to design groups. According to Hauser, "it is only the nonrandom assignment of individuals to groups which permits the identification of contexts with group composition on specific predictor variables."[4] Even though I have attempted to develop a convincing theoretical argument for my selection of variables, I recognize that the results may be biased by correlated, but unmeasured, variables. Hence, findings cannot always be interpreted unambiguously as departmental effects.

An additional advantage of covariance analysis for the present research is that it "permit(s) the assumption that group membership interacts with other variables, that is, that the individual predictors have effects which vary from group to group."[5] I use both departmental measures (norms) and individual measures (social relationships) jointly in grouping individuals for covariance analysis.

Readers interested in more technical, mathematical treatments of covariance analysis written from a sociological perspective should see recent works by Fennessey, Schuessler, and Blalock.[6] Another good technical source, containing treatments of factorial designs with unequal cell frequencies, is a book by Winer.[7]

For the covariance analysis, students were grouped by 1) the educational norms of faculty and peers in their major departments, and 2) social interaction with departmental faculty and peers. For each educational norm (Fac Liberal Ed, Fac Vocational Ed, Stud Liberal Ed, Stud Vocational Ed), scores were dichotomized at the median. The social interaction measures (Fac Contact, Peer Ties)

were also dichotomized, but not at the median. The range of possible scores on each was too small to divide respondents into equal-size groups. Scores on faculty contact of zero, one, and two were considered "low" (57% of cases); scores of three and four were considered "high" (43% of cases). Scores of peer ties of 1.00 and 1.25 were considered "low" (33% of cases); scores of 1.33, 1.50, 1.66, and 2.00 were considered "high" (67%). This means that 1) the effects of "high" faculty contact are probably underestimated in the covariance analysis, and 2) the effects of "high" peer ties are overestimated.

Each covariance analysis was performed with four, two-level independent variables; either Fac and Stud Liberal Ed or Fac and Stud Vocational Ed, Fac Contact, and Peer Ties, resulting in sixteen design cells. I did not include both liberal and vocational education norms in a single covariance analysis because adding two independent variables would have increased the number of design cells to sixty-four. Given the number of cases available for the analysis, too many treatment cells would have been empty. The dependent variable was the student's 1969 score on the occupational value considered and the student's freshman year (1966) score on the dependent variable was the covariate. Separate analyses were done for males and females, again to avoid excessive design cells. Respondents with missing data on any of the six independent variables were excluded, leaving 1319 men and 673 women for the repective covariance analyses. The computer program used for covariance analysis was the University of Minnesota Computation Center statistical program UMST570: Multivariate Analysis of Variance.[8]

Respondents were assigned to the design cells for covariance analysis on the basis of departmental norms and social relationships regardless of the academic discipline represented in the department. As might be expected, particular disciplines are over-represented in certain design cells. However, even though the variation of academic disciplines represented between design cells is greater than the variation within cells, no cell has departments from only one discipline. Similarly, the variation of institutional quality represented between cells is greater than the variation within cells. Student socio-economic status is not included as a design variable because it is virtually unrelated to senior (1969) values. Simple correlations with SES range from -.02 for financial success orientation to .09 for creativity orientation.

Appendixes V,VI, VII, VIII contain the means and standard deviations on freshman values, and the adjusted means on senior values by sex for each of the covariance analysis design cells. To improve readability of this section of the study, I have included the analysis of covariance results, Tables 18-37, in Appendix IX. I shall discuss only those main effects and statistical interactions that are significant at or below the .08 level. I selected .08, rather than the traditional .05, because I want to consider as broad a spectrum of potentially important relationships among variables as

possible. I am more interested in analyzing trends in the data than strict empirical verification of propositions. In large-sample survey research, it is often difficult to establish clear-cut relationships among variables. This concern is especially cogent here for two reasons. First, the correlations among variables shown in Appendix IV B are relatively low. Second, there were relatively low response rates by institution and high sample attrition rates that resulted from restricting analysis to students responding to both the 1966 and 1969 surveys.[9]

Main Effects of Departmental Norms and Social Relationships

Expectations for the main effects of norms and social relationships on students' values are, with one exception, the same as they were for Chapter Three. The exception is the expected effect of faculty contact on career eminence orientations. Findings from the last chapter suggest that students' eminence orientations are linked to achievement in areas related to the academic major and thus are likely to be positively influenced by social interaction with departmental faculty. I shall discuss the main effects of each independent variable in turn and, where possible, compare its effects for men and women. Table 17 contains a summary of these relationships grouped by sex and occupational values.

The effects of departmental social relationships will be discussed first, since these effects are the same whether students are grouped for analysis by departmental liberal education or vocational education norms. Contact with departmental faculty is more consistently influential than peer ties, having similar effects for both males and females on three of the five values -- helping others, literary and artistic creativity, and career eminence. This finding suggests lower salience of peer influences in departments relative to other college settings. It represents a possible limitation of the present study because other settings and social relationships are not examined. On the other hand, faculty do influence students in departments, the settings where both theory and common-sense say these effects should be concentrated.

Faculty contact has a positive effect on both sexes' orientations toward helping others. Men reporting high faculty contact had lower adjusted senior means on helping others (2.71) than women reporting high faculty contact (2.93). This is probably due simply to women's higher scores on this orientation at entrance to college.

Contact with departmental faculty also has a positive influence on students' creativity orientations. As was the case for interpersonal orientations, men reporting high faculty contact had lower adjusted senior means on creativity (3.37) than their female counterparts (4.05). That women's creativity orientations are higher than men's is due, in part, to the scale items that refer to skills of writing poetry or fiction and creative arts, traditionally more feminine than masculine activities. The sex difference is also due,

Table 17. Summary of Main Effects from Covariance Analysis

	Values									
	Helping Others		Administration		Finance		Eminence		Creativity	
Sex of Student	M	F	M	F	M	F	M	F	M	F
Departmental Norms										
Student Liberal Education	+[a]	0	0	0	-	0	0	0	+	0
Faculty Liberal Education	+	0	0	0	0	0	-	+	+	+
Student Vocational Education	-	0	0	0	0	+	+	0	-	0
Faculty Vocational Education	-	-	0	0	0	0	0	0	-	-
Departmental Social Interaction										
Peer Ties	0	0	+	+	0	0	+	0	0	-
Faculty Contact	+	+	0	+	0	0	+	+	+	+

[a] A "+" indicates that respondents in the "high" category on the independent variable (norms, social interaction) had a significantly higher ($p \leq .08$) mean on the adjusted dependent variable (1969 values) than respondents in the "low" category on the independent variable. A "-" indicates that the mean on the dependent variable is higher for respondents in the "low," rather than the "high," category of the independent variable. Zeroes indicate non-significant effects.

in part, to the large proportion (37%) of female respondents majoring in English. The relationships shown in Table 17 between faculty contact and career eminence orientations are positive for both sexes, though male students reporting high faculty contact have expectably higher mean eminence orientations (5.15) than their female counterparts (4.56). The items comprising the eminence scale refer to gaining recognition from colleagues and making contributions in a special field. To the extent that the groundwork for such accomplishments is laid in the major department, it is not surprising that faculty would exert positive influences on students' eminence orientations.

The positive effect of departmental faculty contact on women's administrative leadership orientations is puzzling. Perhaps women who interact frequently with faculty are both more disposed than infrequent interactors to initiate contacts and more likely to assume responsibility for completing course activities or other departmental tasks. Without some knowledge of unmeasured normative influences transmitted via faculty contact, it is difficult to explain this finding. There were no statistical interactions between measured departmental norms and social relationships for women on administrative leadership orientations. Consequently, the finding remains puzzling.

For departmental peer ties, the significant main effects are all in the expected directions. Male students reporting high departmental peer ties had higher senior means on administrative leadership orientations (.83) than their female counterparts (.60). This sex difference is consistent with the one reported for the influence of faculty contact on career eminence orientations.

The effects of departmental student and faculty liberal education (moral) norms on students' orientations toward helping others and creativity are in the expected positive direction for men. Also for men, the effects of departmental student and faculty vocational education (technical) norms are in the expected negative direction.

Comparisons by sex indicate that women in high faculty vocational education norm departments have higher adjusted senior means on orientations toward helping others (2.69) and creativity (3.24) than their male counterparts who had means of 2.55 and 3.01, respectively. In addition, women in high faculty liberal education norm departments have higher mean creativity orientations (3.99) than their male counterparts (3.47).

Some other puzzling zero-order relationships are the opposite effects by sex of departmental liberal education norms on career eminence orientations. These findings suggest that for men, departmental norms influence eminence in the patterns expected for an extrinsic reward. For women, however, the normative influence is in the opposite direction. Differences by sex suggest differential vulnerability to socializing pressures.

In summary, zero-order effects on values of departmental norms and social relationships appear much more clearly in the covariance analysis than they did in Chapter Three. Relationships were, by and large, in the expected directions. It should be noted also that departmental faculty norms and faculty contact exert more significant influences (16) on undergraduates' values than do student norms and peer ties (11). In the absence of departmental impacts, I can only speculate about unmeasured influences lying outside the department. As suggested previously, peer influences are more likely than faculty influences to be concentrated in college settings other than departments, e.g., residences, extra-curricular activities, dating, etc.

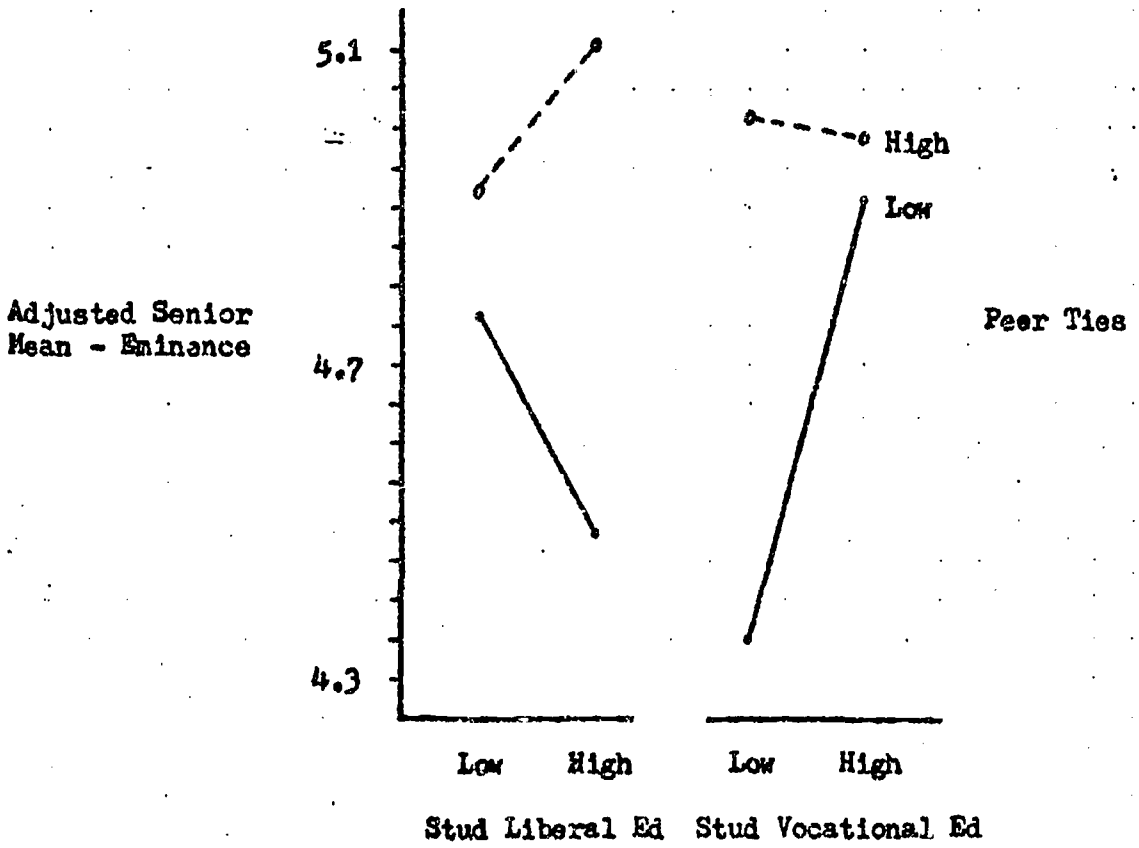
First-order Interaction Effects

In this part of the chapter I deal with the following questions: Are the normative influences of departments mediated by social relationship? Are the effects of faculty contact mediated by peer ties? Are the effects of faculty norms mediated by student norms? Each question can be addressed by examining a first-order interaction effect. The addition of a control variable enables more direct specification of the conditions under which particular normative climates have the greatest influence on students' values. The first general controls examined are the social relationships of students with either peers or faculty norm senders. On the basis of the theorectical discussion in Chapter One, I expect the normative influences of the department to have the greatest effects on values when students have close social relationships with members of the norm-sending group.

In the following discussion, the figures illustrating statistical interactions contain means on the dependent variable summed over each category of the listed independent variables. Circles are used to designate the mean score of all individuals in the "high" category of the variable listed on the right side of the coordinate system; points are used to designate means for the "low" category. The dotted and solid lines simply connect like points. The lines suggest the direction of differences between means, but they do not denote continuous functions.

Figure 2 shows the statistical interaction between departmental student norms and peer ties for men on orientations toward career eminence. As would be expected, the effects for liberal and vocational education norms are in opposite directions. It's still unclear whether eminence orientations are more amenable to the influences of liberal or vocational education norms. From these two graphs, it does appear that peer influences on career eminence are quite strong, regardless of student norms. The graph also shows that high student vocational norms have a strong, positive effect on career eminence orientations, independent of peer ties. Conversely, high student liberal education norms are more influential when students have close departmental peer ties. Peer solidarity makes little difference with respect to career eminence orientations for men in

Figure 2. Career Eminence by Departmental Student Liberal and Vocational Education Norms, and Peer Ties (Males)



high student vocational education norm departments, and a great deal of difference for men in high student liberal/low student vocational education norm departments.

Just as contact with departmental faculty showed the greatest number of zero-order effects on students' values, the interaction of faculty norms and faculty contact showed the greatest number of significant first-order effects. Figure 3 shows the statistical interaction between faculty vocation education norms and faculty contact for women with respect to career-eminence orientations. Faculty contact is shown in this graph to have a positive effect on eminence, independent of faculty norms. The joint influence of high faculty vocational education norms and high faculty contact results in a strong, positive effect on women's career eminence orientations. Eminence orientations must be interpreted for women as values concerning career achievements in areas closely related to the academic major.

The joint effects of faculty norms and faculty contacts on orientations toward helping others for both men and women are shown in Figure 4. For men, the effects of faculty vocational education and liberal education norms are in opposite directions, as expected. Also for men, the effects of low faculty vocational education and high faculty liberal education norms on helping others are strengthened by student solidarity with departmental faculty. For countervailing norms, there is virtually no effect of faculty solidarity. Women show much different influences than men with respect to orientations toward helping others. For women, the crucial determining factor is not faculty liberal education norms, but faculty contact. That is, women reporting high rates of contact with departmental faculty have high orientations toward helping others, independent of faculty liberal education norms. But, faculty liberal education norms do have a positive effect on helping others for women reporting low faculty contact.

Figure 5 shows a consistent, positive effect of faculty contact on men's creativity orientations, regardless of departmental faculty vocational education norms. This graph illustrates the transmission of normative influences via interpersonal contact, though a really clear-cut confirmation of expectations would be a graph showing the solid and dotted lines crossing one another.

Another example of the strong joint effects of high faculty vocational education norms and high faculty contact for women on finance orientations is shown in Figure 6, a. As hypothesized, the highest financial success orientations occur among women in high faculty vocational education norm departments who also report high faculty contact. Again, women are affected by departmental faculty norms only when they have close, personal contact with faculty.

Figure 3. Career Eminence by Departmental Faculty Vocational Education Norms and Contact With Departmental Faculty (Females)

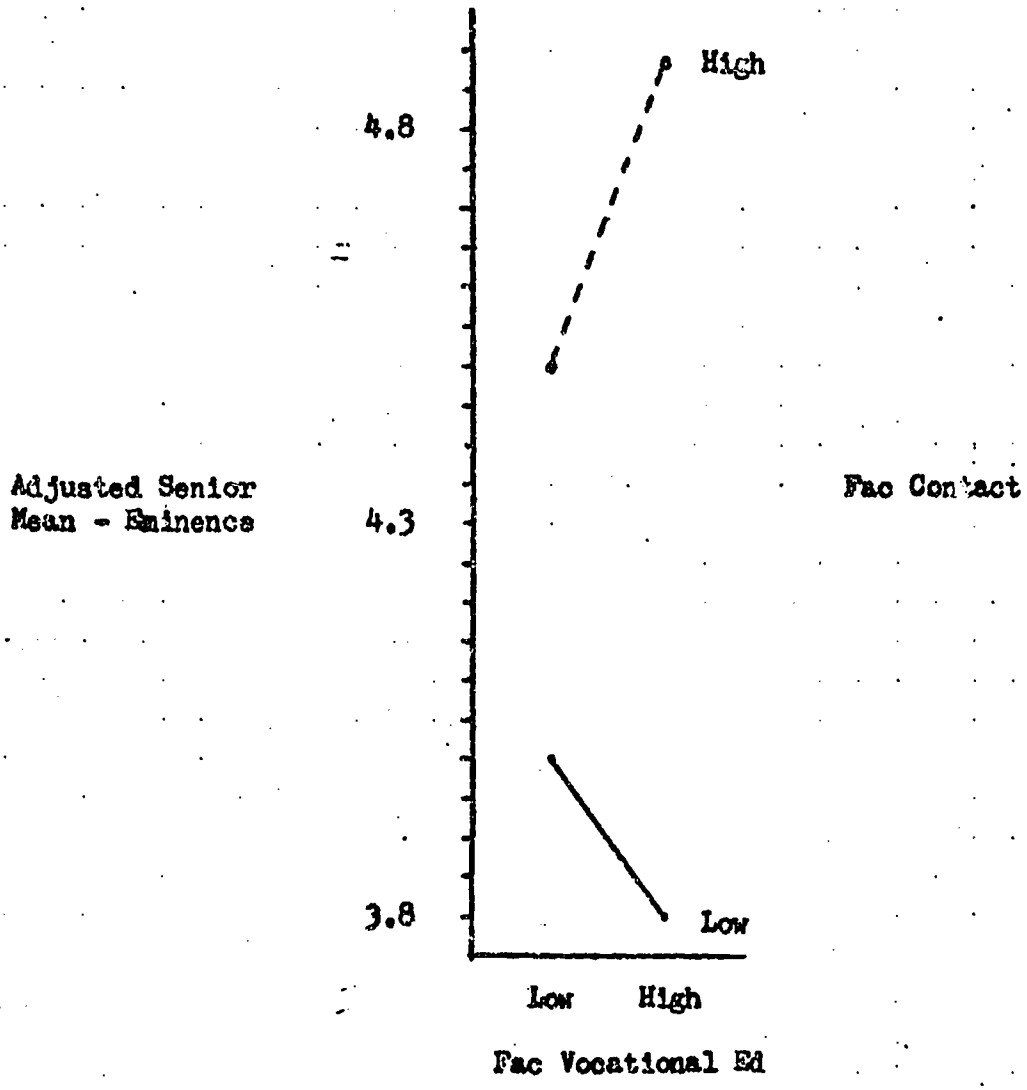


Figure 4. Helping Others by Departmental Faculty Vocational and Liberal Education Norms, and Contact With Departmental Faculty

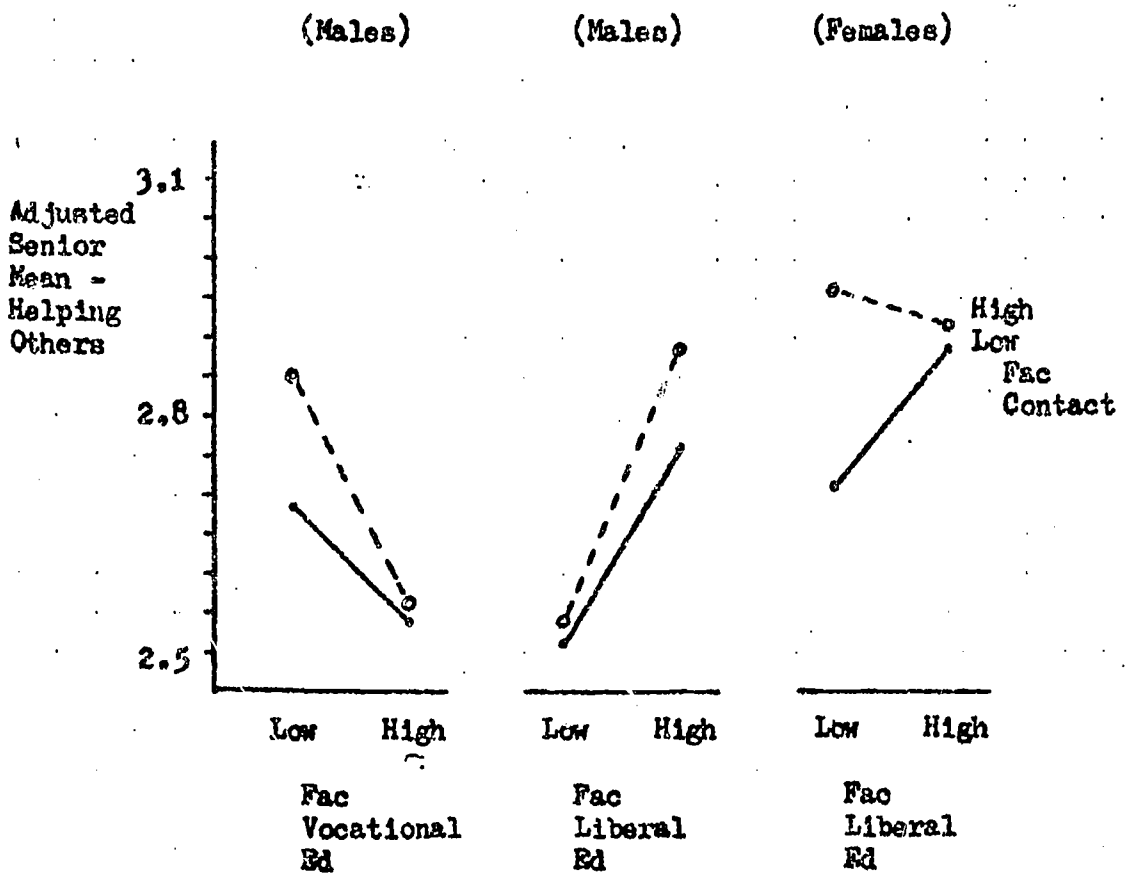


Figure 5. Creativity by Departmental Faculty Vocational Education Norms and Contact With Departmental Faculty (Males)

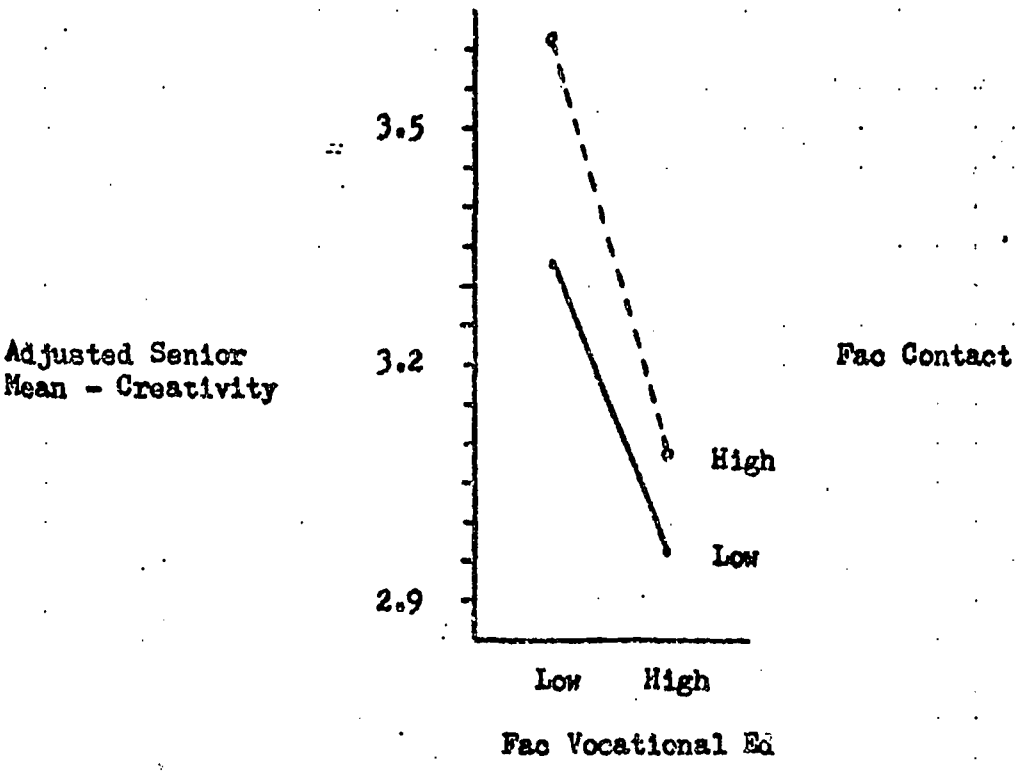
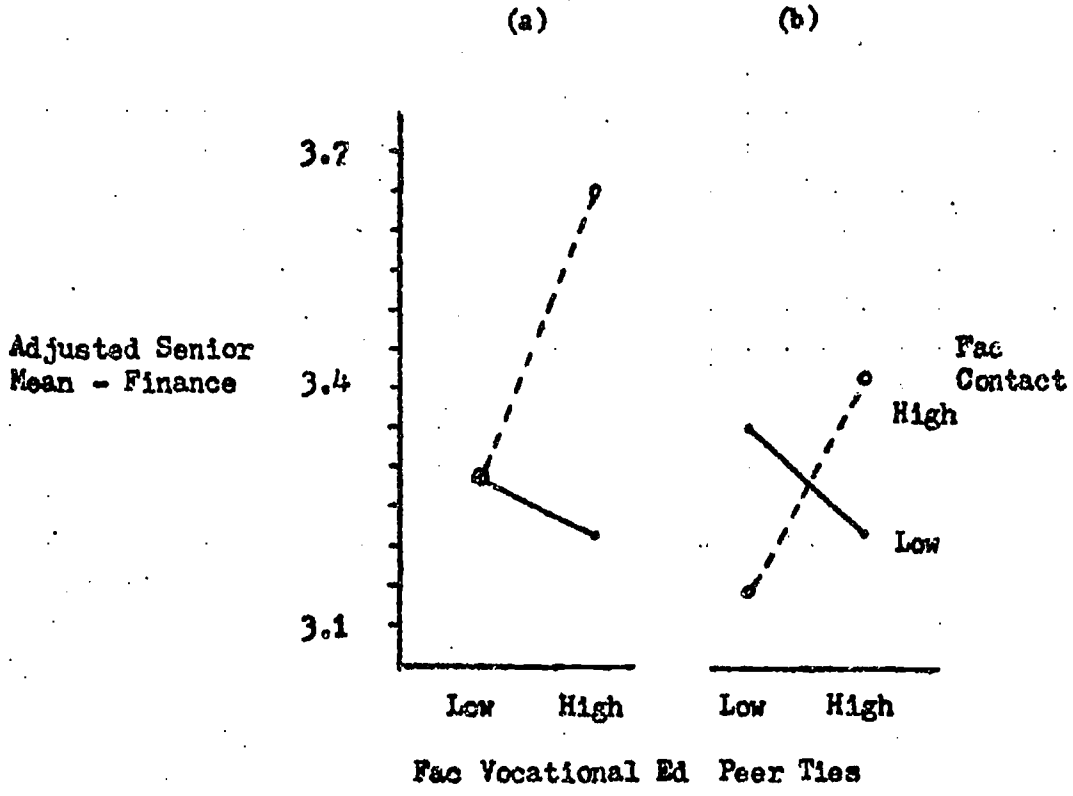


Figure 6. Finance by (a) Departmental Faculty Vocational Education Norms and Contact With Departmental Faculty, and (b) Departmental Peer Ties and Contact With Departmental Faculty (Females)



The next two first-order relationships involve the statistical interaction of student contact with departmental faculty and peer ties. These relationships are more difficult to interpret than the foregoing because the normative influences to which students are exposed through departmental social relationships are unknown. Figure 6, b, for instance, is virtually impossible to interpret without some knowledge of normative influences. Figure 7, on the other hand, is a bit easier. Table 17 showed that peer ties and faculty contact have opposite effects on women's creativity orientations--peer ties negative and faculty contact positive. As shown in Figure 7, departmental peer ties have no effect on creativity orientations for women reporting low rates of contact with departmental faculty. But, for women reporting high contact with departmental faculty, peer ties operate to considerably depress creativity orientations. This finding adds further evidence in support of the earlier speculation that peer expectations on women, particularly those placed on women by male peers, serve to inhibit women's orientations toward achievements that might place them in competitive positions with men. Faculty, on the other hand, are presumably more likely than peers to encourage creative endeavor, particularly in the area of written expression.

A different perspective of departmental effects on students' creativity orientations can be seen from Figure 8 which shows the statistical interaction of faculty and student liberal education norms. There is not as much difficulty in interpreting these relationships as the preceding ones because the departmental normative influences are rather clear-cut. Given the absence of interpersonal links with norm-senders here, it is only with the examination of second-order relationships later on that the joint influences of students and faculty can be more fully explored. While the joint effects of departmental faculty and student liberal education norms on creativity norms are in the same directions for men and women, Figure 8 suggests that men are more stongly influenced by departmental peer norms and women are more strongly influenced by departmental faculty norms. For men in departments with high student liberal education norms, there is virtually no effect of departmental faculty liberal education norms. For women, on the other hand, there is a positive effect of faculty liberal education norms regardless of departmental student liberal education norms. The joint influence of high departmental liberal education norms for women illustrates the very powerful effect on students' values when departmental student and faculty norms are "consistent and reinforcing."

The last set of first-order relationships is the most difficult to interpret because each involves the joint effects of a departmental norm and social relationships with the group that is <u>not</u> the source of the normative influence. Figure 9 contains the first of these, showing the joint effects of departmental faculty liberal education norms and peer ties for men on creativity orientations. If peer ties were replaced by faculty contact, Figure 9 would be an example of the expected magnification of normative influences when those norms are accompanied by close, personal relationships between students

Figure 7. Creativity by Contact With Departmental Faculty and Departmental Peer Ties (Females)

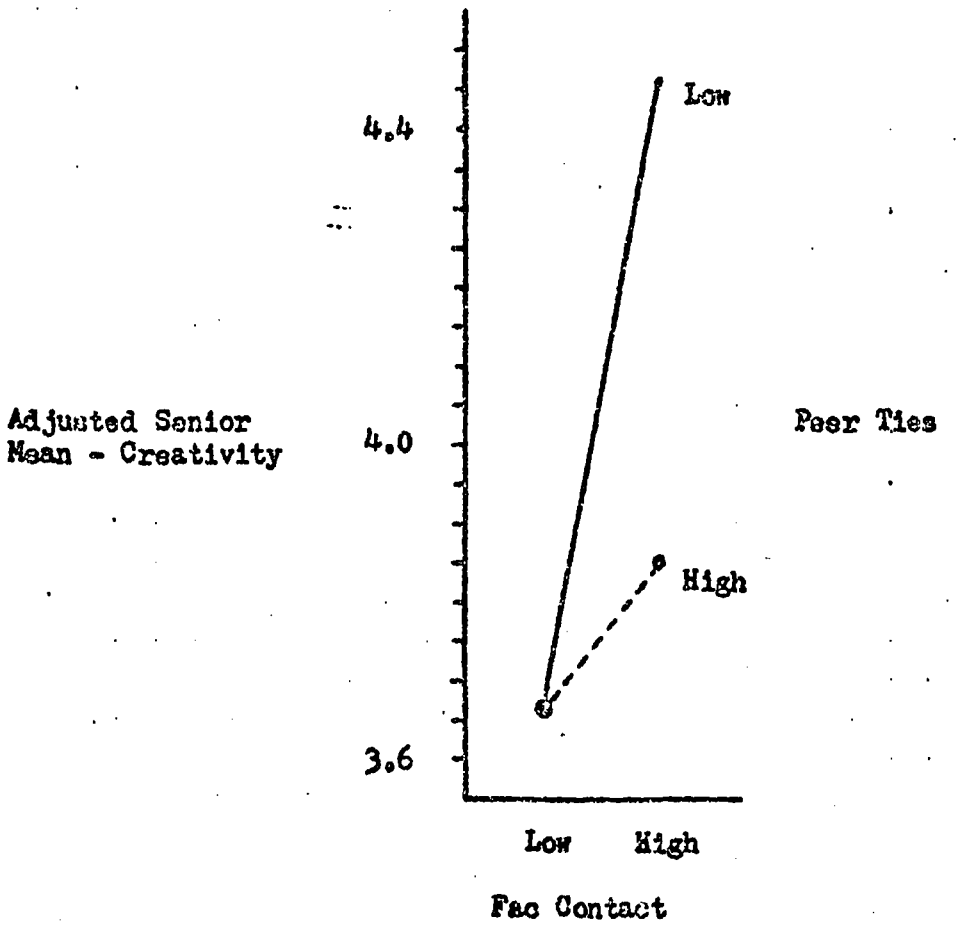


Figure 8. Creativity by Departmental Faculty and Student Liberal Education Norms

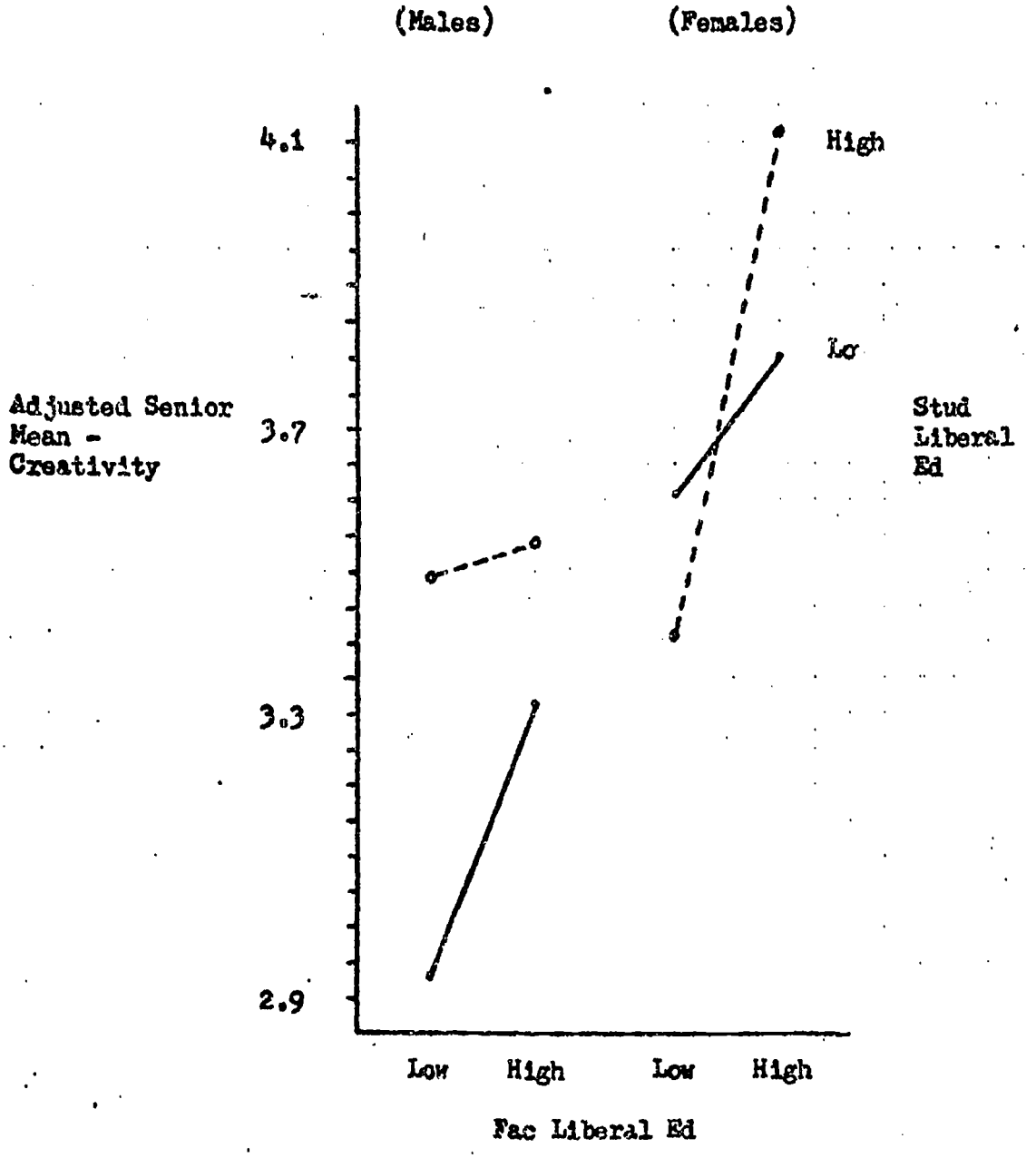
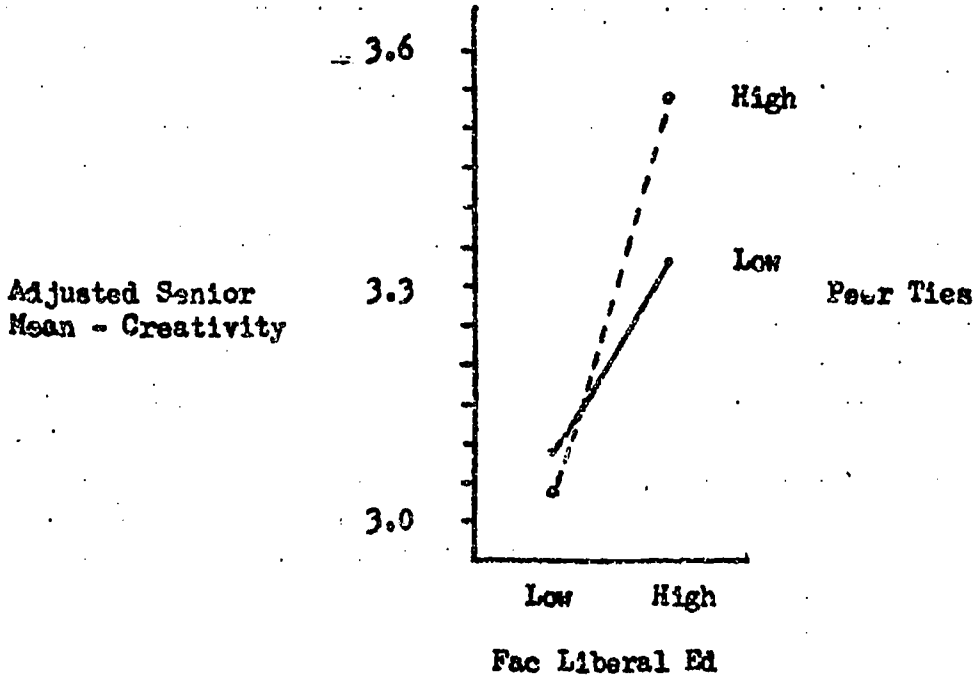


Figure 9. Creativity by Departmental Faculty Liberal Education Norms and Departmental Peer Ties (Males)



and norm senders. Since that is not the case, it is safe to say only that peer ties reinforce rather than countermand the positive influence of departmental faculty liberal education norms on men's creativity orientations.

The two first-order statistical interactions shown in Figure 10 are also hard to interpret. The general expectation is that liberal education norms, regardless of source, should have a negative influence on students' administrative leadership orientations. This relationship appears on both graphs, but only for men reporting high social relationships with the group other than the norm senders. Unfortunately, since the relationship is reversed for men reporting low social relationships with the non-normative group, the finding is both contradictory and inexplicable.

The last of these cross-cutting first-order relationships is shown in Figure 11. For women, there is a positive influence of faculty contact on eminence norms, regardless of departmental student vocational education norms. The relationships between variables in Figure 11 and Figure 3 which shows the joint influence of faculty vocational education norms and faculty contacts are reversed. Figure 11 shows that the generally positive influence of faculty contact on women's eminence orientations is mediated by peer norms. This suggests that the vocational education norms of students may have different dimensions than the vocational education norms of faculty. There is no apparent explanation for these puzzling results.

In summary, each of the questions posed at the beginning of this section of the study can be answered affirmatively. Conditional relationships are complex and often rather difficult to interpret. The following, therefore, are what appear to be the general trends in the data. The effects of departmental student and faculty norms are mediated by departmental social relationships. Men reporting close ties with departmental peers tend consistently to report higher career eminence orientations than men with limited departmental peer attachments, regardless of peer norms (Figure 2). Eminence orientations are influenced by peer norms only for men reporting few close ties with departmental peers. While these normative influences of students are in the expected directions, they apparently are not transmitted via social interaction. This suggests that departmental peer solidarity for men may center about concerns other than the adademic, notably general career-related orientations or social status concerns within the department. Men with limited departmental ties are likely to be peripheral to such peer status systems. These men are, it seems, more likely to be influenced by their perceptions of peers' general academic-intellectual orientations in classroom settings rather than by informal interpersonal exchanges.

For women, a different pattern of departmental effects appears since there are no significant joint effects of norms and peer ties. Faculty, rather than peers, are the more important source of influence for women's career eminence orientations (Figure 3). Majoring in

Figure 10. Administration by (a) Departmental Faculty Liberal Education Norms and Ties With Departmental Peers, and (b) Departmental Student Liberal Education Norms and Contact With Departmental Faculty (Males)

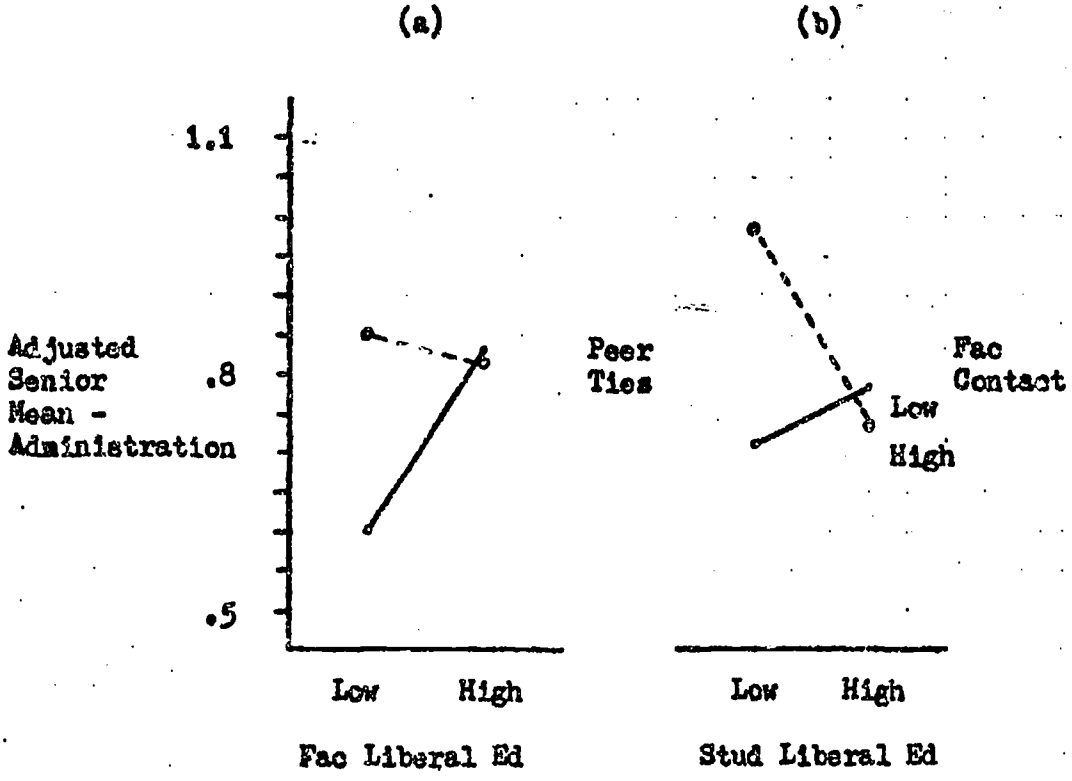
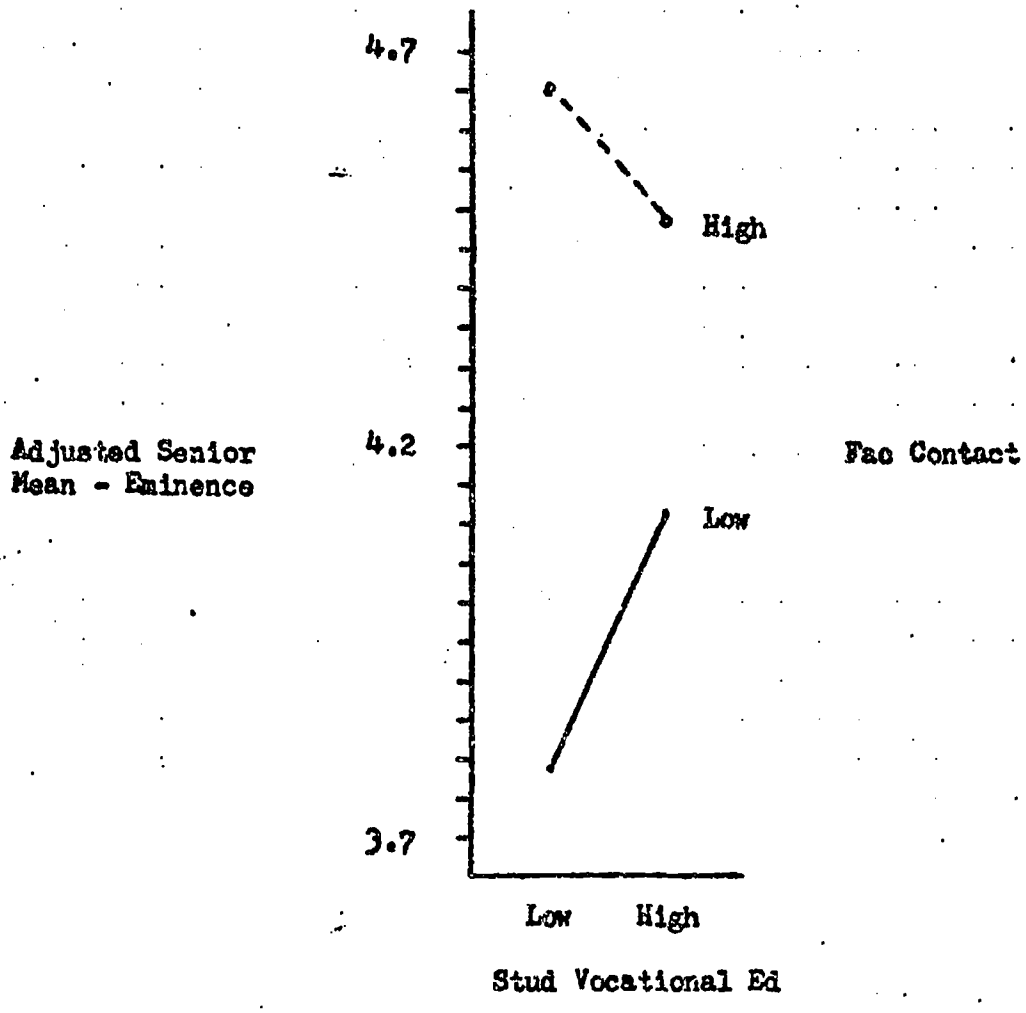


Figure 11. Career Eminence by Departmental Student Vocational Education Norms and Contact With Departmental Faculty (Females)



high faculty vocational norm departments tends to result in much higher eminence orientations for women who report close associations with faculty than for those who report limited faculty contact. To the extent that vocational norms refer to technical aspects of a discipline or field-related activities, it is not surprising that women's career eminence orientations would be influenced by such norms. The joint effects on women's eminence orientations of faculty vocational education norms and faculty contact are similar to the joint effects on men's eminence orientations of student liberal education norms and peer ties. Consequently, it is apparent that faculty and student norms are not necessarily analagous. A further indication of divergent influences of faculty and peers is the finding that departmental student vocational norms moderate the strong effects of faculty contact on women's eminence orientations (Figure 11).

For orientations toward helping others, the joint effects of both departmental faculty norms and faculty contact are in the expected directions for men, with attachments to faculty serving to enhance the influence of norms (Figure 4). For women, on the other hand, faculty liberal education norms have the expected effect only for those students reporting limited faculty contact (Figure 4). Women reporting close relationships with faculty have strong "people" orientations, regardless of faculty norms. It is somewhat surprising that peer influences on "people" orientations are not more important.

Departmental faculty vocational education norms and faculty contact jointly influence men's creativity orientations in the expected direction, with faculty contact enhancing the positive effects of low vocational norms (Figure 5). In addition, having close ties with departmental peers enhances the influence of faculty liberal education norms. For men, departmental faculty norms seem to exert greater influences on creativity orientations than student norms. Close social relationships with both faculty and peers tend to strengthen the impacts of faculty norms. There were no significant first-order influences on women's creativity orientations; second- and third-order interactions will be discussed later in this chapter.

Women's financial success orientations were strongly influenced by departmental vocational education norms and faculty contact, providing additional evidence of the transmission of norms via social relationships (Figure 6). In this case, departmental norms had no effect on financial success orientations for women with limited faculty contact. There were no significant first-order effects on men's financial success orientations, but a second-order statistical interaction will be examined in the following section of this chapter.

Both of the first-order influences of norms and social relationships on men's administrative leadership orientations involved norms and social ties with the group other than the norm-sending group (Figure 10). Neither case showed conditional relationships clear

enough for convincing interpretation. Unfortunately, these are the only statistical interactions that appeared in the data for administrative leadership orientations of either men or women. Unmeasured variables are probably influencing these relationships.

Departmental social relationships can also exert conditional influences on students' values, although the evidence is quite limited in comparison with the joint effects of norms and social relationships. The joint effects of peer ties and faculty contact on women's financial success orientations are inconsistent and virtually impossible to interpret (Figure 6). For women's creativity orientations, on the other hand, peer ties reduce the generally strong influence of faculty contact (Figure 7). Here, peer ties mediate the effects of faculty contact.

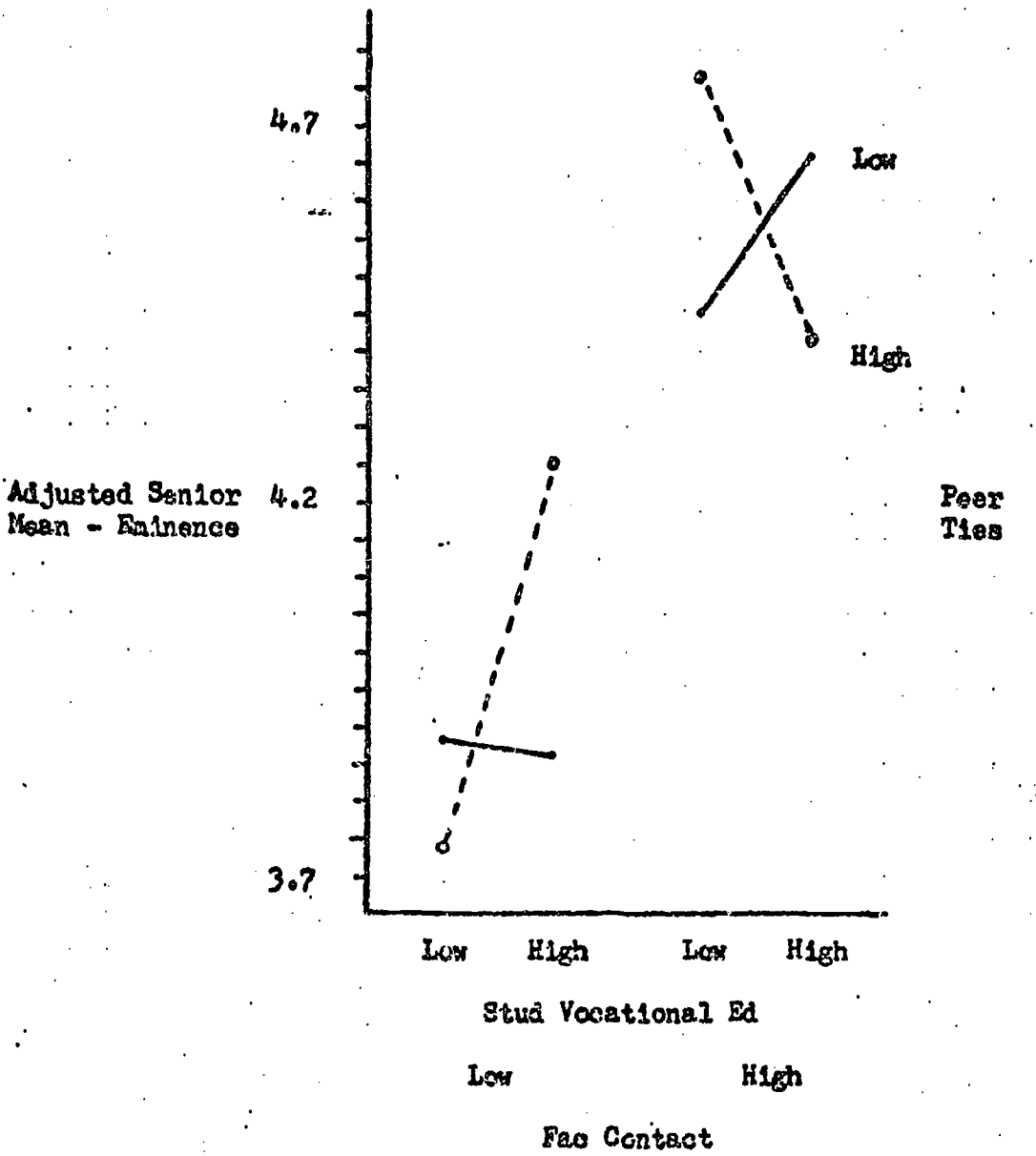
Finally, there are significant effects on creativity orientations of departmental faculty and student liberal education norms for both males and females (Figures 8, 9). In both instances, student norms magnify the effects of faculty norms. Faculty liberal education norms do, however, seem to have a greater influence on creativity orientations for women rather than men. Both of these findings suggest the expected positive relationship between liberal education norms and creativity orientations.

Second-order Interaction Effects

In this section of the analysis, it is finally possible to look at the joint effects of both faculty and student influences, linking norms and interpersonal mechanisms of socialization. The first three of these interaction effects show the mediating influence of contact with departmental faculty on the joint effects of departmental student norms and peer ties. Figure 12 shows the joint influence of departmental student vocational education norms, peer ties, and faculty contact on women's career eminence orientations. One thing that stands out from this graph is that women reporting high faculty contact have consistently higher career eminence orientations than women reporting low faculty contact, independent of departmental student norms and peer ties.

However, under the condition of high departmental student vocational education norms, the joint effect of departmental peer ties and contact with departmental faculty are in opposite directions. For women in high student vocational education norm departments who reported low contact with departmental faculty, those reporting high departmental peer ties had higher career eminence orientations than their counterparts reporting low peer ties. Conversely, among women in high student vocational education norm departments who reported high departmental faculty contact, those reporting high departmental peer ties were lower on career eminence orientations than others reporting low peer ties. In the former case, interpersonal ties with peers exert a positive influence on career eminence orientations while in the latter case, peer ties have a negative effect. This suggests, at

Figure 12. Career Eminence by Departmental Student Vocational Education Norms, Departmental Peer Ties, and Contact With Departmental Faculty (Females)



the very least, that the normative influences of peers do moderate those of faculty somewhat, but that faculty appear to exert stronger influences on women's career eminence orientations than students.

Figure 13 contains another example of the effects of faculty contact on women's values, this time with respect to creativity orientations. As was the case for career eminence orientations shown in Figure 12, women's creativity orientations tend to be positively influenced by contact with departmental faculty regardless of departmental student vocational education norms. Here, however, the mediating influence of departmental peer ties on faculty contact shows more clearly. For women reporting high rates of social interaction with departmental faculty and peers, there is virtually no effect of departmental student vocational education norms on creativity orientations. But, for women reporting high faculty contact and low peer ties, creativity orientations are higher for students in high rather than low student vocational norm departments. Since it was expected that vocational education norms would be negatively related to creativity orientations, this finding suggests that faculty influences are strongest in high student vocational education norm departments when peer ties are weakest. For women reporting low faculty contact, the foregoing effects on creativity orientation of departmental student vocational education norms and interpersonal mechanisms of socialization are reversed. Here, lack of attachment to either peers or faculty for women in high student vocational education norm departments results in the lowest creativity orientations. The effects of faculty on women's creativity orientations are definitely mediated by peer pressures.

Figure 14 shows the effects on women's financial success orientations of the statistical interaction among departmental student liberal education norms, departmental peer ties, and rates of departmental faculty contact. This diagram indicates opposite statistical interactions for each category of interpersonal interaction with departmental faculty. The expected negative relationship between liberal education norms and financial success orientations does appear for those women indicating low levels of departmental peer ties and faculty contact, though departmental student liberal education norms make virtually no difference for those women reporting high rates of interaction with departmental peers. For women reporting high rates of primary interaction with peers and faculty, departmental student liberal education norms do show a negative relationship with financial success orientation. Again, there is just a small difference in financial success orientation for women majoring in high liberal education norm departments who report different levels of departmental peer ties.

In short, interaction with faculty has opposite effects on the relationship between departmental peer ties and financial success orientation for women enrolled in departments with low student liberal education norms. This finding helps to explain the positive zero-order effect of faculty contact on women's finance orientations.

Figure 13. Creativity by Departmental Student Vocational Education Norms, Departmental Peer Ties, and Contact With Departmental Faculty (Females)

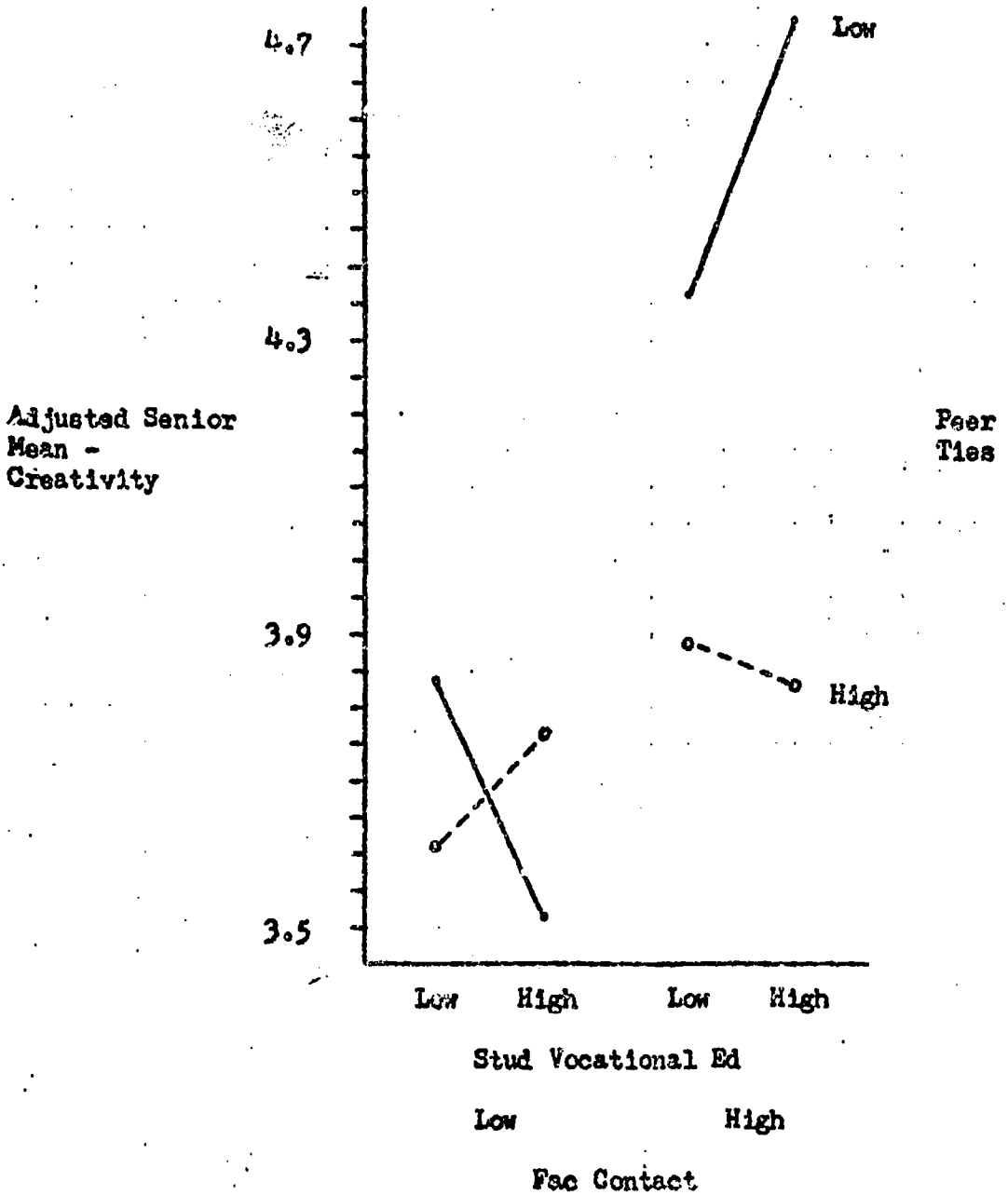
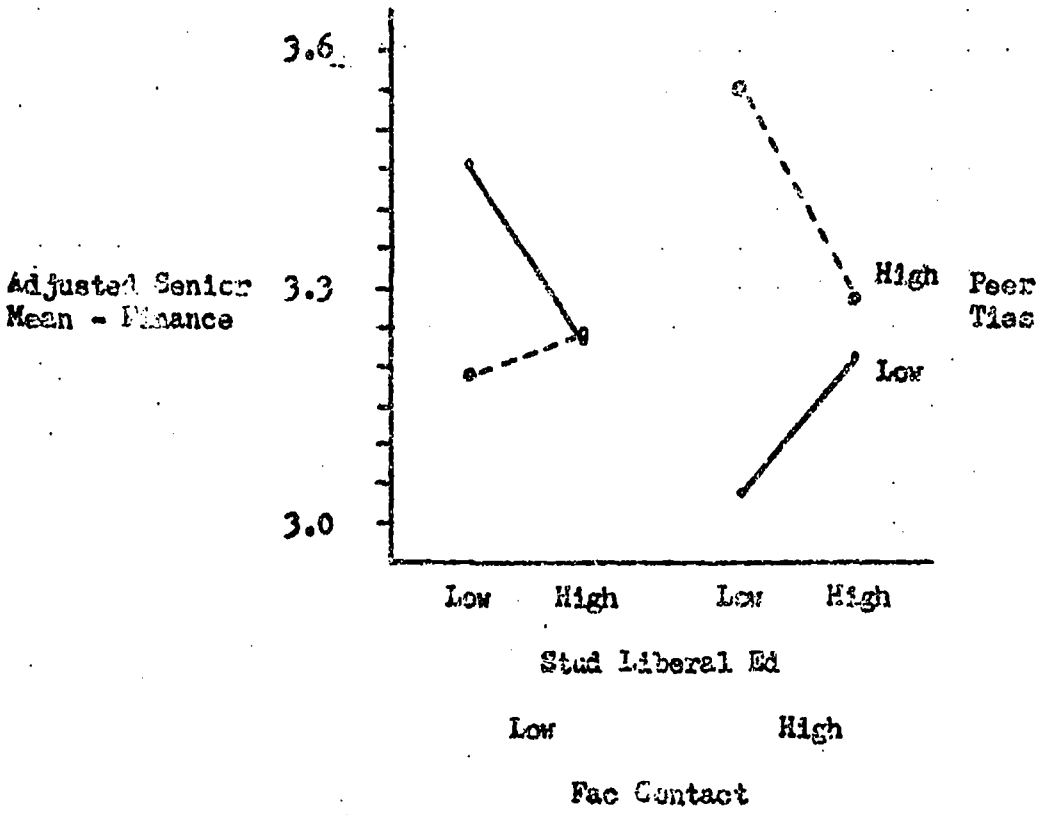


Figure 14. Finance by Departmental Student Liberal Education Norms, Departmental Peer Ties, and Contact With Departmental Faculty (Females)



The highest mean on finance appears for women reporting high departmental contact who are in departments with low student liberal education norms and report high peer solidarity. Faculty contact thus appears to reinforce the influences of the departmental peer environment.

Faculty liberal education norms constitute the second control variable in Figure 15. The joint effects of departmental student liberal education norms on men's financial success orientations are in the expected directions for males in departments with low faculty liberal education norms. But, these relationships are inexplicably reversed for men in departments with high faculty liberal education norms. There are clearly no independent influences here. Finally, there was a second-order statistical interaction among faculty liberal education norms, faculty contact, and departmental student-peer ties for men on helping others. This is shown in Figure 16. For male students reporting low peer ties, there is a marked reversal in the joint effects of departmental faculty contact and liberal education norms. Students reporting high interaction with faculty in departments characterized by low faculty liberal education norms are lower on helping others than their low faculty interaction counterparts. But, this is reversed for students in departments with high faculty liberal education norms. Both parts of the table show a strong, positive relationship among faculty norms, student/faculty interaction, and student orientations toward helping others. This finding is tempered only by low interpersonal ties with peers for students in departments with low faculty liberal education norms. Quite possibly the influences transmitted to students via interaction with faculty in low faculty liberal education norm departments have a more instrumental nature than is the case for students in high faculty liberal education norm departments. In short, there is the expected interaction between faculty liberal education norms and faculty contact for men reporting low departmental peer ties. For men reporting high peer ties, faculty contact does not have as important an effect on orientations toward helping others.

Of the five second-order statistical interactions discussed in this section of the chapter, only three show very consistent patterns of joint impact by both departmental faculty and peers. For women's orientations toward career eminence, frequent, close contact with departmental faculty is the most influential variable, despite satistical interactions between student vocational education norms and peer ties within categories of faculty contact (Figure 12). Unfortunately, adding the third variable, peer ties, does little to clarify the first-order interaction betweeen student vocational education norms and faculty contact discussed in the previous section of this chapter.

Another example of the pre-eminence of faculty over student influences appears for men's orientations toward helping others (Figure 16). In this instance, the joint impacts of faculty liberal education norms and faculty contact are similar, regardless of peer ties. The failure of departmental peer solidarity to mediate

Figure 15. Finance by Departmental Student Liberal Education Norms, Departmental Peer Ties, and Departmental Faculty Liberal Education Norms (Males)

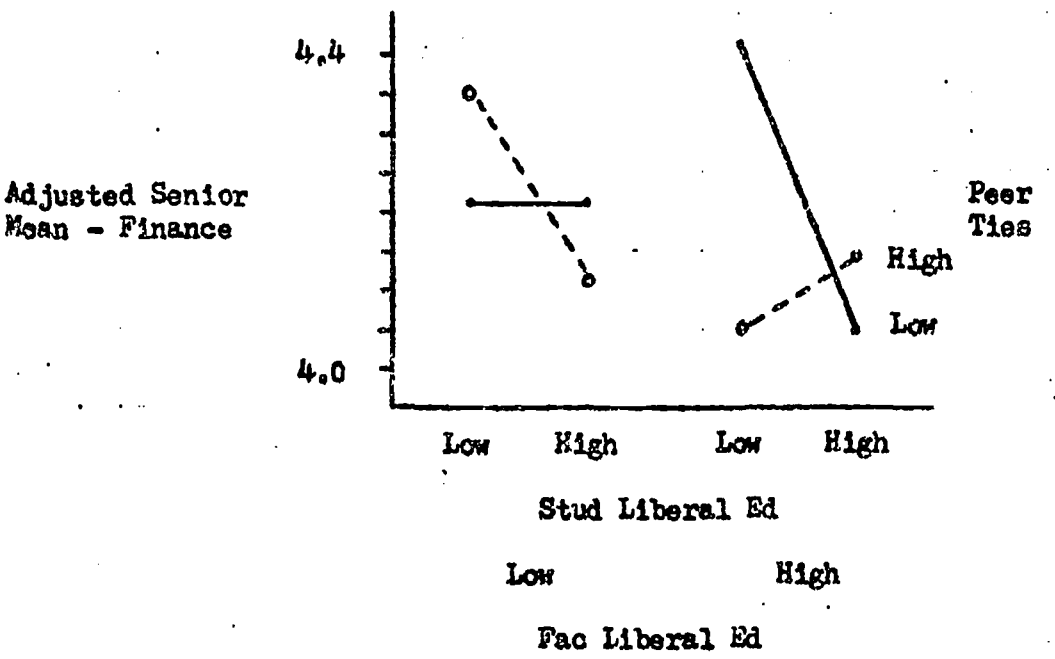
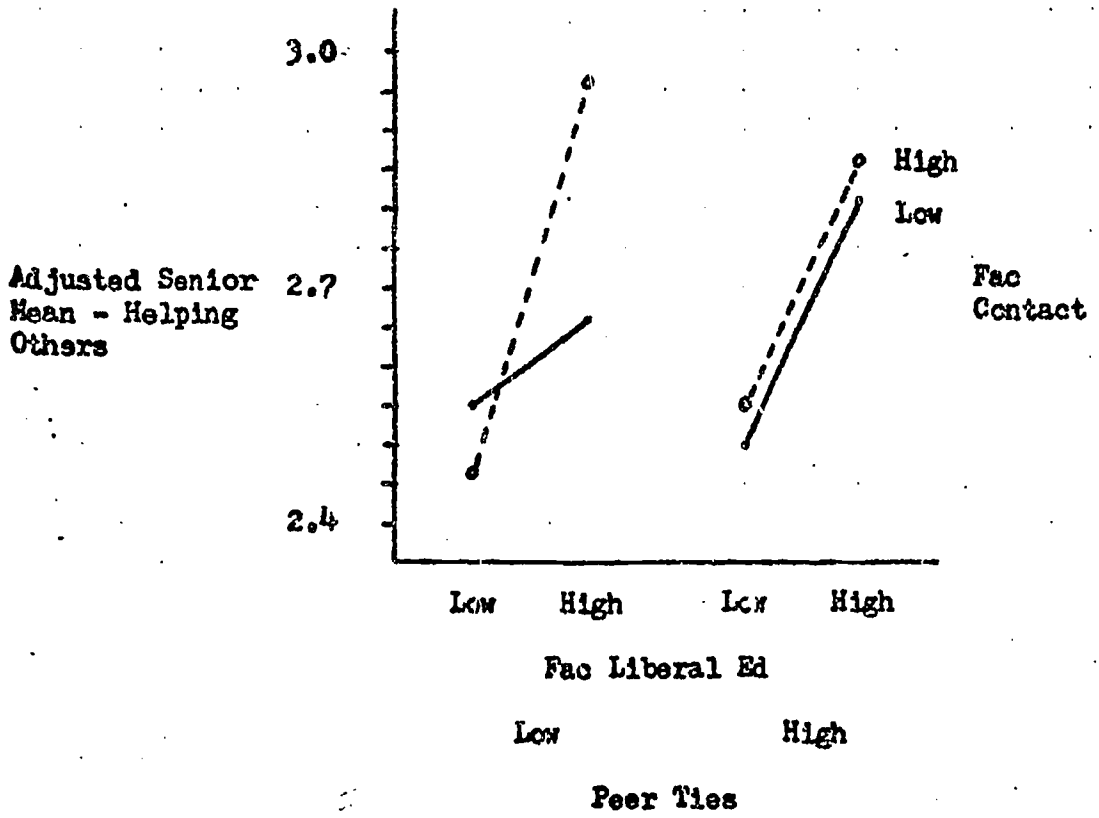


Figure 16. Helping Others by Departmental Faculty Liberal Education Norms, Contact With Departmental Faculty, and Departmental Peer Ties (Males)



significantly the influence of the departmental normative environment on men's "people" orientations is a rather surprising finding.

In the other relatively clear-cut relationship, the strong influence of faculty contact on women's creativity orientations is reduced considerably by departmental peer relationships, regardless of departmental student vocational norms (Figure 13).

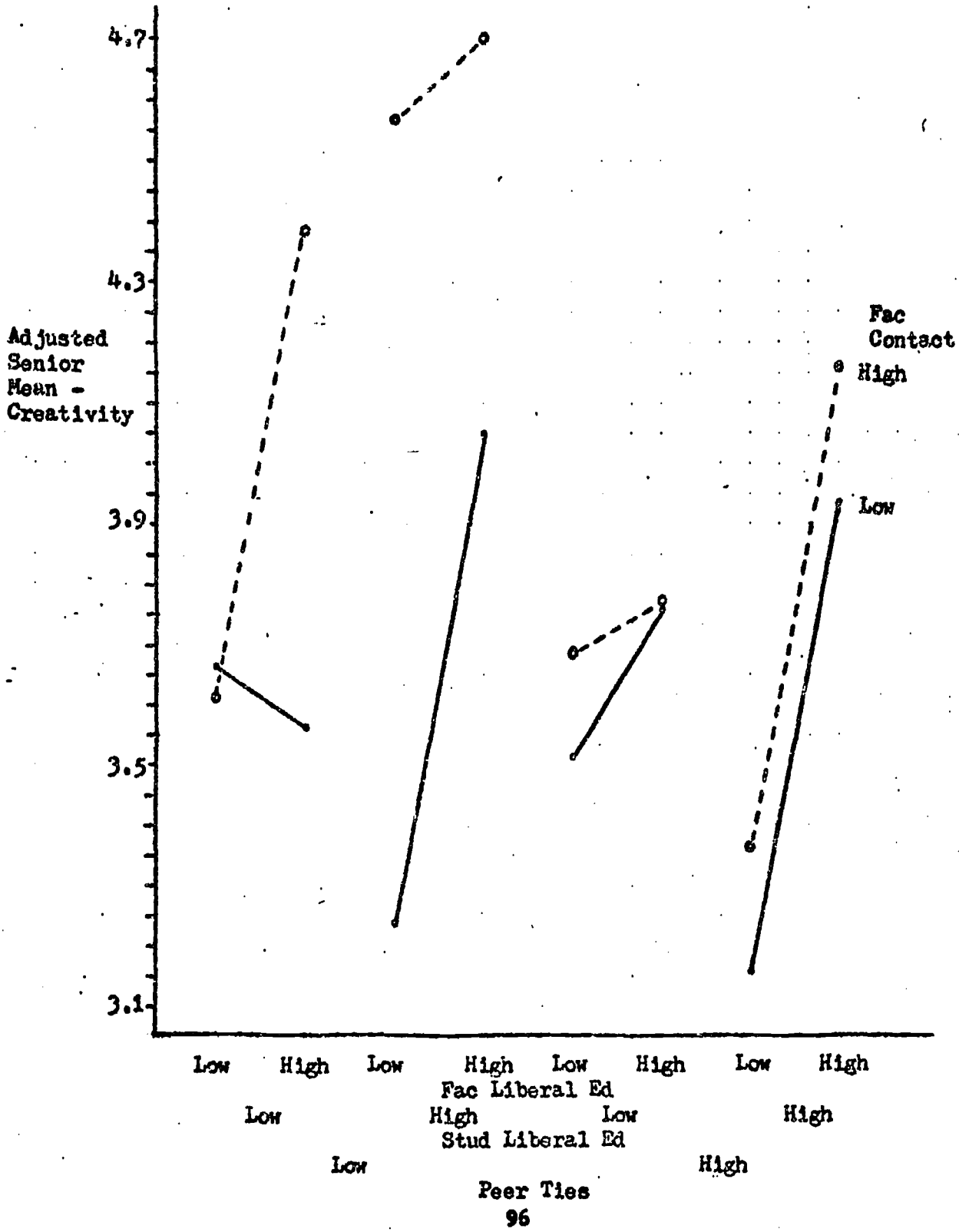
The remaining second-order interactions involve the impacts on both sexes' financial success orientations of departmental liberal education norms and social relationships. In both instances, the patterns of influence are inexplicable. Clearly, this particular set of variables is inadequate for explaining changes during college in students' financial success orientations.

A Third-Order Interaction Effect

To give one final illustration of the complexity of the findings reported in this study, I have included the four-way statistical interaction between departmental norms and social relationships for women's creativity orientations shown in Figure 17. According to preliminary expectations, the highest creativity orientations should appear for women whose scores were in the "high" category on all four independent variables. However, the highest creativity orientations appear for women in the "high" category on all variables except peer ties. In fact, the joint influences of faculty norms and contact on women's creativity orientations are strongest for women who have limited ties with departmental peers. Faculty effects are also moderated considerably for women with close ties to departmental peers having "low" liberal arts orientations. This further illustrates the interplay of departmental faculty and peer impacts on the values of undergraduates.

In the following chapter, I shall review and discuss the main findings of the study and speculate about their implications for educational policy.

Figure 17. Creativity by Departmental Faculty and Student Liberal Education Norms, Departmental Peer Ties, and Contact With Departmental Faculty (Females)



Chapter Four

Footnotes

1. Frederic M. Lord, "Elementary Models for Measuring Change," Problems in Measuring Change, ed. Chester W. Harris (Madison: University of Wisconsin Press, 1967), p. 37.

2. Ibid.

3. R. Darrell Bock and Ernest A. Haggard, "The Use of Multivariate Analysis of Variance in Behavioral Research," Handbook of Measurement and Assessment in the Behavioral Sciences, ed. Dean K. Whitla (Reading, Mass.: Addison-Wesley, 1968), p. 129.

4. Robert M. Hauser, "Context and Consex: A Cautionary Tale," American Journal of Sociology, LXXV (January, 1970), p. 660.

5. Ibid., p. 662.

6. James Fennessey, "The General Linear Model: A New Perspective on Some Familiar Topics," American Journal of Sociology, LXXIV (July, 1968), pp. 1-27; Karl Schuessler, "Covariance Analysis in Sociological Research," Sociological Methodology - 1969, ed. Edgar F. Borgatta and George W. Bohrnstedt (San Francisco: Jossey-Bass), pp. 219-244; and Hubert M. Blalock, Jr., Social Statistics, Second Edition (New York: McGraw-Hill, 1972), pp. 473-506.

7. B. J. Winer, Statistical Principles in Experimental Design, Second Edition (New York: McGraw-Hill, 1971), pp. 781-794.

8. For a description of this program, see Douglas Anderson and Michael Frisch, UMST Computer Programs Manual (University Computer Center, University of Minnesota, Minneapolis, 1971).

9. For a critique of large-scale surveys for educational research, including a discussion of the methodological problems involved in backward selection of cases to get a sample having longitudinal measures, see Robert M. Hauser, "Educational Stratification in the United States," Sociological Inquiry, XL (Spring, 1970), pp. 119-20.

Chapter Five: Some Implications for Organizational Socialization and Educational Policy

This, the concluding chapter of the study, contains a summary of the major findings, a discussion of their implications, and some speculations about directions that might be taken in subsequent research. Since the departmental student value profiles in this study are similar to those in other research, I focus on the socializing effects of departmental normative climates without reference to the academic discipline represented.

Although the findings in the preceding chapters are not always consistent or in the expected directions, the results do provide evidence of socialization processes in academic departments which involve the transmission of normative influences to students via social relationships with faculty and peers. Of the five occupational values studied, three are more likely than the others to be affected by departmental influences - literary and artistic creativity, career eminence, and helping others.

There are marked sex differences in the patterns of departmental impact on each of these three value orientations. For women, orientations toward helping others are affected positively by frequent, primary contact with departmental faculty. This influence is enhanced for women in departments with high faculty liberal education norms. For men, on the other hand, departmental student and faculty norms appear to be the more influential variables, independent of departmental social relationships.

Similar patterns of influence by sex appear for orientations toward literary and artistic creativity. Women seem to be affected more by primary social relationships with departmental faculty than by faculty or student norms, though the positive effects of faculty contact are enhanced by departmental liberal education norms. There is some indication that faculty effects on women's creativity orientations are moderated by departmental peer ties.

Male students' creativity orientations are more likely to be influenced by departmental faculty norms for undergraduate education than by departmental social relationships. While effects of faculty norms are increased somewhat by student/faculty contact, faculty norms are clearly the more influential variable for men.

Despite some persisting questions about whether career eminence orientations are more likely to be influenced positively by departmental vocational or liberal education norms, there is a strong, positive effect of contact with departmental faculty on women's eminence orientations. As was the case for creativity, there is a tendency for peer ties to moderate the effects of faculty contact. For men, on the other hand, departmental student liberal and vocational education norms are quite influential for students reporting low, but not high peer ties. Men reporting high, rather than low peer ties tend to have higher career eminence orientations, independent of their departmental peers' educational norms. This relationship is probably due, in part, to the nature of the items in the eminence scale. In particular, eminence includes an item about the desirability of gaining recognition from colleagues in a special field. This particular goal is thus likely to be more salient for students reporting high departmental peer ties.

These findings have important implications for students in the selection of a major department, for the structuring of departments, and more generally, for the activities of people-changing organizations. Perhaps most noteworthy is the set of findings showing women's occupational value orientations to be very strongly influenced by primary social relationships with departmental faculty. To the extent that creativity and eminence orientations represent dispositions toward achievement in career-related endeavor, the influences of primary social relationships with faculty can be interpreted as contributing strongly to the development of occupationally-salient orientations in college women. While there are no comparisons made of women in coeducational and women's colleges, this finding suggests that one advantage of the greater opportunities for primary social relationships with faculty in women's colleges is the enhancement of women's career orientations. Converting women's colleges to coeducational institutions may, if accompanied by a decrease in opportunities for women to establish close social relationships with faculty, be detrimental for female students.

Men's values, on the other hand, are influenced more strongly by departmental norms than by departmental social relationships, though departmental peer relationships do influence men's career orientations. This presents an interesting contrast with women. Men, it seems, are more affected by the normative structure of a department while women are more affected by social relationships with faculty, the dominant group in the department's authority structure. Spady draws similar conclusions from his analysis of factors influencing dropout among students at the University of Chicago.[1] These findings suggest that women in organizational environments require personal feedback from superiors to ascertain the extent to which they are satisfying organizational expectations. Men, on the other hand, appear to be more able to perceive and fulfill organizational expectations on the basis of colleagues' and superordinates' orientations without involvement in close, personal relationships. At the very least, this suggests that organizations, and particularly members in supervisory positions, should be prepared to deal with the different styles of adaptation to organizational expectations exhibited by men and women.

Probably the most striking results are those indicating an apparent pre-eminence of faculty socializing influences over those exerted by peers. Previous research on this issue suggests that students' intellectual and career orientations are more likely to be influenced by faculty than by peers, while social orientations are more likely to be influenced by peers than by faculty.[2] For the present research, however, faculty are more influential than peers for orientations toward helping others as well as creativity and career orientations. This is even more remarkable because the method used for analyzing the effects of faculty and peer interaction resulted in an overestimation of peer influences and an underestimation of faculty influences! As students approach the end of their undergraduate education, they appear to look more toward faculty than peers as potential role models and/or as sources of authoritative information about prospective roles. The evidence presented here indicates the presence of a strongly institutionalized legitimacy of student deference to faculty expectations and expertise.

Departmental effects are underestimated for a second reason - only high-enrollment departments are included in the analysis. Presumably, patterns of influence would be much less consistent in departments with large numbers of undergraduate majors than in smaller, more homogeneous departments. Yet the findings provide convincing evidence that departments exert significant influences on non-intellective orientations of students.

This study is also significant because it provides evidence of systematically occurring, but largely unintended, consequences of departmental socialization. Students' occupational values are influenced by norms based on departmental members'aggregated conceptions of the most desirable general goals for undergraduate education (liberal or moral vs. vocational or technical), rather than norms referring specifically to each of the five values considered. General orientations toward academic/intellectual tasks contribute strongly to the creation of potent departmental climates.

Finally, the present research suggests that departmental impacts are not confined to particularly discipline-oriented departments in highly competitive colleges and universities. The findings reported here cut across subject matter and institution. Departments can be salient settings for student socialization, even in the absence of uniformly high levels of student commitment to the academic discipline represented by the faculty.

The recognition that normative climates and primary social relationships have impacts on students' values might lead some departments to redesign activities in ways that increase opportunities for student/faculty interaction. The findings suggest, however, that more is required than simply restructuring instructional activities to provide more opportunities for discussion between students and faculty. Frequency of contact is important, but so is the scope of content and sentiment involved in the contact. Interaction in offices and classrooms inevitably has overtones of the impersonality of transactions concerning

grades, asignments, and course requirements. Other, less formal, settings are probably more conducive to the establishment of primary relationships.

Organizational factors that facilitate social interaction such as student/faculty ratio and class size are not considered here, but are certainly worthy of future investigation.

Research is always limited by the selection of variables and the nature of the evidence used to test the relationships posited among those variables. In the present study, for instance, sociometric data would have been desirable. This would have enabled the direct, rather than inferred, linking of specific norm senders with socialization outcomes. Perhaps other studies might build on this one by using samples where sociometric data could be obtained. Synthesizing results from several such small studies could help to put the propositions and interpretations set forth here to more rigorous test. Furthermore, rather generalized educational norms do not constitute the only normative pressures exerted by departments. These findings suggest that financial success and administrative leadership orientations, in particular, are probably subject to greater influence by variables different from those included in the present research. College settings other than academic departments are also potentially influential and might be investigated more fully in future research.

In conclusion, the findings indicate that academic departments do, indeed, have impacts on students' values through the convergence of student and faculty influences. Hopefully, this study will provide a point of departure both for future research and for efforts to restructure college environments in ways that maximize opportunities for the formation of mutually beneficial social relationships among students and faculty.

Chapter Five

Footnotes

1. William G. Spady, "Dropouts from Higher Education: Toward an Empirical Model," Interchange, II (no. 3, 1971), 38-62.

2. Everett K. Wilson, "The Entering Student: Attributes and Agents of Change," in College Peer Groups, ed. by Theodore M. Newcomb and Everett K. Wilson (Chicago: Aldine, 1966), pp. 87-93.

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Appendix I: 1966 STUDENT INFORMATION FORM (A.C.E.)

454945

YOUR NAME(please print)_____
First Middle or Maiden Last

HOME STREET ADDRESS_____

CITY STATE ZIP CODE (if known)

Note: The information in this report is being collected through the American Council on Education as part of a study of this year's entering class. Please complete all items. Your name and address has been requested in order to facilitate mail follow-up studies. Your responses will be used only in group summaries for research purposes, and will not be identified with you individually.

Social Security Number (if known)

Date of Birth _____ Month _____ Day _____ Year

If you recently took any of the national achievement tests and happen to remember your score, fill in the appropriate information:

	Score		Score
SAT Verbal		ACT Composite	
SAT Math		NMSC Selection Score	

DIRECTIONS: Your responses will be read by an automatic scanning device. Your careful observance of these few simple rules will be most appreciated.

Use only black lead pencil (No. 2½ or softer).
Make heavy black marks that fill the circle.
Erase cleanly any answer you wish to change.
Make no stray markings of any kind.

	Yes	No
Example: Will marks made with ball pen or fountain pen be properly read?	○	●

1. Your Sex: Male ○ Female ○

2. From what kind of secondary school did you graduate? (Mark one)
- Public ○
- Private (denominational) ○
- Private (nondenominational) ○
- Other ○

3. What was your average grade in secondary school? (Mark one)

A or A+ ○	D- ○
A- ○	C+ ○
B+ ○	C ○
B ○	D ○

4. What is the highest academic degree that you intend to obtain? (Mark one)
- None ○
- Associate (or equivalent) ○
- Bachelor's degree (B.A., B.S., etc.) ○
- Master's degree (M.A., M.S., etc.) ○
- Ph.D. or Ed.D. ○
- M.D., D.D.S., or D.V.M. ○
- LL.B. or J.D ○
- B.D. ○
- Other ○

5. The following questions deal with accomplishments that might possibly apply to your high school years. Do not be discouraged by this list; it covers many areas of interest and few students will be able to say "yes" to many items. (Mark all that apply)
- Was elected president of one or more student organizations (recognized by the school) ○
- Received a high rating (Good, Excellent) in a state or regional music contest ○
- Participated in a state or regional speech or debate contest ○
- Had a major part in a play ○
- Won a varsity letter (sports) ○
- Won a prize or award in an art competition ○
- Edited the school paper, yearbook, or literary magazine ○
- Had poems, stories, essays, or articles published ○
- Participated in a National Science Foundation summer program ○
- Placed (first, second, or third) in a state or regional science contest ○
- Was a member of a scholastic honor society ○
- Won a Certificate of Merit or Letter of Commendation in the National Merit Program ○

6. Do you have any concern about your ability to finance your college education? (Mark one)

- None (I am confident that I will have sufficient funds) ○
- Some concern (but I will probably have enough funds) ○
- Major concern (not sure I will be able to complete college) ○

7. Through what source do you intend to finance the first year of your undergraduate education? (Mark one for each item)

	Major Source	Minor Source	Not a Source
Employment during college	○	○	○
Employment during summer	○	○	○
Scholarship	○	○	○
G. I. Bill	○	○	○
Personal savings	○	○	○
Tuition deferment loan from college	○	○	○
Parental aid	○	○	○
Federal government	○	○	○
Commercial loan	○	○	○

8. What is your racial background? (Mark one)

- Caucasian ○
- Negro ○
- American Indian ○
- Oriental ○
- Other ○

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

	Father	Mother
Grammar school or less	○	○
Some high school	○	○
High school graduate	○	○
Some college	○	○
College degree	○	○
Postgraduate degree	○	○

10. What is your best estimate of the total income last year of your parental family (not your own family if you are married)? Consider annual income from all sources before taxes.

- Less than $4,000 ○
- $4,000–$5,999 ○
- $6,000–$7,999 ○
- $8,000–$9,999 ○
- $10,000–$14,999 ○
- $15,000–$19,999 ○
- $20,000–$24,999 ○
- $25,000–$29,999 ○
- $30,000 or more ○

11. Mark one in each column below:

	Religion in Which You Were Reared	Your Present Religious Preference
Protestant	○	○
Roman Catholic	○	○
Jewish	○	○
Other	○	○
None	○	○

12. In deciding where to go to college, through what source did this college first come to your attention? (Mark one)

- Relative ○
- Friend ○
- High school counselor or teacher ○
- Professional counseling or college placement service ○
- This college or a representative from this college ○
- Other source ○
- I cannot recall ○

13. To what extent do you think each of the following describes the psychological climate or atmosphere at this college? (Mark one answer for each item)

	Very Descriptive	In Between	Not at all Descriptive
Intellectual	○	○	○
Snobbish	○	○	○
Social	○	○	○
Victorian	○	○	○
Practical-minded	○	○	○
Warm	○	○	○
Realistic	○	○	○
Liberal	○	○	○

14. Answer each of the following as you think it applies to this college:

	Yes	No
The students are under a great deal of pressure to get high grades	○	○
The student body is apathetic and has little "school spirit"	○	○
Most of the students are of a very high calibre academically	○	○
There is a keen competition among most of the students for high grades	○	○
Freshmen have to take orders from upperclassmen for a period of time	○	○
There isn't much to do except to go to class and study	○	○
I felt "lost" when I first came to the campus	○	○
Being in this college builds poise and maturity	○	○
Athletics are overemphasized	○	○
The classes are usually run in a very informal manner	○	○
Most students are more like "numbers in a book"	○	○

15. Are you:

- An only child (Mark and skip to number 20) ○
- The first-born (but not an only child) ○
- The second-born ○
- The third-born ○
- Fourth (or later) born ○

16. How many brothers and sisters now living do you have? (Mark one)

- None (Mark and skip to number 20) ○

1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 or more ○

17. Mark one circle for each of your brothers and sisters between the ages of 13 and 23

	13	14	15	16	17	18	19	20	21	22	23
Brothers	○	○	○	○	○	○	○	○	○	○	○
Sisters	○	○	○	○	○	○	○	○	○	○	○

18. Are you a twin? (Mark one)

- No, (Mark and skip to number 20) ○
- Yes, identical ○
- Yes, fraternal same sex ○
- Yes, fraternal opposite sex ○

19. Is your twin attending college?

- No ○
- Yes, the same college ○
- Yes, a different college ○

20. Mark one in each column:

	Your current home state	Your birthplace	Your father's birthplace	Your mother's birthplace
Alabama	○	○	○	○
Alaska	○	○	○	○
Arizona	○	○	○	○
Arkansas	○	○	○	○
California	○	○	○	○
Colorado	○	○	○	○
Connecticut	○	○	○	○
Delaware	○	○	○	○
D. C.	○	○	○	○
Florida	○	○	○	○
Georgia	○	○	○	○
Hawaii	○	○	○	○
Idaho	○	○	○	○
Illinois	○	○	○	○
Indiana	○	○	○	○
Iowa	○	○	○	○
Kansas	○	○	○	○
Kentucky	○	○	○	○
Louisiana	○	○	○	○
Maine	○	○	○	○
Maryland	○	○	○	○
Massachusetts	○	○	○	○
Michigan	○	○	○	○
Minnesota	○	○	○	○
Mississippi	○	○	○	○
Missouri	○	○	○	○
Montana	○	○	○	○
Nebraska	○	○	○	○
Nevada	○	○	○	○
New Hampshire	○	○	○	○
New Jersey	○	○	○	○
New Mexico	○	○	○	○
New York	○	○	○	○
North Carolina	○	○	○	○
North Dakota	○	○	○	○
Ohio	○	○	○	○
Oklahoma	○	○	○	○
Oregon	○	○	○	○
Pennsylvania	○	○	○	○
Rhode Island	○	○	○	○
South Carolina	○	○	○	○
South Dakota	○	○	○	○
Tennessee	○	○	○	○
Texas	○	○	○	○
Utah	○	○	○	○
Vermont	○	○	○	○
Virginia	○	○	○	○
Washington	○	○	○	○
West Virginia	○	○	○	○
Wisconsin	○	○	○	○
Wyoming	○	○	○	○
Latin America	○	○	○	○
Europe	○	○	○	○
.....	○	○	○	○
.....	○	○	○	○
Other	○	○	○	○

21. Below is a list of 66 different undergraduate major fields grouped into general categories.
Mark only three of the 66 fields as follows:

① First choice (your probable major field of study).
② Second choice.
Ⓛ The field of study which is least appealing to you.

Arts and Humanities

Architecture	①	②	Ⓛ
English (literature)	①	②	Ⓛ
Fine arts	①	②	Ⓛ
History	①	②	Ⓛ
Journalism (writing)	①	②	Ⓛ
Language (modern)	①	②	Ⓛ
Language (other)	①	②	Ⓛ
Music	①	②	Ⓛ
Philosophy	①	②	Ⓛ
Speech and drama	①	②	Ⓛ
Theology	①	②	Ⓛ
Other	①	②	Ⓛ

Biological Science

Biology (general)	①	②	Ⓛ
Biochemistry	①	②	Ⓛ
Biophysics	①	②	Ⓛ
Botany	①	②	Ⓛ
Zoology	①	②	Ⓛ
Other	①	②	Ⓛ

Business

Accounting	①	②	Ⓛ
Business admin.	①	②	Ⓛ
Electronic data processing	①	②	Ⓛ
Secretarial studies	①	②	Ⓛ
Other	①	②	Ⓛ

Engineering

Aeronautical	①	②	Ⓛ
Civil	①	②	Ⓛ
Chemical	①	②	Ⓛ
Electrical	①	②	Ⓛ
Industrial	①	②	Ⓛ
Mechanical	①	②	Ⓛ
Other	①	②	Ⓛ

Physical Science

Chemistry	①	②	Ⓛ
Earth science	①	②	Ⓛ
Mathematics	①	②	Ⓛ
Physics	①	②	Ⓛ
Statistics	①	②	Ⓛ
Other	①	②	Ⓛ

Professional

Health Technology (medical, dental, laboratory)	①	②	Ⓛ
Nursing	①	②	Ⓛ
Pharmacy	①	②	Ⓛ
Predentistry	①	②	Ⓛ
Prelaw	①	②	Ⓛ
Premedical	①	②	Ⓛ
Preveterinary	①	②	Ⓛ
Therapy (occupat., physical, speech)	①	②	Ⓛ
Other	①	②	Ⓛ

Social Science

Anthropology	①	②	Ⓛ
Economics	①	②	Ⓛ
Education	①	②	Ⓛ
History	①	②	Ⓛ
Political science (government, int. relations)	①	②	Ⓛ
Psychology	①	②	Ⓛ
Social work	①	②	Ⓛ
Sociology	①	②	Ⓛ
Other	①	②	Ⓛ

Other Fields

Agriculture	①	②	Ⓛ
Communications (radio, T. V., etc.)	①	②	Ⓛ
Electronics (technology)	①	②	Ⓛ
Forestry	①	②	Ⓛ
Home economics	①	②	Ⓛ
Industrial arts	①	②	Ⓛ
Library science	①	②	Ⓛ
Military science	①	②	Ⓛ
Physical education and recreation	①	②	Ⓛ
Other (technical)	①	②	Ⓛ
Other (nontechnical)	①	②	Ⓛ
Undecided	①	②	Ⓛ

Please be sure that only three circles have been marked in the above list.

22. Probable Career Occupation

Note: Make only three responses, one in each column
① First Choice
② Second Choice
Ⓛ Least Appealing

Accountant or actuary	①	②	Ⓛ
Actor or entertainer	①	②	Ⓛ
Architect	①	②	Ⓛ
Artist	①	②	Ⓛ
Business (clerical)	①	②	Ⓛ
Business executive (management, administrator)	①	②	Ⓛ
Business owner or proprietor	①	②	Ⓛ
Business salesman or buyer	①	②	Ⓛ
Clergyman (minister, priest)	①	②	Ⓛ
Clergy (other religious)	①	②	Ⓛ
Clinical psychologist	①	②	Ⓛ
College teacher	①	②	Ⓛ
Computer programmer	①	②	Ⓛ
Conservationist or forester	①	②	Ⓛ
Dentist (including orthodontist)	①	②	Ⓛ
Dietitian or home economist	①	②	Ⓛ
Engineer	①	②	Ⓛ
Farmer or rancher	①	②	Ⓛ
Foreign service worker (including diplomat)	①	②	Ⓛ
Housewife	①	②	Ⓛ
Interior decorator (including designer)	①	②	Ⓛ
Interpretor (translator)	①	②	Ⓛ
Lab technician or hygienist	①	②	Ⓛ
Law enforcement officer	①	②	Ⓛ
Lawyer (attorney)	①	②	Ⓛ
Military service (career)	①	②	Ⓛ
Musician (performer, composer)	①	②	Ⓛ
Nurse	①	②	Ⓛ
Optometrist	①	②	Ⓛ
Pharmacist	①	②	Ⓛ
Physician	①	②	Ⓛ
School counselor	①	②	Ⓛ
School principal or superintendant	①	②	Ⓛ
Scientific researcher	①	②	Ⓛ
Social worker	①	②	Ⓛ
Statistician	①	②	Ⓛ
Therapist (physical, occupational, speech)	①	②	Ⓛ
Teacher (elementary)	①	②	Ⓛ
Teacher (secondary)	①	②	Ⓛ
Veterinarian	①	②	Ⓛ
Writer or journalist	①	②	Ⓛ
Skilled trades	①	②	Ⓛ
Other	①	②	Ⓛ
Undecided	①	②	Ⓛ

23. Below is a general list of things that students sometimes do. Indicate which of these things you did during the past year in school. If you engaged in an activity frequently, Mark "F." If you engaged in an activity one or more times, but not frequently, Mark "O" (occasionally). Mark "N" (not at all) if you have not performed the activity during the past year. (Mark one for each item)

	Frequently	Occasionally	Not at all
Voted in a student election	F	O	N
Came late to class	F	O	N
Listened to New Orlean's (Dixieland) jazz	F	O	N
Gambled with cards or dice	F	O	N
Played a musical instrument	F	O	N
Took a nap or rest during the day	F	O	N
Drove a car	F	O	N
Stayed up all night	F	O	N
Studied in the library	F	O	N
Attended a ballet performance	F	O	N
Participated on the speech or debate team	F	O	N
Acted in plays	F	O	N
Sang in a choir or glee club	F	O	N
Argued with other students	F	O	N
Called a teacher by his or her first name	F	O	N
Wrote an article for the school paper or literary magazine	F	O	N
Had a blind date	F	O	N
Wrote a short story or poem (not for a class)	F	O	N
Played in a school band	F	O	N
Played in a school orchestra	F	O	N
Smoked cigarettes	F	O	N
Attended Sunday school	F	O	N
Checked out a book or journal from the school library	F	O	N
Went to the movies	F	O	N
Discussed how to make money with other students	F	O	N
Said grace before meals	F	O	N
Prayed (not including grace before meals)	F	O	N
Listened to folk music	F	O	N
Attended a public recital or concert	F	O	N
Made wisecracks in class	F	O	N
Arranged a date for another student	F	O	N
Went to an over-night or week-end party	F	O	N
Took weight-reducing or dietary formula	F	O	N
Drank beer	F	O	N
Overslept and missed a class or appointment	F	O	N
Typed a homework assignment	F	O	N
Participated in an informal group sing	F	O	N
Drank wine	F	O	N
Cribbed on an examination	F	O	N
Turned in a paper or theme late	F	O	N
Tried on clothes in a store without buying anything	F	O	N
Asked questions in class	F	O	N
Attended church	F	O	N
Participated in organized demonstrations	F	O	N

24. Indicate the importance to you personally of each of the following: (Mark one for each item)

	Essential	Very Important	Somewhat Important	Not Important
Becoming accomplished in one of the performing arts (acting, dancing, etc.)	E	V	S	N
Becoming an authority on a special subject in my subject field	E	V	S	N
Obtaining recognition from my colleagues for contributions in my special field	E	V	S	N
Becoming an accomplished musician (performer or composer)	E	V	S	N
Becoming an expert in finance and commerce	E	V	S	N
Having administrative responsibility for the work of others	E	V	S	N
Being very well-off financially	E	V	S	N
Helping others who are in difficulty	E	V	S	N
Participating in an organization like the Peace Corps or Vista	E	V	S	N
Becoming an outstanding athlete	E	V	S	N
Becoming a community leader	E	V	S	N
Making a theoretical contribution to science	E	V	S	N
Writing original works (poems, novels, short stories, etc.)	E	V	S	N
Never being obligated to people	E	V	S	N
Creating artistic work (painting, sculpture, decorating, etc.)	E	V	S	N
Keeping up to date with political affairs	E	V	S	N
Being successful in a business of my own	E	V	S	N

25. Rate yourself on each of the following traits as you really think you are when compared with the average student of your own age. We want the most accurate estimate of how you see yourself. (Mark one for each item)

Trait	Highest 10 Percent	Above Average	Average	Below Average	Lowest 10 Percent
Academic ability	O	O	O	O	O
Athletic ability	O	O	O	O	O
Artistic ability	O	O	O	O	O
Cheerfulness	O	O	O	O	O
Defensiveness	O	O	O	O	O
Drive to achieve	O	O	O	O	O
Leadership ability	O	O	O	O	O
Mathematical ability	O	O	O	O	O
Mechanical ability	O	O	O	O	O
Originality	O	O	O	O	O
Political conservatism	O	O	O	O	O
Political liberalism	O	O	O	O	O
Popularity	O	O	O	O	O
Popularity with the opposite sex	O	O	O	O	O
Public speaking ability	O	O	O	O	O
Self-confidence (intellectual)	O	O	O	O	O
Self-confidence (social)	O	O	O	O	O
Sensitivity to criticism	O	O	O	O	O
Stubbornness	O	O	O	O	O
Understanding of others	O	O	O	O	O
Writing ability	O	O	O	O	O

26. How old will you be on December 31 of this year? (Mark one)

- 16 or younger ○
- 17 ○
- 18 ○
- 19 ○
- 20 ○
- 21 ○
- Older than 21 ○

27. (If you are married, omit the following question) What is your best guess as to the chances that you will marry

	While in College?	Within a Year after College?
Very good chance	O	O
Some chance	O	O
Very little chance	O	O
No chance	O	O

THE CARNEGIE COMMISSION ON HIGHER EDUCATION
THE AMERICAN COUNCIL ON EDUCATION

Appendix II: 1969 Student Questionnaire

Dear Friend:

The Carnegie Commission on Higher Education and The American Council on Education are conducting several surveys of students, former students, and faculty members throughout the United States. The information gathered in the present study will be used to reveal young adults' views on aspects of American higher education, so that the qualities and relevance of our colleges and universities may be assessed and, hopefully, improved.

You have been selected to receive this questionnaire because you completed a brief information form when you first entered college, in which you indicated your educational and career plans. Your participation in this study is therefore of great value, because it will permit an assessment of changes over time. We are interested in your responses even if you are not now attending college.

We should greatly appreciate your help in this study by completing the questionnaire and returning it in the enclosed envelope. All of the information will be coded and used in group comparisons for research purposes only. Under no circumstances will individual responses be reported. Your name appears below in order to assure that the recipient is the same person who filled out the original freshman information form.

We realize that not all questions will be equally applicable to your particular situation. Please try to answer each question if there is any basis at all for answering. If you do not wish to answer a question, omit it and go on to the next.

We hope that you will find the questionnaire interesting to answer, and that you will complete it and return it to us immediately.

With thanks for your cooperation.

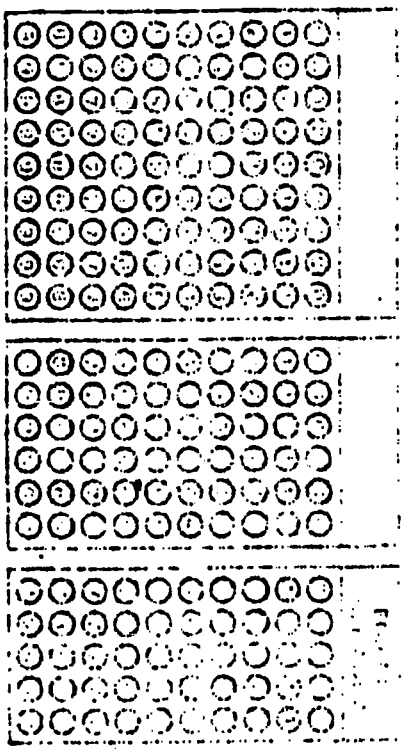
Sincerely,

Clark Kerr

Clark Kerr
Chairman
Carnegie Commission
on Higher Education

Logan Wilson

Logan Wilson
President
American Council
on Education



NOTE: In some of the questions which follow, you will encounter the terms "your college," "my college," etc. In each case we are referring to the institution whose name you wrote in answer to question number 1.

In some questions you will encounter the terms "professors," or "instructors." These refer to faculty members who have the primary responsibility for the conduct of a course, whatever their titles. We do not mean those who assist the person primarily responsible for the course, such as teaching assistants, laboratory assistants, readers, etc.

MARKING INSTRUCTIONS

This questionnaire will be read by an automatic scanning device. Certain marking requirements are essential to this process. Your careful observance of these few simple rules will be most appreciated.

Use soft black lead pencil only (No. 2½ or softer). Do not use pen.

Make heavy black marks that completely fill the circle.

Erase completely any answers you wish to change.

Avoid making any stray marks in this booklet.

1. Did you attend college (full or part time) during this past fall?

Yes . . . ○ No . . . ○

IF YES, print the name of the college
IF NO, print the name of the last college you attended.*

COLLEGE CITY, STATE

2. Did you enroll in college immediately after high school? (disregard summers)

Yes . . . ○ No . . . ○

3. Since first entering college, have you ever dropped out for a term or longer? (disregard summers)

Yes . . . ○ No . . . ○

4. In total, how many different colleges have you enrolled in (disregard temporary summer attendance)?

One . . . ○ Two . . ○ Three . . ○ Four or more . . ○

5. Have you ever enrolled in a junior college?

Yes . . . ○ No . . . ○

IF YES, have you ever transferred to a four year college?

Yes . . . ○ No . . . ○

* *If you have never attended a college, print "none" in the blank, then stop, place questionnaire in return envelope, and return it.*

6. Indicate what you were doing: (mark all that apply)

1. During this past fall
2. During the time you dropped out of college (if YES in Q. 3)
3. Between high school and starting college (if NO in Q. 2)

	1	2	3
College, full time	①		
College, part time	①		
Graduate school	①		
Temporary college interruption (illness, etc.)	①	②	③
Night school, adult education	①	②	③
Work, part time	①	②	③
Work, full time	①	②	③
Military service, active duty	①	②	③
Housewife	①	②	③
Unemployed, looking for a job	①	②	③

7. When will you most likely graduate with your Bachelor's degree? (Mark one)

I do not expect to get a Bachelor's degree . . ○
I have a Bachelor's degree already . . . . . ○
June 1970 or earlier . . . . . ○
July 1970 - June 1971 . . . . . ○
July 1971 - June 1972 . . . . . ○
July 1972 - June 1973 . . . . . ○
After June 1973 . . . . . ○
Highly uncertain . . . . . ○

8. Please indicate your agreement or disagreement with each of the following statements.

1. Strongly Agree
2. Agree With Reservations
3. Disagree With Reservations
4. Strongly Disagree

	1	2	3	4
Opportunities for higher education should be available to all high school graduates who want it	①	②	③	④
Classified weapons research is a legitimate activity on college and university campuses	①	②	③	④
A man can be an effective teacher without personally involving himself with his students	①	②	③	④
A professor's teaching inevitably reflects his political values	①	②	③	④
Teaching effectiveness, not publications, should be the primary criterion for promotion of faculty	①	②	③	④
A strike would be a legitimate means of collective action for faculty members under some circumstances	①	②	③	④

8. Continued

Faculty members should be free on campus to advocate violent resistance to public authority .... ①②③④
Faculty members should be free to present in class any idea they consider relevant ..... ①②③④
Most American colleges reward conformity and crush student creativity ..... ①②③④
Most American colleges and universities are racist whether they mean to be or not ..... ①②③④
Any special academic program for black students should be administered and controlled by black people ..... ①②③④
Any institution with a substantial number of black students should offer a program of Black Studies if they wish it ..... ①②③④
Student demonstrations have no place on a college campus ..... ①②③④
Students should be more militant in defending their interests ..... ①②③④
Students who disrupt the functioning of a college should be expelled or suspended ..... ①②③④
Political activities by students have no place on a college campus ... ①②③④
Most college officials have been too lax in dealing with student protests on campus ..... ①②③④
College officials have the right to regulate student behavior off campus ..... ①②③④
Student publications should be cleared by college officials ..... ①②③④

Undergraduate education in America would be improved if:

All courses were elective ..... ①②③④
Grades were abolished ..... ①②③④
Course work were more relevant to contemporary life and problems ..... ①②③④
More attention were paid to the emotional growth of students . ①②③④
Students were required to spend a year in community service in the U.S. or abroad ..... ①②③④
The college were governed completely by its faculty and students ..... ①②③④
There were less emphasis on specialized training and more on broad liberal education ..... ①②③④

9. For each of these statements, indicate whether it is true or false at your college (if not now attending, indicate if it was true at your college).

1. Almost Always True
2. Usually True
3. Usually False
4. Almost Always False

①②③④

My grades understate the true quality of my work ..... ①②③④
Professors in my major field give my work the attention it deserves ... ①②③④
Professors give my work too much attention ..... ①②③④
I work hard at my studies ..... ①②③④
I find myself bored in class ..... ①②③④
I really don't care what grades I get . ①②③④
It is possible to get good grades without really understanding the material ..... ①②③④
Some forms of cheating are necessary to get the grade I want .... ①②③④
I think I would be happier if I hadn't entered college ..... ①②③④
Getting a degree is more important to me than the content of my courses ..... ①②③④
Professors tend to reward nonconformity ..... ①②③④
The best way to make it is to tell professors what they want to hear ..... ①②③④

10. People want different things from college. A) Indicate how important it is for you to get each of the following at college. B) Indicate how much of each you have received at your college.

IMPORTANCE
1. Essential
2. Fairly Important
3. Not Important

RECEIVED
7. Much
8. Some
9. None

①②③ ⑦⑧⑨

	Importance	Received
A detailed grasp of a special field	①②③	⑦⑧⑨
A well-rounded general education	①②③	⑦⑧⑨
Training and skills for an occupation	①②③	⑦⑧⑨
Learning to get along with people	①②③	⑦⑧⑨
Preparation for marriage...	①②③	⑦⑧⑨
Formulating the values and goals of my life	①②③	⑦⑧⑨

11. For each of these statements, indicate whether it is true or false at your college (if not now attending, indicate if it was true at your college). IF TRUE, indicate whether it bother(s)(ed) you.

	True	False	Bothers: Yes	Bothers: No
I am not interested in most of my courses	○	○	○	○
I am not really learning anything new	○	○	○	○
I am not really learning anything important	○	○	○	○
I am not doing as well as I wish academically	○	○	○	○
I often don't know what professors want	○	○	○	○
It is difficult both to get good grades and really learn something	○	○	○	○
Many successful students at my college make it by "beating the system" rather than by studying	○	○	○	○
I am often lonely	○	○	○	○
My college is much like high school	○	○	○	○
I am under much pressure and strain	○	○	○	○
I find it hard to meet my college expenses	○	○	○	○
I don't discuss personal matters with professors	○	○	○	○
I am often in low spirits	○	○	○	○

12. How hard would you work in a class in which:

1. Harder Than Usual
2. As Much As Usual
3. Less Than Usual

The instructor is very stimulating	①②③
The subject is essential to your career	①②③
A good grade is very hard to get	①②③
You are not at all interested in the course	①②③
Your parents really want you to do well	①②③
A pass-fail grade (or equivalent) is used	①②③

13. Did any of your courses during your most recent college term have the following?

	Yes	No
Term papers	○	○
Take-home examinations	○	○
Frequent quizzes in class	○	○
Computer or machine-aided instruction	○	○
Closed-circuit television	○	○
100 or more students	○	○
Small discussion meetings	○	○
Laboratory assistants	○	○
Teaching assistants	○	○
Some class meetings at the professor's home	○	○

14. How satisfied are you with the following at your college?

1. Very Satisfied
2. Satisfied
3. Dissatisfied
4. Very dissatisfied

The college's academic reputation	①②③④
The intellectual environment	①②③④
Faculty/student relations	①②③④
The quality of classroom instruction	①②③④
The variety of courses I can take	①②③④
Friendships with other students	①②③④
The administration	①②③④

15. Do you think you will:

1. Definitely
2. Probably
3. Probably Not
4. Definitely Not

Change to another college before receiving a Bachelor's degree	①②③④
Return to college (if not now attending)	①②③④
Drop out before getting a Bachelor's degree	①②③④
Graduate without a specific career in mind	①②③④
Never have a career at all	①②③④

16. Please indicate your agreement or disagreement with each of the following statements.

1. Strongly Agree
2. Agree With Reservations
3. Disagree With Reservations
4. Strongly Disagree

Most undergraduates at my college are satisfied with the education they are getting	①②③④
Much of what is taught at my college is irrelevant to what is going on in the outside world	①②③④
Most faculty at my college are strongly interested in the academic problems of undergraduates	①②③④

16. Continued

Professors and administrators at my college show too much interest in students' personal lives ..... ①②③④

The normal academic requirements should be relaxed in appointing members of minority groups to the faculty at my college ..... ①②③④

My college should be actively engaged in solving social problems . ①②③④

Most rules governing student behavior at my college are sensible . ①②③④

Most professors at my college don't do much to earn their pay ..... ①②③④

More minority group undergraduates should be admitted to my college even if it means relaxing normal academic standards of admission . ①②③④

I cannot imagine being happy in any of the careers available to me ..... ①②③④

I consider myself an intellectual ... ①②③④

I consider myself religious ..... ①②③④

I believe there is a God who judges men ..... ①②③④

I would rather be going to college now than doing anything else ... ①②③④

My beliefs and attitudes are similar to those of most students ..... ①②③④

Striving for occupational success would require me to compromise important ethical principles .... ①②③④

The military draft has influenced my decisions about college attendance ..... ①②③④

My finances are adequate to my needs ..... ①②③④

American colleges and universities must sever all ties with the military-industrial complex ..... ①②③④

College officials have the right to ban persons with extreme views from speaking on campus ..... ①②③④

17. What role do you believe undergraduates should play in decisions on the following? (Mark one in each row)

①②③④⑤ — 1. Control; 2. Voting Power on Committees; 3. Formal Consultation; 4. Informal Consultation; 5. Little or No Role

Faculty appointment and promotion ..... ①②③④⑤

Undergraduate admissions policy . ①②③④⑤

Bachelor's degree requirements .. ①②③④⑤

Provision and content of courses . ①②③④⑤

Residence hall regulations ..... ①②③④⑤

Student discipline ..... ①②③④⑤

18. All in all, in terms of your own needs and desires, how much of the following have you had at college? (Mark one in each row)

①②③ — 1. Too Much or Too Many; 2. About the Right Amount; 3. Not Enough

Freedom in course selection ..... ①②③

Social life ..... ①②③

Personal contacts with classmates .... ①②③

Work required of you in courses ..... ①②③

Outlets for creative activities ..... ①②③

Sleep ..... ①②③

Exercise ..... ①②③

Personal contacts with faculty ..... ①②③

Personal contacts with family ..... ①②③

Advice and guidance from faculty and staff ..... ①②③

19. How important are each of the following to you for your future?

①②③ — 1. Essential; 2. Desirable; 3. Not Important

Opportunities to be original and creative ..... ①②③

A stable, secure future ..... ①②③

Freedom from supervision in my work . ①②③

Opportunities to be useful to society .. ①②③

A chance to exercise leadership ..... ①②③

Living and working in the world of ideas ..... ①②③

Work with people rather than things .. ①②③

Avoiding a high-pressure job ..... ①②③

20. Answer each of the following as you think it applies to your college:

	Yes	No
The students are under a great deal of pressure to get high grades	O	O
The student body is apathetic and has little "school spirit"	O	O
Most of the students are of a very high calibre academically	O	O
There is a keen competition among most of the students for high grades .	O	O
Freshmen have to take orders from upperclassmen for a period of time .	O	O
There isn't much to do except to go to class and study	O	O
I felt "lost" when I first came to the campus	O	O
Being in this college builds poise and maturity	O	O
Athletics are overemphasized	O	O
The classes are usually run in a very informal manner	O	O
Most students are treated like "numbers in a book"	O	O

21. Which of the following experiences applies to you since entering college? (Mark all that apply)

	Yes
Elected to a student office	O
Played on a varsity athletic team	O
Changed your long-term career plans	O
Flunked a course	O
Changed your major field	O
Fell in love	O
Had a lead in a college play	O
Wrote an article for the school paper or magazine	O
Joined a social fraternity or sorority	O
Received treatment in the Student Health Center	O
Participated in an honors program	O
Was enrolled in a program for disadvantaged students	O
Took pass-fail course (or equivalent)	O
Participated in ROTC	O
Was ever on academic probation	O
Voted in a student election	O
Worked in a college political campaign	O
Worked in a local, state or national political campaign	O

22. To what extent do you think each of the following describes the psychological climate or atmosphere at your college? (Mark one for each item)

1. Very Descriptive
2. In Between
3. Not At All Descriptive

Intellectual	①②③
Snobbish	①②③
Social	①②③
Victorian	①②③
Practical-minded	①②③
Warm	①②③
Realistic	①②③
Liberal	①②③

23. Is there any Professor at your college with whom you:

	Major Field Professors		Other Professors	
	Yes	No	Yes	No
Often discuss topics in his field	O	O	O	O
Often discuss other topics of intellectual interest	O	O	O	O
Sometimes engage in social conversation	O	O	O	O
Ever talk about personal matters	O	O	O	O

24. Think about the course you took during your most recent college term which was most closely related to your primary field of interest. Please mark "yes" for all the following statements which apply to this course. (If the course had a lab portion, mark "yes" only for those items which apply to the lecture portion.)

	Yes
The class met only at a regularly scheduled time and place	O
Students had assigned seating	O
The lectures followed the textbook closely	O
The instructor called students by their first names	O
The instructor encouraged a lot of class discussion	O
I knew the instructor's first name	O
I was in the instructor's office one or more times	O
The instructor was enthusiastic	O
The instructor had a good sense of humor	O
The instructor was often dull and uninteresting	O
The instructor knew me by name	O
I sometimes argued openly with the instructor	O
I usually typed my written assignments	O
I was a guest in the instructor's home one or more times	O

25. What action would be taken at your college if a student were known to have done the following? (Mark one for each item.)

1. No action would be taken
2. Reprimand or minor disciplinary action
3. Major disciplinary action (possible expulsion from college)
4. Sure expulsion from college

Coming in from a date two hours late	①②③④
Cheating on exams	①②③④
Drinking in living quarters	①②③④
Being drunk	①②③④
Being alone with a date in your room during the day	①②③④
Being alone with a date in your room at night	①②③④
Staying off campus overnight without permission	①②③④
Organizing a student demonstration against some administrative policy	①②③④
Writing off-color stories in a student publication	①②③④
Participating in a water fight or dormitory raid	①②③④
Using LSD or speed	①②③④
Using marijuana	①②③④

26. What is your over-all evaluation of your college? (mark one)

Very satisfied with my college ..... ○
Satisfied with my college ..... ○
On the fence ..... ○
Dissatisfied with my college ..... ○
Very dissatisfied with my college ..... ○

27. Indicate the importance to you personally of each of the following (mark one for each item).

E—Essential
V—Very Important
S—Somewhat Important
N—Not Important

Becoming accomplished in one of the performing arts (acting, dancing, etc.) ..... E V S N
Becoming an authority on a special subject in my subject field ..... E V S N
Obtaining recognition from my colleagues for contributions in my special field ..... E V S N
Influencing the political structure ..... E V S N
Influencing social values ..... E V S N
Raising a family ..... E V S N
Having an active social life ..... E V S N
Having friends with different backgrounds and interests from mine ..... E V S N
Becoming an expert in finance and commerce ..... E V S N
Having administrative responsibility for the work of others ..... E V S N
Being very well-off financially ..... E V S N
Helping others who are in difficulty ..... E V S N
Becoming a community leader ..... E V S N
Making a theoretical contribution to science ..... E V S N
Writing original works (poems, novels, short stories, etc.) ..... E V S N
Never being obligated to people ..... E V S N
Creating artistic work (painting, sculpture, decorating, etc.) ..... E V S N
Keeping up to date with political affairs ..... E V S N
Being successful in a business of my own ..... E V S N
Developing a meaningful philosophy of life ..... E V S N

28. Please indicate your agreement or disagreement with each of the following statements.

1. Strongly Agree
2. Agree With Reservations
3. Disagree With Reservations
4. Strongly Disagree

Communist China should be recognized immediately by the U.S. 1 2 3 4

28. Continued AII

These days you hear too much about the rights of minorities and not enough about the rights of the majority 1 2 3 4
Most people who live in poverty could do something about their situation if they really wanted to 1 2 3 4
Some form of Communist regime is probably necessary for progress in underdeveloped countries 1 2 3 4
In the USA today there can be no justification for using violence to achieve political goals 1 2 3 4
The main cause of Negro riots in the cities is white racism 1 2 3 4
Meaningful social change cannot be achieved through traditional American politics 1 2 3 4
I am very interested in national politics 1 2 3 4
However acute our domestic problems, we cannot afford to suspend our space effort 1 2 3 4
In the Arab-Israeli dispute, my sympathies are with the Israelis 1 2 3 4
The U.S. should withdraw from Vietnam immediately 1 2 3 4
Racial integration of the public elementary schools should be achieved even if it requires busing 1 2 3 4
Where de facto segregation exists, black people should be assured control over their own schools 1 2 3 4
Only volunteers should serve in the armed forces 1 2 3 4
Undergraduates known to use marijuana regularly should be suspended or dismissed 1 2 3 4
A student's grades should not be revealed to anyone off campus without his consent 1 2 3 4
The chief benefit of a college education is that it increases one's earning power 1 2 3 4

29. Of your close friends at your college only, what proportion are/were: (answer for your most recent college term)

1. All
2. Most
3. A few
4. None

In your major field 1 2 3 4
Of the same sex as you 1 2 3 4
In your same class (year) in college 1 2 3 4
Living in the same building as you 1 2 3 4

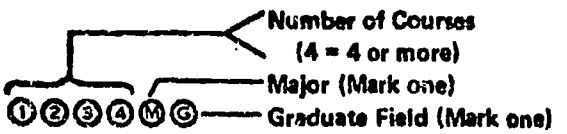
30. a. Where did you live most of the time during your most recent college term?
b. Where would you have preferred to live?

	Lived (Mark One)	Preferred (Mark One)
College dormitory or other college-run housing	○	○
Fraternity or sorority house	○	○
Rooming house or rented room	○	○
Apartment (not with parents or relatives)	○	○
With parents or relatives	○	○
Other	○	○

31. In regard to each of the following activities:
a. Did you ever engage in the activity?
b. If not, would you like to do it?

	Did		Would like to	
	Yes	No	Yes	No
Work in the Peace Corps or Vista	○	○	○	○
Tutor minority group children	○	○	○	○
Community organizing for social action	○	○	○	○
Work in a political campaign	○	○	○	○
Work as a hospital volunteer	○	○	○	○
Participate in an encounter group (sensitivity training)	○	○	○	○

32. a. Mark the number of courses you took in each of the fields listed, during your most recent college term. (If you took no courses in a given field, leave it blank.)
b. If now attending, mark your major field of study. (If you have not formally selected a major field, mark your intended or most probable field.)
c. If planning graduate study, mark your most probable field of study.



Architecture, Environmental Design	①	②	③	④	Ⓜ	Ⓖ
Art and Art History	①	②	③	④	Ⓜ	Ⓖ
English Literature	①	②	③	④	Ⓜ	Ⓖ
Journalism (writing)	①	②	③	④	Ⓜ	Ⓖ
Languages, Modern	①	②	③	④	Ⓜ	Ⓖ
Languages, Other, and Classics	①	②	③	④	Ⓜ	Ⓖ
Music	①	②	③	④	Ⓜ	Ⓖ
Philosophy	①	②	③	④	Ⓜ	Ⓖ
Speech and Drama	①	②	③	④	Ⓜ	Ⓖ
Theology	①	②	③	④	Ⓜ	Ⓖ
Other/General: Arts & Humanities	①	②	③	④	Ⓜ	Ⓖ
Biochemistry, Biophysics	①	②	③	④	Ⓜ	Ⓖ
Botany	①	②	③	④	Ⓜ	Ⓖ
Zoology	①	②	③	④	Ⓜ	Ⓖ
Other/General: Biological Science	①	②	③	④	Ⓜ	Ⓖ
Accounting	①	②	③	④	Ⓜ	Ⓖ
Business Administration	①	②	③	④	Ⓜ	Ⓖ
Secretarial	①	②	③	④	Ⓜ	Ⓖ
Other/General: Business	①	②	③	④	Ⓜ	Ⓖ
Engineering	①	②	③	④	Ⓜ	Ⓖ
Chemistry	①	②	③	④	Ⓜ	Ⓖ
Computer Science	①	②	③	④	Ⓜ	Ⓖ
Geology, Astronomy	①	②	③	④	Ⓜ	Ⓖ
Mathematics	①	②	③	④	Ⓜ	Ⓖ
Statistics	①	②	③	④	Ⓜ	Ⓖ
Physics	①	②	③	④	Ⓜ	Ⓖ
Other/General: Physical Science	①	②	③	④	Ⓜ	Ⓖ
Anthropology	①	②	③	④	Ⓜ	Ⓖ
Economics	①	②	③	④	Ⓜ	Ⓖ
Geography	①	②	③	④	Ⓜ	Ⓖ
History	①	②	③	④	Ⓜ	Ⓖ
Political Science	①	②	③	④	Ⓜ	Ⓖ
Psychology	①	②	③	④	Ⓜ	Ⓖ
Social Work, Welfare, Criminology	①	②	③	④	Ⓜ	Ⓖ
Sociology	①	②	③	④	Ⓜ	Ⓖ
Other/General: Social Science	①	②	③	④	Ⓜ	Ⓖ
Education	①	②	③	④	Ⓜ	Ⓖ
Health Technology (medical, physical, etc.)	①	②	③	④	Ⓜ	Ⓖ
Nursing	①	②	③	④	Ⓜ	Ⓖ
Pharmacy	①	②	③	④	Ⓜ	Ⓖ
Therapy (occupational, physical, etc.)	①	②	③	④	Ⓜ	Ⓖ
Other Professional (Law, Medicine, etc.)	①	②	③	④	Ⓜ	Ⓖ
Agriculture	①	②	③	④	Ⓜ	Ⓖ
Ethnic Studies (e.g., Black Studies)	①	②	③	④	Ⓜ	Ⓖ
Electronic Technology, Communications	①	②	③	④	Ⓜ	Ⓖ
Forestry	①	②	③	④	Ⓜ	Ⓖ
Home Economics	①	②	③	④	Ⓜ	Ⓖ
Industrial Arts	①	②	③	④	Ⓜ	Ⓖ
Library Science	①	②	③	④	Ⓜ	Ⓖ

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33. From the following list of employers, please mark:

A. your probable first employer after you complete your education, or your present employer if you are not attending school.

B. your expected long-run career employer

C. the employer you would most prefer if you were free to choose

D. your father's primary employer during most of his working years.

	Mark one in each column
Self-employed professional practice	A B C D
Partner or associate in professional practice	A B C D
Self-employed or family business	A B C D
Business or industry	A B C D
Federal Government (U.S. incl. military)	A B C D
State or local government	A B C D
Elementary or secondary school system	A B C D
Junior college	A B C D
College or university	A B C D
Research organization or institute	A B C D
Hospital or clinic	A B C D
Other non-profit organization (e.g., church, welfare agency)	A B C D
Other	A B C D

34. From the following list of occupations, please mark:

A. your probable first job after you complete your education, or your present job if you are not presently attending school

B. your expected long-run career occupation

C. the career you would most prefer if you were free to choose any from the list

D. your father's primary occupation during most of his working years.

	Mark One In Each Column
Physician or Surgeon	A B C D
Dentist	A B C D
Nurse	A B C D
Therapist, Lab Technician, Hygienist	A B C D
Dietitian or Home Economist	A B C D
Pharmacist, Optometrist	A B C D
Other/Medical and Health Professions	A B C D
Lawyer (Attorney)	A B C D

34. Continued — AII

Public Administrator, Official, Politician	A B C D
Military Service (career)	A B C D
Law Enforcement Officer	A B C D
Librarian	A B C D
Social Welfare, Group Worker	A B C D
Counselor, Psychologist	A B C D
Clergy	A B C D
Other/Public and Social Services	A B C D
Architect, Designer, City Planner	A B C D
Artist, Actor, Musician, Entertainer	A B C D
Writer, Journalist	A B C D
Other/Design, Arts and Writing	A B C D
Teacher, elementary	A B C D
Teacher, secondary	A B C D
College Teacher, Professor	A B C D
Other/Education	A B C D
Engineer	A B C D
Scientific Technician, Programmer	A B C D
Scientist, Researcher	A B C D
Business Executive, Official, Owner	A B C D
Accountant	A B C D
Secretary, Clerk	A B C D
Salesman or Buyer	A B C D
Other/Business, Industry--Non-manual	A B C D
Farmer, Rancher, Other Agricultural	A B C D
Skilled Worker, Craftsman	A B C D
Foreman, Inspector	A B C D
Semiskilled Worker, Operator, Driver	A B C D
Laborer (unskilled)	A B C D
Housewife	A B C

35. Some jobs involve the following activities.

a. Which, if any, will probably be part of your work?

b. Which would you most prefer to do, if you had your choice?

	Will Probably Do		Would Prefer	
	Yes	No	Yes	No
Teaching	O	O	O	O
Research	O	O	O	O
Administration	O	O	O	O
Service to clients or patients	O	O	O	O

38. What is the highest academic degree you intend to obtain? (Mark one)

None	O
Associate (or equivalent)	O
Bachelor's degree (B.A., B.S., etc.)	O
LL.B. or J.D.	O
M.D., D.D.S., or D.V.M.	O
Other professional (M.B.A., M.S.W., B.D., etc.)	O
Master's degree (M.A., M.S., etc.)	O
Ed.D.	O
Ph.D.	O
Other	O

37. What is your cumulative college grade point average?

A or A+	○	B−	○
A−	○	C+	○
B+	○	C	○
B	○	C− or below	○

38. Indicate the political leaning which best describes:

1. Left
2. Liberal
3. Middle-of-the-Road
4. Moderately Conservative
5. Strongly Conservative

Yourself	①②③④⑤
Your parents	①②③④⑤
Your friends	①②③④⑤
Most other students at your college	①②③④⑤
Most professors at your college	①②③④⑤

39. Please indicate your agreement or disagreement with each of the following statements.

1. Strongly Agree
2. Agree With Reservations
3. Disagree With Reservations
4. Strongly Disagree

Students should have a major role in specifying the college curriculum	①②③④
Scientists should publish their findings regardless of the possible consequences	①②③④
Realistically an individual person can do little to bring about changes in our society	①②③④
Man will never realize his full potential until he is freed from the laws and conventions of society	①②③④
Striving for occupational success is incompatible with contributing to the long-run good of mankind	①②③④
Faculty promotions should be based on student evaluations	①②③④
Marijuana should be legalized	①②③④
Divorce laws should be liberalized	①②③④
Under some conditions, abortions should be legalized	①②③④
There is too much concern in the courts for the rights of criminals	①②③④
Capital punishment (the death penalty) should be abolished	①②③④
Current levels of air pollution in large cities justify the use of drastic measures to limit the use of motor vehicles	①②③④

39. Continued

Urban problems cannot be solved without huge investments of Federal money	①②③④
Cigarette advertising should be outlawed	①②③④
Women are at least the intellectual equals of men	①②③④
There are dimensions of life that cannot be grasped rationally	①②③④

40. How often, on average, do you:

1. Nearly Every Day
2. Once or Twice a Week
3. A Few Times a Month
4. A Few Times a Year
5. Never

Attend a concert or play	①②③④⑤
Listen to classical music	①②③④⑤
Read books not required for courses	①②③④⑤
Attend an "art" film	①②③④⑤
Watch TV more than one hour	①②③④⑤
Listen to rock, folk, or soul music	①②③④⑤
Go out on a date	①②③④⑤
Attend a party	①②③④⑤
Spend time in a cafeteria or other student hang-out	①②③④⑤
Visit in friends' rooms or apartments	①②③④⑤
Attend a meeting of some College organization	①②③④⑤
Attend an athletic event	①②③④⑤
Play a sport (non-varsity)	①②③④⑤
Discuss schoolwork with your friends	①②③④⑤
Attend political meetings, lectures, etc.	①②③④⑤
Have contact with your parents by letter, phone, or visit	①②③④⑤
Visit with other relatives	①②③④⑤
Participate in student government (if now attending)	①②③④⑤

41. What is your present religious preference?

Protestant	○	Other	○
Catholic	○	None	○
Jewish	○		

42. Of all the people you know, how many do you count as close friends?

None	○	3 - 5	○	11 - 15	○
1 - 2	○	6 - 10	○	15 or more	○

43. Of your close friends, what proportion are/were: (answer for your most recent college term)

1. All
2. Most
3. A Few
4. None

Students at your college	①②③④
Students at another college	①②③④
Not college students	①②③④

44. With regard to demonstrations or protests on each of the following issues, have you, since entering college: (mark all that apply)

1. Helped Organize or Lead
2. Participated In
3. Observed at First Hand
4. None of These

	At My College	Elsewhere
A demonstration against U.S. military policy	①②③④	①②③④
A demonstration against existing ethnic or racial policies	①②③④	①②③④
A demonstration against administrative policies of a college	①②③④	①②③④
A demonstration against college demonstrators	①②③④	①②③④

45. How often did you do each of the following during your most recent college term? (Mark one for each item)

F. Frequently
O. Occasionally
N. Not At All

Came late to class	FON
Played a musical instrument	FON
Studied in the library	FON
Checked out a book or journal from the college library	FON
Arranged a date for another student	FON
Overslept and missed a class or appointment	FON
Typed a homework assignment	FON
Discussed my future with my parents	FON
Failed to complete an assignment on time	FON
Argued with an instructor in class	FON
Attended a religious service	FON
Did extra (unassigned) reading for a course	FON
Took sleeping pills	FON
Tutored another student	FON

45. Continued

AII

Played chess	FON
Read poetry not connected with a course	FON
Took a tranquilizing pill	FON
Discussed religion	FON
Took vitamins	FON
Visited an art gallery or museum	FON
Missed classes because of illness	FON
Smoked cigarettes	FON
Discussed politics	FON
Drank beer	FON
Discussed sports	FON
Asked an instructor for advice after class	FON
Had vocational counseling	FON
Stayed up all night	FON
Studied less than 5 hours in any given week	FON
Studied more than 30 hours in any given week	FON

46. Indicate below the actual or probable source(s) you are using to finance your college and living expenses this academic year. (If not attending this year, answer for the last year you did attend.)

1. Not a Source
2. Minor Source 1% - 25%
3. Minor Source 26% - 50%
4. Major Source - Over 50%

Support from family	①②③④
Employment during college year	①②③④
Employment during summer	①②③④
Spouse's employment	①②③④
Scholarship, fellowship, grant, gift, etc.	①②③④
Repayable loan taken by yourself	①②③④
Your own savings or investments	①②③④
Other	①②③④

47. If your annual costs at your college were increased $300.00, would you . . . (Mark one for each item. If not attending this year, skip this question.)

Y. Yes
M. Maybe
N. No

Get it from your parents	YMN
Earn it during the summer	YMN
Have to work (more) during the school year	YMN
Borrow it	YMN
Try to live on less money	YMN
Go to a less expensive college	YMN
Quit school	YMN
Get more scholarship aid	YMN

48. Did you live with each of your parents during most of the periods indicated? (Disregard attendance at boarding school.)

	Father (Step-Father)		Mother (Step-Mother)	
	Yes	No	Yes	No
During your grade school years	O	O	O	O
During your high school years	O	O	O	O

49. The following are descriptions of how some parents raise their children. Mark the response which best describes your mother and father as they were most of your life up to the time you graduated from high school.

V — Very True
S — Somewhat True
N — Not True At All

	Father	Mother
If I had some kind of problem I could count on them to help me out	V S N	V S N
They kept after me to do well in school	V S N	V S N
If I didn't do what was expected of me, they were very strict about it	V S N	V S N
They comforted and helped me when I had troubles	V S N	V S N
They kept after me to do better than other children	V S N	V S N
They expected me to keep my things in good order	V S N	V S N
They taught me things I wanted to learn	V S N	V S N
They kept pushing me to do my best in everything	V S N	V S N
They made me feel I could talk with them about everything	V S N	V S N
When they wanted me to do something, they explained why	V S N	V S N

50. In general, I would characterize my parents as: (Mark one number for each item.)

V — Very Much So
S — Somewhat
N — Not At All

Interested in intellectual pursuits	V S N
Interested in cultural pursuits	V S N
Religious	V S N
Interested in politics	V S N
Financially comfortable	V S N

51. From what kind of secondary school did you graduate? (Mark one)

- Public school ..... O
- Non-public, Catholic ..... O
- Non-public, other religiously affiliated ..... O
- Non-public, non-religiously affiliated ..... O
- Bureau of Indian Affairs School ..... O
- Other Federal Government school ..... O

52. Of the students in your high school graduating class, about what percentage went to college?

Less than 10% ... O	51 - 75% ..... O
10 - 25% ..... O	76 - 90% ..... O
26 - 50% ..... O	More than 90% . O

53. Are you:

- Single ..... O
- Engaged ..... O
- Married ..... O
- Separated, divorced, widowed ..... O

54. How old do you expect to be when you get married? (If you are already married, please mark the age at which you married.) Mark one.

- Age 20 or younger ..... O
- Age 21 - 22 ..... O
- Age 23 - 24 ..... O
- Age 25 - 26 ..... O
- Age 27 - 28 ..... O
- Age 29 - 30 ..... O
- Age 31 - 35 ..... O
- Over age 35 ..... O
- I do not expect to marry ..... O

55. Are you: (Mark all that apply.)

- White/Caucasian ..... O
- Black/Negro/Afro-American ..... O
- American Indian ..... O
- Spanish-American/Mexican-American ..... O
- Puerto-Rican ..... O
- Oriental ..... O
- None of these ..... O

If you have comments on any of the issues covered in this questionnaire please send them under separate cover to:

Survey of Higher Education

National Computer Systems Processing Center

4401 West 76th Street

Minneapolis, Minnesota 55435

THANK YOU FOR YOUR COOPERATION

THE CARNEGIE COMMISSION ON HIGHER EDUCATION

THE AMERICAN COUNCIL ON EDUCATION

Appendix III: 1969 Faculty Questionnaire

Dear Colleague:

American higher education is currently undergoing its greatest changes in a hundred years. The extent and rapidity of these changes are causing severe strains and grave problems in our colleges and universities. But while we can see the broad outlines of these problems in overcrowded classrooms, rising costs, student rebellions, and threats to academic feeedom from several quarters, there is very little detailed information on the form they take in different kinds of institutions, or in different disciplines and professions. Nor do we have firm knowledge of how the people most directly affected, the students and faculty, feel about these problems and issues.

To meet this need for more and better knowledge, the Carnegie Commission on Higher Education, in cooperation with the American Council on Education, is conducting a national survey of students and faculty in a broad sample of colleges and universities. The information we are gathering will be of help to the Carnegie Commission and to other bodies concerned with public policy in this area, as well as to scholars who are studying current problems and developments in American higher education. Our findings will be published in books and reports; the data we collect will be made available in an anonymous form to other scholars and students of higher education.

We have no illusion that even a broad survey of this kind will answer all our questions. We know the limits of questionnaires, and are conducting other studies, in other ways, to supplement this survey. Nevertheless, a broad survey such as this provides information that can be obtained in no other way. We know how busy faculty members and administrators are. And we know also that other surveys may have made similar demands on your time. But the present survey is unique in its scope and purposes: it is the first to ask similar questions of students and faculty in the same institutions, and it is the first to explore a variety of these issues on a national scale. The accuracy of the survey and the worth of its findings are dependent on your willingness to answer our questions. We believe the importance of the study will justify the time you give it.

One other matter. It is impossible to frame questions all of which are equally relevant to faculty members in many different fields and kinds of institutions; you may find some that seem inappropriate to your situation. We urge you to answer all the questions as well as you can; in our analysis we will be able to take into account special circumstances that affect replies to some questions.

Finally, we assure you that your answers will be held in strictest confidence. We are interested only in statistical relationships and will under no circumstances report responses on an individual or departmental basis. Any special markings on your form are used solely for internal data processing.

We hope you will find the questionnaire interesting to answer, and that you will complete and return it to us while you have it at hand.

With our thanks for your cooperation.

Sincerely,

Logan Wilson
President
American Council on Education

Clark Kerr
Chairman
Carnegie Commission on Higher Education

MARKING INSTRUCTIONS:

This questionnaire will be read by an automatic scanning device. Certain marking requirements are essential to this process. Your careful observance of these few simple rules will be most appreciated.

Use soft black lead pencil only. (No. 2½ or softer)

Make heavy black marks that completely fill the circle.

Erase completely any answers you wish to change.

Avoid making any stray marks in this booklet.

1. What is your present rank?
   - Instructor ○
   - Assistant Professor ○
   - Associate Professor ○
   - Professor ○
   - Lecturer ○
   - No ranks designated ○
   - Other ○

2. What kind of appointment do you have here?
   - Regular with tenure ○
   - Regular without tenure ○
   - Acting ○
   - Visiting ○

3. During the spring term*, how many hours per week are you spending in formal instruction in class? (Give actual, not credit hours)

None ○	7-8 ○	13-16 ○
1-4 ○	9-10 ○	17-20 ○
5-6 ○	11-12 ○	21 or more ○

4. Are your teaching responsibilities this academic year
   - Entirely undergraduate ○
   - Some undergraduate, some graduate ○ → Skip to No. 7
   - Entirely graduate ○ → Skip to No. 7
   - Not teaching this year ○ → Skip to No. 8

5. How much do you control the content of your undergraduate courses?

Almost completely ○	Somewhat ○
Substantially ○	Hardly at all ○

6. In about how many of the undergraduate courses you teach do you use the following?

	Most	Some	None
Term papers	○	○	○
Frequent quizzes	○	○	○
Graduate teaching assistants	○	○	○
Closed-circuit television	○	○	○
Computer or machine-aided instruction	○	○	○

*quarter, semester, trimester, etc.

7. About how many students, at all levels, are enrolled in your courses this term?

None ○	Under 25 ○	100-249 ○
	25-49 ○	250-399 ○
	50-99 ○	400 or more ○

8. Do you discourage undergraduates from seeing you outside your regular office hours?
   - Yes, almost always ○
   - Yes, but with many exceptions ○
   - No ○

9. Please indicate your agreement or disagreement with each of the following statements.
   1. Strongly Agree
   2. Agree With Reservations
   3. Disagree With Reservations
   4. Strongly Disagree

Most undergraduates are mature enough to be given more responsibility for their own education	①②③④
Graduate students in my subject do best if their undergraduate major was in the same general field	①②③④
Most graduate students in my department* are basically satisfied with the education they are getting	①②③④
Most Ph.D. holders in my field get their degrees without showing much real scholarly ability	①②③④
My department* has taken steps to increase graduate student participation in its decisions	①②③④
The graduate program in my department* favors the bright, imaginative student	①②③④
Many of the best graduate students can no longer find meaning in science and scholarship	①②③④
Graduate education in my subject is doing a good job of training students	①②③④
Some of the best graduate students drop out because they do not want to "play the game" or "beat the system"	①②③④
The female graduate students in my department* are not as dedicated as the males	①②③④
The typical undergraduate curriculum has suffered from the specialization of faculty members	①②③④
This institution should be as concerned about students' personal values as it is with their intellectual development	①②③④

*If no graduate program in your department, leave blank.

9 Continued.

Most undergraduates here are basically satisfied with the education they are getting ..... ①②③④

A man can be an effective teacher without personally involving himself with his students ..... ①②③④

Most faculty here are strongly interested in the academic problems of undergraduates ..... ①②③④

Most American colleges reward conformity and crush student creativity ..... ①②③④

This institution should be actively engaged in solving social problems ..... ①②③④

More minority group undergraduates should be admitted here even if it means relaxing normal academic standards of admission .... ①②③④

Any institution with a substantial number of black students should offer a program of Black Studies if they wish it ..... ①②③④

Any special academic program for black students should be administered and controlled by black people ..... ①②③④

Undergraduate education in America would be improved if:

a) All courses were elective ..... ①②③④

b) Grades were abolished ..... ①②③④

c) Course work were more relevant to contemporary life and problems ..... ①②③④

d) More attention were paid to the emotional growth of students .. ①②③④

e) Students were required to spend a year in community service at home or abroad .... ①②③④

f) Colleges and universities were governed completely by their faculty and students ..... ①②③④

g) There were less emphasis on specialized training and more on broad liberal education ..... ①②③④

10. For each of these areas, should present academic standards in your institution (a,b) and your graduate department (c,d) be--
(Mark one in each row)

1. Much higher
2. Somewhat higher
3. Left as they are
4. Somewhat lower
5. Much lower
6. No graduate department

a) Undergraduate admissions .. ①②③④⑤

b) Bachelor's degrees ..... ①②③④⑤

c) Graduate admissions ..... ①②③④⑤⑥

d) Advanced degrees ..... ①②③④⑤⑥

11. Do you feel that the administration of your department* is:

Very autocratic ..... ○

Somewhat autocratic ..... ○

Somewhat democratic ..... ○

Very democratic ..... ○

*Here and hereafter, if you have a joint appointment, answer for your main department. If your institution has no departments, answer for the equivalent administrative unit (e.g., division for junior colleges).

12. Is the chairman of your department appointed for a fixed short term (3 years or less) or for a long or indefinite period?

Long/Indefinite... ○ Short term..... ○

13. Roughly how many regular members (at the rank of instructor or above) does your department have this year?

3 or fewer	○	16 - 20	○
4 - 5	○	21 - 25	○
6 - 7	○	26 - 30	○
8 - 10	○	31 - 40	○
11 - 15	○	41 or more	○

14. How much has your department changed in size in the last 3 years? Is it:

Much larger ..... ○

Somewhat larger ..... ○

About the same ..... ○

Smaller ..... ○

15a Do you think your department is now

Too big ..... ○

About right ..... ○

Too small ..... ○

b Do you think your institution is now

Too big ..... ○

About right ..... ○

Too small ..... ○

16. How active are you (a) in your own department's affairs? (b) in the faculty government of your institution (committee memberships, etc,)?
(Mark one in each column)

	Department	Institution
Much more than average	○	○
Somewhat more than average	○	○
About average	○	○
Somewhat less than average	○	○
Much less than average	○	○

17. How much opportunity do you feel you have to influence the policies (a) of your department? (b) of your institution?

(Mark one in each column)

	Department	Institution
A great deal	O	O
Quite a bit	O	O
Some	O	O
None	O	O

18. How many of the people you see socially are:

(a) members of the faculty here?

Almost all ..... O Some ..... O
Most ..... O Almost none .. O
About half ..... O

(b) members of your department?

Almost all ..... O Some ..... O
Most ..... O Almost none .. O
About half ..... O

19. What do you think of the emergence of radical student activism in recent years?

Unreservedly approve ..... O
Approve with reservations ..... O
Disapprove with reservations ..... O
Unreservedly disapprove ..... O

20. With respect to the student revolt at Columbia last year, were you in sympathy with

the students' aims and their methods .... O
their aims but not their methods ..... O
neither their aims nor their methods ..... O
I don't know enough about it to judge .... O

21. Have any of your children been active in civil rights, anti-Vietnam, or other demonstrations?

Yes ..... O
None active ..... O
None of that age ..... O

22. Has your campus experienced any student protests or demonstrations during the current academic year?

Yes ... O No ... O (if no, skip to No. 25)

23. How would you characterize your attitude toward the most recent demonstration?

Approved of the demonstrators aims and methods ..... O
Approved of their aims but not their methods ..... O
Disapproved of their aims ..... O
Uncertain or mixed feelings ..... O
Indifferent ..... O

24. What was your role in this demonstration? (Mark all that apply)

Helped to plan, organize, or lead the protest ..... O
Joined in active protest with the demonstrators ..... O
Openly supported the goals of the protestors ..... O
Openly opposed the goals of the protestors .. O
Tried to mediate in the protest ..... O
Was not involved actively in any way ..... O

25. What effect have student demonstrations (on your campus or elsewhere) had on each of the following? (Mark one in each row)

1. Very favorable
2. Fairly favorable
3. Fairly harmful
4. Very harmful
5. No effect

	1	2	3	4	5
Your research	①	②	③	④	⑤
Your teaching	①	②	③	④	⑤
Your relations with departmental colleagues	①	②	③	④	⑤
Your relations with other colleagues	①	②	③	④	⑤
Your relations with students	①	②	③	④	⑤
Your view of your campus administration	①	②	③	④	⑤
Your institution's relations with the local community	①	②	③	④	⑤

26a. What role do you believe undergraduates should play in decisions on the following?

1. Control
2. Voting power on committees
3. Formal consultation
4. Informal consultation
5. Little or no role

	1	2	3	4	5
Faculty appointment and promotion	①	②	③	④	⑤
Undergraduate admissions policy	①	②	③	④	⑤
Provision and content of courses	①	②	③	④	⑤
Student discipline	①	②	③	④	⑤
Bachelor's degree requirements	①	②	③	④	⑤

b. What role do you believe graduate students should play in decisions on the following?

	1	2	3	4	5
Faculty appointment and promotion	①	②	③	④	⑤
Departmental graduate admissions policy	①	②	③	④	⑤
Provision and content of graduate courses	①	②	③	④	⑤
Student discipline	①	②	③	④	⑤
Advanced degree requirements	①	②	③	④	⑤

27. Please indicate your agreement or disagreement with each of the following statements.

1. Strongly agree
2. Agree with reservations
3. Disagree with reservations
4. Strongly disagree

The normal academic requirements should be relaxed in appointing members of minority groups to the faculty here ..... ①②③④
Opportunities for higher education should be available to all high school graduates who want it ..... ①②③④
Most American colleges and universities are racist whether they mean to be or not ..... ①②③④
Public colleges and universities must be more responsive to public demands than are private institutions ..... ①②③④
Junior faculty members have too little say in the running of my department ..... ①②③④
A small group of senior professors has disproportionate power in decision-making in this institution. ①②③④
This institution would be better off with fewer administrators ..... ①②③④
There should be faculty representation on the governing board of this institution ..... ①②③④
Trustees' only responsibilities should be to raise money and gain community support ..... ①②③④
The administration here has taken a clear stand in support of academic freedom ..... ①②③④
Faculty unions have a divisive effect on academic life ..... ①②③④
Teaching assistants' unions have a divisive effect on academic life ..... ①②③④
Faculty members should be more militant in defending their interests ..... ①②③④
Collective bargaining by faculty members has no place in a college or university ..... ①②③④
Most rules governing student behavior here are sensible ..... ①②③④
Campus rules here are generally administered in a reasonable way. ①②③④
Undergraduates known to use marijuana regularly should be suspended or dismissed ..... ①②③④
Political activities by students have no place on a college campus ①②③④

27 Continued.

Student demonstrations have no place on a college campus ..... ①②③④
Students who disrupt the functioning of a college should be expelled or suspended ..... ①②③④
Most campus demonstrations are created by far left groups trying to cause trouble ..... ①②③④
College officials have the right to regulate student behavior off campus ..... ①②③④
Respect for the academic profession has declined over the past 20 years. ①②③④
A student's grades should not be revealed to anyone off campus without his consent ..... ①②③④
Faculty members should be free on campus to advocate violent resistance to public authority ..... ①②③④
Faculty members should be free to present in class any idea that they consider relevant ..... ①②③④
Campus disruptions by militant students are a threat to academic freedom ..... ①②③④

28. Have you known of a case here within the past two years in which a man's politics affected his chances for retention or promotion?

I know definitely of a case ..... O
I've heard of a case ..... O
I don't know of a case ..... O
I'm sure it hasn't happened ..... O

29. In recent years, have you ever felt intimidated in your classes by students with strong political or racial views?

Yes .... O No ..... O

30. In what year did you obtain your highest degree?

1928 or before .. O	1949-1953 ..... O
1929-1933 ..... O	1954-1958 ..... O
1934-1938 ..... O	1959-1963 ..... O
1939-1943 ..... O	1964-1966 ..... O
1944-1948 ..... O	1967 or later .... O

31. How many years elapsed between your obtaining your bachelor's degree and your highest degree?

No degree higher than bachelor's ..... O
I am still working for a higher degree ..... O
1 - 2 years ..... O
3 - 4 years ..... O
5 - 7 years ..... O
8 - 10 years ..... O
11 - 15 years ..... O
Over 15 years ..... O

32. On the following list, please mark

1. (If any) the degree(s) for which you are currently working
2. All degrees that you have earned
3. All degrees you have earned at this institution

	Working Toward	Now hold	Earned here
Less than Bachelor's (A.A., etc.)	①	②	③
Undergraduate Bachelor's	①	②	③
First professional law degree	①	②	③
First professional medical degree (e.g. M.D., D.D.S.)	①	②	③
Other first professional beyond undergraduate bachelor's	①	②	③
Master's (except first professional)	①	②	③
Doctor of Arts or equivalent for doctorate degree without dissertation	①	②	③
Ph.D	①	②	③
Ed.D	①	②	③
Other doctorate (except first professional)	①	②	③
None	①	②	③

33. From the following list, mark one subject in each column; mark the most appropriate fine categories, if applicable; where your precise field does not appear, mark the most similar category.

1. Undergraduate major
2. Highest postgraduate degree
3. Present principal teaching field
4. Present primary field of research, scholarship, creativity
5. Department* of teaching appointment

	①	②	③	④	⑤
NONE	①	②	③	④	⑤
Agriculture and/or Forestry	①	②	③	④	⑤
Architecture and/or Design	①	②	③	④	⑤
Biological Sciences (General Biology)	①	②	③	④	⑤
Bacteriology, Molecular biology, Virology, Microbiology	①	②	③	④	⑤
Biochemistry	①	②	③	④	⑤
General Botany	①	②	③	④	⑤
Physiology, Anatomy	①	②	③	④	⑤
General Zoology	①	②	③	④	⑤
Other Biological Sciences	①	②	③	④	⑤
Business, Commerce and Management	①	②	③	④	⑤
Education	①	②	③	④	⑤
Elementary and/or Secondary	①	②	③	④	⑤
Foundations	①	②	③	④	⑤
Educational Psychology and Counseling	①	②	③	④	⑤
Educational Administration	①	②	③	④	⑤
Other Education fields	①	②	③	④	⑤
Engineering	①	②	③	④	⑤
Chemical	①	②	③	④	⑤
Civil	①	②	③	④	⑤
Electrical	①	②	③	④	⑤
Mechanical	①	②	③	④	⑤
Other Engineering fields	①	②	③	④	⑤
Fine Arts	①	②	③	④	⑤
Art	①	②	③	④	⑤
Dramatics and Speech	①	②	③	④	⑤
Music	①	②	③	④	⑤
Other Fine Arts	①	②	③	④	⑤
Geography	①	②	③	④	⑤
Health Fields	①	②	③	④	⑤
Medicine	①	②	③	④	⑤
Nursing	①	②	③	④	⑤
Other Health fields	①	②	③	④	⑤
Home Economics	①	②	③	④	⑤
Humanities	①	②	③	④	⑤
English language & literature	①	②	③	④	⑤
Foreign languages & literature	①	②	③	④	⑤
French	①	②	③	④	⑤
German	①	②	③	④	⑤
Spanish	①	②	③	④	⑤
Other foreign languages (including linguistics)	①	②	③	④	⑤
History	①	②	③	④	⑤
Philosophy	①	②	③	④	⑤
Religion & Theology	①	②	③	④	⑤
Other Humanities fields	①	②	③	④	⑤
Industrial Arts	①	②	③	④	⑤
Journalism	①	②	③	④	⑤
Law	①	②	③	④	⑤
Library Science	①	②	③	④	⑤
Mathematics and Statistics	①	②	③	④	⑤
Physical & Health Education	①	②	③	④	⑤
Physical Sciences	①	②	③	④	⑤
Chemistry	①	②	③	④	⑤
Earth Sciences (incl. Geology)	①	②	③	④	⑤
Physics	①	②	③	④	⑤
Other Physical Sciences	①	②	③	④	⑤
Psychology	①	②	③	④	⑤
Clinical	①	②	③	④	⑤
Experimental	①	②	③	④	⑤
Social	①	②	③	④	⑤
Counseling and Guidance	①	②	③	④	⑤
Other Psychology fields	①	②	③	④	⑤
Social Sciences	①	②	③	④	⑤
Anthropology & Archaeology	①	②	③	④	⑤
Economics	①	②	③	④	⑤
Political Science, Government	①	②	③	④	⑤
Sociology	①	②	③	④	⑤
Other Social Sciences	①	②	③	④	⑤
Social Work, Social Welfare	①	②	③	④	⑤
ALL OTHER FIELDS	①	②	③	④	⑤

* Mark main department, if you have a joint appointment.

34. On the following list of large American universities, mark one in each column; if the names of your institutions do not appear, mark appropriate "other" categories.

1. Bachelor's degree
2. Highest degree
3. First regular teaching job

	1	2	3
NONE or not appropriate	①	②	③
Boston University	①	②	③
Brown University, R.I.	①	②	③
California Institute of Technology	①	②	③
California, University of, at Berkeley	①	②	③
California, University of, at Los Angeles	①	②	③
Carnegie Institute of Technology, Pa.	①	②	③
Catholic University of America, D.C.	①	②	③
Chicago, University of	①	②	③
Colorado, University of	①	②	③
Columbia University Teachers' College, N.Y.	①	②	③
Columbia University, N.Y.	①	②	③
Cornell University, N.Y.	①	②	③
Duke University, N.C.	①	②	③
Florida, University of	①	②	③
Fordham University, N.Y.	①	②	③
Harvard University, Mass	①	②	③
Illinois, University of	①	②	③
Indiana University at Bloomington	①	②	③
Iowa State University	①	②	③
Iowa, University of	①	②	③
Johns Hopkins University	①	②	③
Kansas, University of	①	②	③
Louisiana State University	①	②	③
Maryland, University of	①	②	③
Massachusetts Instutute of Technology	①	②	③
Michigan State University	①	②	③
Michigan, University of	①	②	③
Minnesota, University of	①	②	③
Missouri, University of, at Columbia	①	②	③
Nebraska, University of	①	②	③
New York University	①	②	③
North Carolina, University of	①	②	③
Northwestern University, Ill.	①	②	③
Notre Dame University, Ind	①	②	③
Ohio State University	①	②	③
Oklahoma, University of	①	②	③
Oregon State University	①	②	③
Oregon, University of	①	②	③
Pennsylvania State University	①	②	③
Pennsylvania, University of	①	②	③
Pittsburgh, University of	①	②	③
Princeton University, N.J.	①	②	③
Purdue University	①	②	③
Rochester, University of	①	②	③
Rutgers University, N.J.	①	②	③
Southern California, University of	①	②	③
Stanford University, Calif.	①	②	③

34 Continued

	1	2	3
Syracuse University, N.Y.	①	②	③
Texas, University of	①	②	③
Utah, University of	①	②	③
Virginia, University of	①	②	③
Washington University, Mo.	①	②	③
Washington, University of, Wash	①	②	③
Western Reserve University, Ohio	①	②	③
Wisconsin, University of	①	②	③
Yale University, Conn	①	②	③
Other private Ph.D.-granting university	①	②	③
Other state Ph.D.-granting university	①	②	③
Other private college (no Ph.D. program)	①	②	③
Other public college (no Ph.D. program)	①	②	③
A foreign institution	①	②	③
A junior or community college	①	②	③

35. How long have you been employed (beyond the level of teaching or research assistant):

a. in colleges or universities?

1 year or less	○	10-14 years	○
2-3 years	○	15-19 years	○
4-6 years	○	20-29 years	○
7-9 years	○	30 years or more	○

b. at this institution?

1 year or less	○	10-14 years	○
2-3 years	○	15-19 years	○
4-6 years	○	20-29 years	○
7-9 years	○	30 years or more	○

36. At how many different colleges or universities have you been employed full-time (beyond the level of teaching or research assistant)?

None	○	Four	○
One	○	Five	○
Two	○	Six	○
Three	○	Seven or more	○

37. Comparing yourself with other academic men of your age and qualifications, how successful do you consider yourself in your career?

- Very successful ○
- Fairly successful ○
- Fairly unsuccessful ○
- Very unsuccessful ○

38. In general, how do you feel about this institution?

- It is a very good place for me ○
- It is fairly good for me ○
- It is not the place for me ○

39. Do you think you could be equally or more satisfied with life in any other college or university?

- Definitely yes ..... O
- Probably yes ..... O
- Probably no ..... O
- Definitely no ..... O

40. If you were to begin your career again, would you still want to be a college professor?

- Definitely yes ..... O
- Probably yes ..... O
- Probably no ..... O
- Definitely no ..... O

41. (a) Mark all types of work that you have engaged in for a year or more since earning your bachelor's degree (not counting part-time work while in graduate school). (b) What were you doing immediately prior to taking a job at this institution? (Mark one)

	Have Done	Did Last
Teaching in a university	O	O
Teaching in a 4-year college	O	O
Teaching in a junior or community college	O	O
Full-time non-teaching research position in a college or university	O	O
Post-doctoral fellowship or traineeship in a university	O	O
Full-time college or university administration	O	O
Teaching or administration in an elementary or secondary school	O	O
Research and development outside educational institutions	O	O
Executive or administrative post outside educational institutions	O	O
Other professional position	O	O
Student	O	O
Other	O	O

42. Please indicate your agreement or disagreement with each of the following statements.

1. Strongly agree
2. Agree with reservations
3. Disagree with reservations
4. Strongly disagree

(1) (2) (3) (4)

My field is too research oriented ..1234
I prefer teaching courses which focus on limited specialties to those which cover wide varieties of material 1234

42 Continued

I consider myself an intellectual 1234
I hardly ever get the time to give a piece of work the attention it deserves 1234
I tend to subordinate all aspects of my life to my work 1234
A man's teaching and research inevitably reflect his political values 1234
My commitments to different aspects of my job are the source of considerable personal strain 1234
I am in frequent communication with people in my own academic specialty in other institutions 1234
Many of the highest-paid university professors get where they are by being "operators", rather than by their scholarly or scientific contributions 1234
By and large, full-time professional researchers in universities are people who couldn't quite make it on the faculty 1234
Genuine scholarship is threatened in universities by the proliferation of big research centers 1234
The concentration of federal and foundation research grants in the big institutions (Mark each line)
1) is unfair to other institutions 1234
2) is corrupting to the institutions and men that get them 1234
3) contributes substantially to the advancement of knowledge 1234
Many professors in graduate departments exploit their students to advance their own research 1234
In my department it is very difficult for a man to achieve tenure if he does not publish 1234
Teaching effectiveness, not publications, should be the primary criterion for promotion of faculty 1234
Faculty promotions should be based in part on formal student evaluations of their teachers 1234
A professor at a junior college or state college ought to get the same pay as a university professor of equal seniority 1234
Classified weapons research is a legitimate activity on college and university campuses 1234
Big contract research has become more a source of money and prestige for researchers than an effective way of advancing knowledge 1234

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43. Given the following four possible activities of academic men, please mark the first three in order:
1. According to their importance to you personally
2. According to your understanding of what your institution expects of you
(Mark one in each column)

	Importance to Me			Institution's Expectation		
	First	Second	Third	First	Second	Third
Provide undergraduates with a broad liberal education	O	O	O	O	O	O
Prepare undergraduates for their chosen occupation	O	O	O	O	O	O
Train graduate or professional students	O	O	O	O	O	O
Engage in research	O	O	O	O	O	O

44. Within the post two years have you received an offer of another job or a serious inquiry about your availability for another position?
- An offer ..... O
- Not an offer, but a serious inquiry ..... O
- Neither ..... O

45. In a normal week, what proportion of your work time is devoted to the following activities:

a. Administration (departmental or institutional, including committee work.)

None ..... O	1-10% ... O	41-60% ..... O
	11-20% ... O	61-80% ..... O
	21-40% ... O	81-100% ..... O

b. Consulting (with or without pay)

None ..... O	1-10% .... O	41-60% ..... O
	11-20% ... O	61-80% ..... O
	21-40% ... O	81-100% ..... O

c. Outside professional practice

None ..... O	1-10% .... O	41-60% ..... O
	11-20% ... O	61-80% ..... O
	21-40% ... O	81-100% ..... O

46. To how many academic or professional journals do you subscribe?

None ..... O	3-4 ..... O	11-20..... O
1-2..... O	5-10 ..... O	More than 20 . O

47. How many articles have you published in academic or professional journals?

None ..... O	3-4 ..... O	11-20..... O
1-2..... O	5-10 ..... O	More than 20 . O

48. How many books or monographs have you published or edited, alone or in collaboration?

None ..... O	3-4 ..... O
1-2..... O	5 or more ..... O

49. How many of your professional writings have been published or accepted for publication in the last two years?

None .. O	3-4 ..... O	More than 10 . O
1-2..... O	5-10..... O	

50. Do your interests lie primarily in teaching or in research?
- Very heavily in research ..... O
- In both, but leaning toward research ..... O
- In both, but leaning toward teaching ..... O
- Very heavily in teaching ..... O

51. Are you currently engaged in any scholarly or research work which you expect to lead to publication?
Yes.... O No.... O (If no, skip to No. 55)

52. Which of these statements applies to your current major piece of research or scholarship?
- I am essentially working alone ..... O
- I am working with one or two colleagues .... O
- I am a member of a larger group ..... O

53. Are any of the following working with you on any research project? (Mark all that apply)
- Graduate research assistants ..... O
- Post-doctoral fellows or trainees ..... O
- Full-time professional level research personnel ..... O

54. In the past 12 months, did you receive research support from: (Mark all sources that apply)
- Institutional or departmental funds ..... O
- Federal agencies ..... O
- State or local government agencies ..... O
- Private foundations ..... O
- Private industry ..... O
- Other ..... O
- None ..... O

55. During the past two years, have you served as a paid consultant to: (Mark all that apply)
- Local business, government or schools ..... O
- A national corporation ..... O
- A non-profit foundation ..... O
- Federal or foreign government ..... O
- A research project ..... O
- Other ..... O
- No paid consulting ..... O

56. Are you a member of any of the following organizations? (Mark all that apply)

- American Association of University Professors ..... ○
- American Federation of Teachers ..... ○
- A National Education Association affiliate ..... ○
- A local or state association or union of college teachers ..... ○
- A state, county or city employees' association or other association not confined to college teachers ..... ○
- An association limited to teachers at your institution (other than the Academic Senate) ..... ○

57. Do you feel that there are circumstances in which a strike would be a legitimate means of collective action:

a. for faculty members
- Definitely yes ..... ○
- Probably yes ..... ○
- Probably not ..... ○
- Definitely not ..... ○

b. for teaching assistants
- Definitely yes ..... ○
- Probably yes ..... ○
- Probably not ..... ○
- Definitely not ..... ○

58. Please indicate your agreement or disagreement with each of the following statements.

1. Strongly agree
2. Agree with reservations
3. Disagree with reservations
4. Strongly disagree

- Where de facto segregation exists, black people should be assured control over their own schools .. ①②③④
- Racial integration of the public elementary schools should be achieved even if it requires busing ..... ①②③④
- Meaningful social change cannot be achieved through traditional American politics ..... ①②③④
- With a few exceptions, the Chicago police acted reasonably in curbing the demonstrations at the Democratic National Convention ..... ①②③④
- Hippies represent an important criticism of American culture ... ①②③④
- Marijuana should be legalized ... ①②③④

58 Continued
- Some form of Communist regime is probably necessary for progress in underdeveloped countries ..... ①②③④
- In the USA today there can be no justification for using violence to achieve political goals ..... ①②③④
- The main cause of Negro riots in the cities is white racism ..... ①②③④

59. Which of these positions on Vietnam is closest to your own?
- The U.S. should withdraw from Vietnam immediately ..... ○
- The U.S. should reduce its involvement, and encourage the emergence of a coalition government in South Vietnam ..... ○
- The U.S. should try to reduce its involvement, while being sure to prevent a Communist takeover in the South ..... ○
- The U.S. should commit whatever forces are necessary to defeat the Communists ○

60. How active were you in last year's political campaigns:

a. before the conventions?
- Very active ..... ○
- Fairly active ..... ○
- Not very active ..... ○
- Not active at all ..... ○

b. after the conventions?
- Very active ..... ○
- Fairly active ..... ○
- Not very active ..... ○
- Not active at all ..... ○

61.
1. Left
2. Liberal
3. Middle-of-the-road
4. Moderately conservative
5. Strongly conservative

a. How would you characterize yourself politically at the present time? ..... ①②③④⑤

b. What were your politics as a college senior? ..... ①②③④⑤

c. What were your father's politics while you were growing up? ..... ①②③④⑤

d. How would you describe the prevailing political sentiments of undergraduates here? ..... ①②③④⑤

62. Whom would you have favored:
a. At the Republican convention:
Nixon.....O Rockefeller.....O

b. At the Democratic convention:
Humphrey.....O McCarthy.....O

63. Whom did you vote for in November?
Humphrey...O Another candidate.....O
Nixon.....O Did not vote.....O
Wallace ....O No answer .....O

64. Whom did you vote for in 1964?
Johnson....O Another candidate.....O
Goldwater ..O Did not vote.....O
No answer .....O

	Yes	No
65. a. Are you a United States citizen?	O	O
b. IF YES: Have you ever been a citizen of another country?	O	O
66. Have you ever been a member of a student political club or group?	O	O
67. Have you ever attended a junior or community college as a student?	O	O

68. During your career as a graduate student:

	Yes	No
Were you ever a teaching assistant?	O	O
Were you ever a research assistant?	O	O
Were you ever awarded a fellowship or scholarship worth $1,000 per year or more?	O	O
Was there a faculty member who acted as your "sponsor" when you were looking for your first job?	O	O

	Yes	No
69. Do you have a working association with any research institute or center within your institution?	O	O
70. In your department, are decisions other than personnel matters normally made by the vote of the whole department, including junior members?	O	O
71. a. Are you now chairman or head of your department?	O	O
b. IF NO: Have you ever been chairman or head of a university or college department?	O	O
72. a. Do you hold a full-time administrative position outside your own department?	O	O
b. IF NO: Do you hold a part-time administrative position outside your own department?	O	O
73. a. Are you now negotiating for, or have you already found or accepted, another position for the fall of 1969?	O	O
b. IF NO: Are you looking for another position?	O	O
c. IF NO: Would you seriously consider a reasonable offer of another position?	O	O
74. Would you describe yourself as conservative in your religious beliefs?	O	O

75. How would you rate each of the following?

1. Excellent
2. Good
3. Fair
4. Poor

(1)(2)(3)(4)

Your own salary .....(1)(2)(3)(4)
Your own graduate education .....(1)(2)(3)(4)
The academic reputation of your department outside your institution..(1)(2)(3)(4)
At your institution--
The intellectual environment .....(1)(2)(3)(4)
Faculty salary levels.....(1)(2)(3)(4)
Teaching load.....(1)(2)(3)(4)
Ratio of teaching faculty to students(1)(2)(3)(4)
The administration.....(1)(2)(3)(4)
The effectiveness of your campus senate or faculty council .....(1)(2)(3)(4)
General research resources (e.g., library, labs, computers, space, etc.) .....(1)(2)(3)(4)
Availability of research funds from all sources.....(1)(2)(3)(4)
Cultural resources .....(1)(2)(3)(4)
In your department--
The intellectual environment .....(1)(2)(3)(4)
Personal relations among faculty...(1)(2)(3)(4)
Faculty/student relations .....(1)(2)(3)(4)

76. How often, on average, do you

1. Once a week or more
2. Two or three times a month
3. About once a month
4. A few times a year
5. Once a year or less

(1)(2)(3)(4)(5)

See undergraduates informally (for meals, parties, informal gatherings)?.....(1)(2)(3)(4)(5)
Spend 4 hours uninterruptedly on professional reading, writing or research?.....(1)(2)(3)(4)(5)
Attend:
1. A religious service .....(1)(2)(3)(4)(5)
2. A concert .....(1)(2)(3)(4)(5)
3. An "art" film .....(1)(2)(3)(4)(5)
4. A play .....(1)(2)(3)(4)(5)
5. An art exhibition .....(1)(2)(3)(4)(5)
6. An athletic event.....(1)(2)(3)(4)(5)

77. Do you consider yourself
- Deeply religious ○
- Moderately religious ○
- Largely indifferent to religion ○
- Basically opposed to religion ○

78. a. In what religion were you raised?

Protestant	○	Other	○
Catholic	○	None	○
Jewish	○	No answer	○

b. What is your present religion?

Protestant	○	Other	○
Catholic	○	None	○
Jewish	○	No answer	○

79. What is the highest level of formal education reached by your spouse? Your father? Your mother? (Mark one in each column)

	Spouse	Father	Mother
No spouse	○		
8th grade or less	○	○	○
Some high school	○	○	○
Completed high school	○	○	○
Some college	○	○	○
Graduated from college	○	○	○
Attended graduate or professional school	○	○	○
Attained advanced degree	○	○	○

80. What is (was) your father's principal occupation? (Mark one)
- College or university teaching, research or administration ○
- Elementary or secondary school teaching or administration ○
- Other professional ○
- Managerial, administrative, semiprofessional ○
- Owner, large business ○
- Owner, small business ○
- Other white collar: clerical, retail sales ○
- Skilled wage worker ○
- Semi- and unskilled wage worker, farm laborer ○
- Armed forces ○
- Farm owner or manager ○

81. What is your basic institutional salary, before tax and deductions, for the current academic year?

Below $7,000	○	$17,000-$19,999	○
$7,000-$9,999	○	$20,000-$24,999	○
$10,000-$11,999	○	$25,000-$29,999	○
$12,000-$13,999	○	$30,000 and over	○
$14,000-$16,999	○		

82. Is this based on
9/10 months ○ 11/12 months ○

83. In recent years, roughly how much have you earned over and above your basic salary? (Please estimate as a percentage of your basic salary.)

0%	○	Under 10%	○
		10%-19%	○
		20%-29%	○
		30%-39%	○
		40%-49%	○
		50% and over	○

84. What are the two largest sources of your supplementary earnings? (Mark one in each column)

	Largest	Second Largest
Summer teaching	○	○
Teaching elsewhere (extension, etc.) other than summer teaching	○	○
Consulting	○	○
Private practice	○	○
Royalties (from publications, patents)	○	○
Fees for speeches and lectures	○	○
Research salaries and payments	○	○
Other	○	○
None	○	○

85. What is your marital status?
- Married (once only) ○
- Married (remarried) ○
- Separated ○
- Single (never married) ○
- Single (divorced) ○
- Single (widowed) ○

86. How many dependant children do you have?

None	○	Two	○
One	○	Three or more	○

87. What is your date of birth?

1903 or before	○	1924-1928	○
1904-1908	○	1929-1933	○
1909-1913	○	1934-1938	○
1914-1918	○	1939-1943	○
1919-1923	○	1944 or later	○

88. Your sex: Male ○ Female ○

89. Your race:
- White/Caucasian ○
- Black/Negro/Afro-American ○
- Oriental ○
- Other ○

If you have comments on any of the issues covered in this questionnaire please send them under separate cover to:

Survey of Higher Education
The Carnegie Commission on Higher Education
National Computer Systems Processing Center
1015 South Sixth Street
Minneapolis, Minnesota 55415

THANK YOU FOR YOUR COOPERATION

Appendix IV. Variables Used in The Data Analysis
A. Means and Standard Deviations

Variable	Mean	Standard Deviation	Cases
Helping Others 2	2.77	.76	2590
Helping Others 1	2.81	.76	2628
Peer Ties	1.29	.15	2580
Fac Contact	2.10	1.39	2544
Administration 2	.57	.83	2578
Administration 1	.73	.90	2616
Finance 2	3.92	1.47	2578
Creativity 2	3.48	1.56	2592
Eminence 2	4.67	1.55	2587
Finance 1	4.77	1.53	2626
Creativity 1	3.37	1.43	2620
Eminence 1	5.47	1.33	2622
Fac Liberal Ed	2.70	.65	2377
Fac Vocational Ed	2.46	1.24	2331
Stud Liberal Ed	2.53	.39	2306
Stud Vocational Ed	4.10	.68	2306
Dept Administration	.59	.35	2193
Dept Finance	3.89	.64	2306
Dept Creativity	3.50	.82	2306
Dept Eminence	4.66	.59	2306
Dept Helping Others	1.82	.78	2652

Appendix IV. Variables Used in The Data Analysis
B. Zero-order Correlation Matrix

	Helping Others 2	Helping Others 1	Peer Ties	Fac Contact	Administration 2	Administration 1	Finance 2	Creativity 2	Eminence 2	Finance 1	Creativity 1	Eminence 1	Fac Liberal Ed	Fac Vocational Ed	Stud Liberal Ed	Stud Vocational Ed	Dept Administration	Dept Finance	Dept Creativity	Dept Eminence
Helping Others 2	-																			
Helping Others 1	.31	-																		
Peer Ties	-.02	-.01	-																	
Fac Contact	.11	.10	.11	-																
Administration 2	.18	.04	.03	.11	-															
Administration 1	.11	.21	.03	.13	.37	-														
Finance 2	-.08	-.07	.03	.02	.47	.25	-													
Creativity 2	.19	.11	-.02	.16	-.08	-.04	-.10	-												
Eminence 2	.06	-.00	.07	.20	.26	.18	.24	.11	-											
Finance 1	-.05	-.01	.02	-.01	.26	.34	.47	-.04	.19	-										
Creativity 1	.13	.16	-.02	.14	-.05	.01	-.09	.56	.08	-.07	-									
Eminence 1	.03	.05	.05	.06	.16	.26	.15	.05	.31	.22	.03	-								
Fac Liberal Ed	.16	.09	-.06	.09	-.07	.02	-.13	.22	-.07	-.07	.19	-.05	-							
Fac Vocational Ed	-.16	-.11	.04	-.08	.03	-.03	.10	-.22	.07	.07	-.22	.06	-.24	-						
Stud Liberal Ed	.11	.08	-.05	.14	-.03	.06	-.10	.24	-.03	-.06	.22	-.04	.44	-.45	-					
Stud Vocational Ed	-.09	-.01	.08	-.08	-.01	-.09	.08	-.16	.09	.05	-.17	.04	-.43	.54	-.65	-				
Dept Administration	-.03	-.04	.03	.03	.42	.28	.30	-.23	.08	.20	-.20	.08	-.17	.07	-.06	.01	-			
Dept Finance	-.12	-.09	.07	.00	.31	.22	.44	-.25	.13	.29	-.26	.09	-.33	.26	-.25	.23	.70	-		
Dept Creativity	.17	.12	-.02	.10	-.19	-.09	-.20	.51	-.05	-.15	.41	-.07	.42	-.46	.45	-.29	-.45	-.49	-	
Dept Eminence	-.04	-.03	.07	.05	.09	.09	.23	-.07	.38	.15	-.07	.12	-.19	.21	-.08	.27	.21	.33	-.19	-
Dept Helping Others	.11	.08	.04	.08	-.04	-.01	-.09	.12	-.04	-.09	.13	-.03	.13	-.23	.41	-.38	-.10	-.32	.31	-.19

Appendix V. Raw Score Means and Standard Deviations, Adjusted Means for Males' Senior Occupational Values by Analysis of Covariance Treatment Groups Based on Interpersonal Interaction and Departmental Liberal Education Norms

Treatment Groups: Departmental Norms				Socialization Mechanisms				Cell n		Male Students' Senior Values: Unadjusted means and standard deviations					Adjusted Means				
Faculty Liberal Ed		Student Liberal Ed		Faculty Contact		Student Peer Ties				Helping Others	Administration	Finance	Creativity	Eminence	Helping Others	Administration	Finance	Creativity	Eminence
High	Low	High	Low	High	Low	High	Low												
	X		X		X		X	131	Mean =	2.53	.51	4.15	2.71	4.66	2.54	.52	4.15	2.87	4.68
									S.D. =	.77	.74	1.48	1.21	1.57					
	X		X		X	X		248		2.44	.73	4.21	2.71	4.86	2.46	.76	4.21	2.88	4.87
										.79	1.22	1.43	1.16	1.46					
	X		X	X			X	53		2.51	.75	4.40	2.89	5.15	2.50	.77	4.39	3.01	5.14
										.82	.98	1.36	1.31	1.59					
	X		X	X		X		152		2.52	1.11	4.54	2.95	5.18	2.53	1.10	4.57	3.04	5.14
										.84	1.45	1.47	1.41	1.56					
	X	X			X		X	43		2.56	.58	4.12	3.67	4.63	2.58	.60	4.18	3.73	4.66
										.83	.79	1.68	1.63	1.54					
	X	X			X	X		52		2.63	.65	3.98	3.31	4.98	2.68	.67	3.92	3.42	5.02
										.66	.84	1.58	1.53	1.74					
	X	X		X			X	13		2.46	.69	4.31	3.62	5.00	2.38	.68	4.35	3.25	5.00
										.77	.75	1.97	1.56	2.16					
	X	X		X		X		48		2.65	.75	4.42	3.52	5.35	2.63	.75	4.39	3.43	5.33
										.64	.93	1.49	1.24	1.19					
X			X		X		X	39		2.62	1.08	4.36	2.56	4.54	2.59	1.09	4.29	2.61	4.49
										.85	2.08	1.78	.99	1.67					
X			X		X	X		64		2.78	.75	4.13	3.33	4.53	2.80	.71	4.08	3.42	4.59
										.83	1.35	1.61	1.33	1.58					
X			X	X			X	16		3.06	1.00	4.69	3.75	5.00	3.14	.88	4.70	3.49	5.01
										.85	1.10	1.74	2.11	1.15					
X			X	X		X		62		2.95	.92	4.10	3.71	4.95	2.93	.92	4.02	3.63	4.99
										.69	.91	1.63	1.71	1.45					
X		X			X		X	84		2.74	.75	3.99	3.60	4.05	2.72	.74	4.11	3.50	4.12
										.76	1.28	1.62	1.72	1.41					
X		X			X	X		128		2.84	.92	4.13	3.55	4.82	2.82	.91	4.12	3.44	4.81
										.76	1.55	1.58	1.60	1.63					
X		X		X			X	53		2.98	.82	3.87	3.95	4.75	2.92	.79	3.95	3.53	4.78
										.78	1.44	1.63	1.67	1.78					
X		X		X		X		131		2.86	.73	4.19	3.95	5.44	2.83	.72	4.16	3.63	5.33
										.78	.91	1.48	1.65	1.46					

Appendix VI. Raw Score Means and Standard Deviations, Adjusted Means for Females' Senior Occupational Values by Analysis of Covariance Treatment Groups Based on Interpersonal Interaction and Departmental Liberal Education Norms

Treatment Groups: Departmental Norms				Socialization Mechanisms				Cell n		Female Students' Senior Values: Unadjusted means and standard deviations					Adjusted Means				
Faculty Liberal Ed		Student Liberal Ed		Faculty Contact		Student Peer Ties				Helping Others	Administration	Finance	Creativity	Eminence	Helping Others	Administration	Finance	Creativity	Eminence
High	Low	High	Low	High	Low	High	Low												
	X		X		X		X	65	Mean =	2.83	.36	3.27	3.94	4.00	2.87	.38	3.31	3.85	4.03
									S.d. =	.76	1.21	1.28	1.67	1.53					
	X		X		X	X		111		2.79	.41	3.04	3.69	3.71	2.83	.43	3.14	3.63	3.74
										.80	.13	1.13	1.52	1.56					
	X		X	X			X	46		2.98	.57	3.00	4.33	4.43	2.98	.55	2.99	4.42	4.44
										.61	1.41	1.14	1.96	1.56					
	X		X	X		X		92		2.85	.66	3.26	4.05	4.66	2.83	.66	3.24	3.90	4.69
										.88	1.58	1.16	1.63	1.54					
	X	X			X		X	38		2.95	.18	3.39	3.45	3.84	2.92	.18	3.42	3.55	3.91
										.73	.46	1.18	1.22	1.41					
	X	X			X	X		80		2.95	.40	3.46	3.95	4.35	2.95	.41	3.39	3.90	4.38
										.69	1.12	1.26	1.59	1.54					
	X	X		X			X	26		3.08	.19	3.19	5.04	4.65	3.00	.20	3.21	4.92	4.64
										.93	.40	.98	1.84	1.26					
	X	X		X		X		77		3.08	.79	3.64	4.13	4.43	3.03	.78	3.53	4.03	4.33
										.70	1.80	1.44	1.79	1.74					
X			X		X		X	9		3.00	.11	3.00	3.78	3.00	3.03	.13	3.02	3.79	2.79
										.86	.33	1.12	2.11	1.00					
X			X		X	X		9		2.56	.11	3.56	2.78	3.67	2.56	.12	3.69	3.32	3.75
										.53	.33	1.13	.97	1.41					
X			X	X			X	5		2.60	.20	3.20	5.00	4.80	2.86	.19	3.72	3.81	4.56
										.84	.45	1.64	.22	1.92					
X			X	X		X		10		2.80	.60	3.40	3.70	5.40	2.83	.59	3.62	3.82	5.30
										.63	.70	1.08	2.06	1.51					
X		X			X		X	25		2.40	.16	3.52	3.04	3.88	2.46	.15	3.50	3.45	3.79
										.76	.37	1.42	1.17	1.24					
X		X			X	X		45		2.67	.27	3.02	3.02	3.96	2.64	.26	2.99	3.54	4.02
										.77	.62	1.10	1.32	1.43					
X		X		X			X	4		2.50	3.00	4.00	3.75	5.00	2.64	.98	3.80	3.48	4.83
										1.29	.82	1.41	1.50	2.45					
X		X		X		X		24		2.95	.54	3.63	3.17	4.83	2.96	.52	3.62	3.29	4.70
										.81	.93	1.17	1.40	1.37					

Appendix VII. Raw Score Means and Standard Deviations, Adjusted Means for Males' Senior Occupational Values By Analysis of Covariance Treatment Groups Based on Interpersonal Interaction and Departmental Vocational Education Norms

Treatment Groups: Departmental Norms				Socialization Mechanisms				Cell n	Male Students' Senior Values	Unadjusted Means and Standard Deviations					Adjusted Means				
Faculty Vocational		Student Ed Vocational	Ed	Faculty Contact		Student Peer Ties				Helping Others	Administration	Finance	Creativity	Eminence	Helping Others	Administration	Finance	Creativity	Eminence
High	Low	High	Low	High	Low	High	Low												
	X		X		X		X	93	Mean =	2.74	.75	3.97	3.61	4.04	2.71	.73	4.10	3.49	4.08
									S.d. =	.83	1.49	1.68	1.65	1.56					
	X		X		X	X		143		2.77	.86	4.26	3.50	4.70	2.78	.83	4.19	3.43	4.69
										.74	1.47	1.64	1.54	1.62					
	X		X	X			X	43		2.88	.77	4.26	4.23	4.74	2.89	.73	4.22	3.76	4.78
										.70	.97	1.89	1.73	1.77					
	X		X	X		X		160		2.86	.82	4.23	3.79	5.26	2.83	.81	4.16	3.55	5.23
										.73	.96	1.55	1.62	1.50					
	X	X			X		X	38		2.55	.97	4.43	2.89	4.68	2.52	.94	4.47	2.89	4.63
										.89	1.57	1.84	1.64	1.45					
	X	X			X	X		74		2.53	.74	4.12	3.04	5.04	2.54	.75	4.09	3.17	5.02
										.81	1.37	1.47	1.43	1.52					
	X	X		X			X	18		3.00	.94	4.06	3.72	5.28	2.93	.85	4.18	3.52	5.29
										.97	2.15	1.43	1.36	1.78					
	X	X		X		X		51		2.88	1.04	4.22	3.92	4.90	2.86	1.01	4.18	3.83	4.91
										.82	1.44	1.63	1.78	1.19					
X			X		X		X	43		2.44	.63	4.28	2.93	4.21	2.45	.63	4.25	3.14	4.25
										.73	.85	1.53	1.24	1.55					
X			X		X	X		56		2.55	.66	4.13	3.00	4.95	2.58	.66	4.13	3.17	5.04
										.83	.92	1.40	1.40	1.76					
X			X	X			X	20		2.65	.70	4.05	3.25	4.85	2.61	.64	4.00	3.07	4.86
										.99	.86	1.70	1.83	2.06					
X			X	X		X		44		2.68	.66	4.34	3.30	5.48	2.63	.66	4.27	3.27	5.40
										.80	.96	1.64	1.19	1.50					
X		X			X		X	120		2.57	.52	4.10	2.78	4.83	2.57	.56	4.10	2.94	4.88
										.72	.78	1.45	1.27	1.51					
X		X			X	X		199		2.51	.75	4.15	2.71	4.79	2.53	.60	4.17	2.88	4.81
										.81	1.30	1.43	1.15	1.51					
X		X		X			X	54		2.61	.83	4.31	2.93	5.06	2.59	.86	4.30	3.01	5.06
										.83	1.80	1.36	1.39	1.45					
X		X		X		X		136		2.51	1.03	4.52	2.99	5.33	2.53	1.03	4.37	3.07	5.27
										.80	1.30	1.97	1.45	1.53					

Appendix VIII. Raw Score Means and Standard Deviations, Adjusted Means for Females' Senior Occupational Values by Analysis of Covariance Groups Based on Interpersonal Interaction and Departmental Vocational Education Norms

Treatment Groups: Departmental Norms		Socialization Mechanisms				Cell n		Female Students' Senior Values: Unadjusted Means and Standard Deviations					Adjusted Means				
Faculty Vocational Ed	Student Vocational Ed	Faculty Contact		Student Peer Ties				Helping Others	Administration	Finance	Creativity	Eminence	Helping Others	Administration	Finance	Creativity	Eminence
High	Low	High	Low	High	Low	High	Low										
	X		X		X		X	36	Mean =	2.78	.25	3.39	3.58	3.83	2.75	.27	3.38	3.57	3.71
									S.d. =	.68	.55	1.25	1.48	1.36					
	X		X		X	X		54		2.65	.30	3.15	3.07	3.85	2.62	.30	3.16	3.52	3.92
										.76	.66	1.29	1.39	1.35					
	X		X	X			X	8		2.63	.38	2.75	3.38	3.88	2.66	.40	2.89	3.62	3.87
										.52	.74	.71	1.51	1.64					
	X		X	X		X		32		3.16	.36	3.59	3.66	4.75	3.14	.35	3.60	3.68	4.63
										.68	.88	1.46	1.66	1.41					
	X	X			X		X	23		2.78	.39	3.39	3.30	3.39	2.89	.40	3.18	3.24	3.28
										.80	.66	1.16	1.64	1.23					
	X	X			X	X		36		2.61	.36	3.31	2.86	3.61	2.68	.38	3.24	3.16	3.62
										.87	.72	1.14	.96	1.54					
	X	X		X			X	12		3.00	.42	3.50	4.58	4.92	3.05	.40	3.32	4.56	4.96
										.74	.67	1.45	2.15	1.68					
	X	X		X		X		29		2.86	.41	3.34	3.00	4.52	2.83	.40	3.41	3.38	4.51
										.79	.63	1.17	1.34	1.62					
X			X		X		X	39		2.77	.10	3.38	3.41	3.95	2.81	.07	3.53	3.56	4.01
										.84	.38	1.37	1.58	1.43					
X			X		X	X		64		2.92	.36	3.20	3.94	4.39	2.93	.38	3.21	3.76	4.41
										.72	1.20	1.04	1.46	1.54					
X			X	X			X	27		3.04	.30	3.04	4.30	4.33	2.99	.30	3.09	4.39	4.34
										.90	.61	1.29	1.86	1.24					
X			X	X		X		69		2.90	.77	3.64	3.71	4.59	2.90	.77	3.53	3.77	4.56
										.88	1.62	1.31	1.52	1.53					
X		X			X		X	41		2.85	.34	3.17	4.02	4.10	2.85	.37	3.25	4.05	4.23
										.79	1.43	1.26	1.44	1.53					
X		X			X	X		98		2.89	.42	3.15	4.00	3.85	2.91	.43	3.24	3.93	3.89
										.73	1.40	1.23	1.65	1.62					
X		X		X			X	35		3.00	.57	3.26	5.00	4.74	2.98	.55	3.18	4.70	4.66
										.73	1.54	.98	1.89	1.60					
X		X		X		X		76		2.93	.76	3.26	4.62	4.62	2.88	.74	3.23	4.16	4.61
										.77	2.05	1.17	1.78	1.74					

TABLE 18. Male Students' Senior Orientations Toward Helping Others by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Liberal Education Norms - Analysis of Covariance With Freshman Score on Helping Others as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	.06	.11	.74
B. Fac Contact	1	2.81	4.93	.03
A. X B.	1	.16	.28	.60
C. Stud Liberal Ed Norms	1	9.39	16.49	.00
A. X C.	1	.26	.45	.50
B. X C.	1	.33	.58	.45
A. X B. X C.	1	.48	.84	.36
D. Fac Liberal Ed Norms	1	17.17	30.16	.00
A. X D.	1	.13	.23	.63
B. X D.	1	1.93	3.40	.07
A. X B. X D.	1	2.35	4.12	.04
C. X D.	1	.86	1.51	.22
A. X C. X D.	1	.74	1.30	.25
B. X C. X D.	1	.03	.05	.82
A. X B. X C. X D.	1	.10	.18	.67
Adjusted ANOVA error	1302	.57		

TABLE 19. Male Students' Orientations Toward Helping Others by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Vocational Education Norms - Analysis of Covariance With Freshman Score on Helping Others as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	.05	.08	.77
B. Fac Contact	1	3.52	6.04	.01
A. X B.	1	.09	.15	.70
C. Stud Vocational Ed Norms	1	7.22	12.40	.00
A. X C.	1	.46	.79	.37
B. X C.	1	.00	.00	.96
A. X B. X C.	1	.07	.12	.73
D. Fac Vocational Ed Norms	1	6.86	11.79	.00
A. X D.	1	.01	.01	.91
B. X D.	1	2.19	3.77	.05
A. X B. X D.	1	.03	.05	.81
C. X D.	1	.48	.83	.36
A. X C. X D.	1	.19	.32	.57
B. X C. X D.	1	1.52	2.61	.11
A. X B. X C. X D.	1	.00	.00	.99
Adjusted ANOVA error	1279	.58		

TABLE 20. Female Students' Senior Orientations Toward Helping Others by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Liberal Education Norms - Analysis of Covariance With Freshman Score on Helping Others as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	.01	.02	.89
B. Fac Contact	1	2.10	3.76	.05
A. X B.	1	.05	.10	.76
C. Stud Liberal Ed Norms	1	.04	.07	.79
A. X C.	1	.37	.67	.41
B. X C.	1	.61	1.10	.30
A. X B. X C.	1	.23	.41	.52
D. Fac Liberal Ed Norms	1	1.06	1.90	.17
A. X D.	1	.17	.30	.58
B. X D.	1	1.86	3.33	.07
A. X B. X D.	1	1.47	2.64	.10
C. X D.	1	.00	.00	.95
A. X C. X D.	1	.58	1.05	.31
B. X C. X D.	1	.21	.38	.54
A. X B. X C. X D.	1	.79	1.42	.23
Adjusted ANOVA error	656	.56		

TABLE 21. Female Students' Senior Orientations Toward Helping Others by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Vocational Education Norms - Analysis of Covariance With Freshman Score on Helping Others as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	.00	.00	.95
B. Fac Contact	1	1.91	3.45	.06
A. X B.	1	.09	.16	.69
C. Stud Vocational Ed Norms	1	.18	.33	.56
A. X C.	1	1.49	2.69	.10
B. X C.	1	.85	1.54	.22
A. X B. X C.	1	.00	.00	.99
D. Fac Vocational Ed Norms	1	4.20	7.60	.01
A. X D.	1	.05	.10	.76
B. X D.	1	.80	1.45	.23
A. X B. X D.	1	.24	.44	.51
C. X D.	1	.96	1.73	.19
A. X C. X D.	1	1.00	1.81	.18
B. X C. X D.	1	.05	.08	.77
A. X B. X C. X D.	1	.16	.29	.59
Adjusted ANOVA error	650	.55		

TABLE 22. Male Students' Senior Orientations Toward Administrative Responsibility by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Liberal Education Norms - Analysis of Covariance With Freshman Score on Administration as Covariate

	Degree of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	4.86	3.36	.07
B. Fac Contact	1	4.28	2.96	.09
A. X B.	1	.00	.00	.96
C. Stud Liberal Ed Norms	1	1.10	.76	.38
A. X C.	1	.94	.65	.42
B. X C.	1	7.08	4.89	.03
A. X B. X C.	1	1.85	1.28	.26
D. Fac Liberal Ed Norms	1	1.73	1.19	.27
A. X D.	1	5.04	3.48	.06
B. X D.	1	2.52	1.74	.19
A. X B. X D.	1	.04	.03	.86
C. X D.	1	.12	.08	.77
A. X C. X D.	1	3.86	2.67	.10
B. X C. X D.	1	.01	.01	.93
A. X B. X C. X D.	1	.92	.64	.43
Adjusted ANOVA error	1302	1.45		

TABLE 23. Male Students' Senior Orientations Toward Administrative Responsibility by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Vocational Education Norms - Analysis of Covariance With Freshman Score on Administration as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	4.75	3.23	.07
B. Fac Contact	1	3.69	2.51	.11
A. X B.	1	.00	.00	.97
C. Stud Vocational Ed Norms	1	2.16	1.47	.23
A. X C.	1	.73	.49	.48
B. X C.	1	4.11	2.79	.09
A. X B. X C.	1	.03	.02	.88
D. Fac Vocational Ed Norms	1	2.15	1.46	.23
A. X D.	1	.90	.61	.43
B. X D.	1	.14	.10	.76
A. X B. X D.	1	.58	.40	.53
C. X D.	1	.37	.25	.61
A. X C. X D.	1	1.75	1.19	.28
B. X C. X D.	1	.10	.06	.80
A. X B. X C. X D.	1	.58	.39	.53
Adjusted ANOVA error	1279	1.47		

TABLE 24. Female Students' Senior Orientations Toward Administrative Responsibility by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Liberal Education Norms - Analysis of Covariance With Freshman Score on Administration as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	5.34	3.37	.07
B. Fac Contact	1	10.46	6.61	.01
A. X B.	1	.55	.35	.55
C. Stud Liberal Ed Norms	1	1.04	.66	.42
A. X C.	1	1.28	.81	.37
B. X C.	1	.36	.22	.64
A. X B. X C.	1	.10	.06	.80
D. Fac Liberal Ed Norms	1	1.02	.64	.42
A. X D.	1	1.76	1.11	.29
B. X D.	1	1.37	.87	.35
A. X B. X D.	1	.01	.00	.95
C. X D.	1	.29	.18	.67
A. X C. X D.	1	.21	.13	.71
B. X C. X D.	1	.15	.10	.76
A. X B. X C. X D.	1	.01	.01	.94
Adjusted ANOVA error	656	1.58		

TABLE 25. Female Students' Senior Orientations Toward Administrative Responsibility by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Vocational Education Norms - Analysis of Covariance With Freshman Score on Administration as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	5.37	3.37	.07
B. Fac Contact	1	11.00	6.90	.01
A. X B.	1	.59	.37	.54
C. Stud Vocational Ed Norms	1	.56	.35	.55
A. X C.	1	1.31	.82	.36
B. X C.	1	.23	.14	.71
A. X B. X C.	1	.17	.11	.74
D. Fac Vocational Ed Norms	1	1.96	1.23	.27
A. X D.	1	.50	.31	.58
B. X D.	1	.07	.04	.84
A. X B. X D.	1	.28	.17	.68
C. X D.	1	.53	.33	.56
A. X C. X D.	1	1.05	.66	.42
B. X C. X D.	1	.01	.00	.94
A. X B. X C. X D.	1	1.55	.97	.32
Adjusted ANOVA error	650	1.59		

TABLE 26. Male Students' Senior Orientations Toward Financial Success by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Liberal Education Norms - Analysis of Covariance With Freshman Score on Finance as Covariate

	Degrees of Freedom	Means Squares	F-ratio	P-value
A. Peer Ties	1	.26	.13	.72
B. Fac Contact	1	6.75	3.34	.07
A. X B.	1	.58	.29	.59
C. Stud Liberal Ed Norms	1	8.63	4.26	.04
A. X C.	1	.01	.01	.94
B. X C.	1	2.17	1.07	.30
A. X B. X C.	1	1.53	.75	.39
D. Fac Liberal Ed Norms	1	3.17	1.57	.21
A. X D.	1	2.17	1.07	.30
B. X D.	1	4.91	2.42	.12
A. X B. X D.	1	1.34	.66	.42
C. X D.	1	.84	.42	.52
A. X C. X D.	1	6.78	3.35	.07
B. X C. X D.	1	.20	.10	.75
A. X B. X C. X D.	1	.87	.43	.51
Adjusted ANOVA error	1302	2.02		

TABLE 27. Male Students' Senior Orientations Toward Financial Success by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Vocational Education Norms - Analysis of Covariance With Freshman Score on Finance as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	.46	.23	.63
B. Fac Contact	1	5.41	2.68	.10
A. X B.	1	.40	.20	.66
C. Stud Vocational Ed Norms	1	3.50	1.73	.19
A. X C.	1	.08	.04	.84
B. X C.	1	4.92	2.44	.12
A. X B. X C.	1	.43	.21	.65
D. Fac Vocational Ed Norms	1	.74	.37	.54
A. X D.	1	2.15	1.06	.30
B. X D.	1	2.06	1.02	.31
A. X B. X D.	1	.25	.12	.73
C. X D.	1	.21	.11	.74
A. X C. X D.	1	2.55	1.26	.26
B. X C. X D.	1	2.27	1.12	.29
A. X B. X C. X D.	1	2.16	1.07	.30
Adjusted ANOVA error	1279	2.02		

TABLE 28. Female Students' Senior Orientations Toward Financial Success by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Liberal Education Norms - Analysis of Covariance With Freshman Score on Finance as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	.14	.11	.74
B. Fac Contact	1	.85	.66	.42
A. X B.	1	5.95	4.67	.03
C. Stud Liberal Ed Norms	1	1.47	1.15	.28
A. X C.	1	.01	.01	.94
B. X C.	1	.40	.32	.57
A. X B. X C.	1	4.66	3.66	.05
D. Fac Liberal Ed Norms	1	.00	.00	.97
A. X D.	1	.45	.35	.55
B. X D.	1	.62	.49	.48
A. X B. X D.	1	.01	.01	.93
C. X D.	1	.39	.31	.58
A. X C. X D.	1	.01	.00	.84
B. X C. X D.	1	.12	.10	.76
A. X B. X C. X D.	1	.07	.05	.82
Adjusted ANOVA error	656	1.27		

TABLE 29. Female Students' Senior Orientations Toward Financial Success by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Vocational Education Norms - Analysis of Covariance With Freshman Score on Finance as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	.12	.10	.76
B. Fac Contact	1	.77	.61	.44
A. X B.	1	6.01	4.74	.03
C. Stud Vocational Ed Norms	1	4.74	3.74	.05
A. X C.	1	.05	.04	.84
B. X C.	1	.99	.78	.38
A. X B. X C.	1	.21	.17	.68
D. Fac Vocational Ed Norms	1	.06	.05	.83
A. X D.	1	.58	.46	.50
B. X D.	1	4.76	3.75	.05
A. X B. X D.	1	.50	.39	.53
C. X D.	1	1.92	1.51	.22
A. X C. X D.	1	3.40	2.68	.10
B. X C. X D.	1	.37	.29	.59
A. X B. X C. X D.	1	1.34	1.06	.30
Adjusted ANOVA error	650	1.27		

TABLE 30. Male Students' Senior Orientations Toward Career Eminence by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Liberal Education Norms - Analysis of Covariance With Freshman Score on Eminence as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	37.37	16.70	.00
B. Fac Contact	1	51.90	23.20	.00
A. X B.	1	.64	.29	.59
C. Stud Liberal Ed Norms	1	.02	.01	.92
A. X C.	1	15.27	6.82	.01
B. X C.	1	1.46	.65	.42
A. X B. X C.	1	.32	.14	.71
D. Fac Liberal Ed Norms	1	11.30	5.05	.02
A. X D.	1	1.11	.50	.48
B. X D.	1	1.83	.82	.37
A. X B. X D.	1	.01	.00	.96
C. X D.	1	.01	.00	.95
A. X C. X D.	1	2.10	.94	.33
B. X C. X D.	1	.35	.16	.69
A. X B. X C. X D.	1	.08	.04	.85
Adjusted ANOVA error	1302	2.24		

TABLE 31. Male Students' Senior Orientations Toward Career Eminence by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Vocational Education Norms - Analysis of Covariance With Freshman Score on Eminence as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	37.36	16.69	.00
B. Fac Contact	1	52.04	23.24	.00
A. X B.	1	.50	.23	.64
C. Stud Vocational Ed Norms	1	11.23	5.01	.03
A. X C.	1	22.74	10.16	.00
B. X C.	1	4.12	1.84	.18
A. X B. X C.	1	.63	.28	.60
D. Fac Vocational Ed Norms	1	4.18	1.86	.17
A. X D.	1	.01	.01	.94
B. X D.	1	.30	.14	.71
A. X B. X D.	1	3.40	1.52	.22
C. X D.	1	1.80	.81	.37
A. X C. X D.	1	.50	.22	.64
B. X C. X D.	1	2.17	.97	.33
A. X B. X C. X D.	1	4.10	1.83	.18
Adjusted ANOVA error	1279	2.24		

TABLE 32. Female Students' Senior Orientations Toward Career Eminence by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Liberal Education Norms - Analysis of Covariance With Freshman Score on Eminence as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	3.16	1.43	.23
B. Fac Contact	1	59.60	26.95	.00
A. X B.	1	.11	.05	.82
C. Stud Liberal Ed Norms	1	.85	.38	.54
A. X C.	1	5.91	2.67	.10
B. X C.	1	6.45	2.92	.09
A. X B. X C.	1	.13	.06	.81
D. Fac Liberal Ed Norms	1	11.72	5.30	.02
A. X D.	1	1.03	.47	.50
B. X D.	1	6.42	2.90	.09
A. X B. X D.	1	.27	.12	.73
C. X D.	1	.05	.02	.88
A. X C. X D.	1	.56	.25	.62
B. X C. X D.	1	.20	.09	.76
A. X B. X C. X D.	1	5.86	2.65	.10
Adjusted ANOVA error	656	2.21		

TABLE 33. Female Students' Senior Orientations Toward Career Eminence by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Vocational Education Norms - Analysis of Covariance With Freshman Score on Eminence as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	3.42	1.55	.21
B. Fac Contact	1	60.50	27.43	.00
A. X B.	1	.15	.07	.79
C. Stud Vocational Ed Norms	1	1.69	.76	.38
A. X C.	1	.13	.06	.81
B. X C.	1	11.11	5.04	.03
A. X B. X C.	1	10.13	4.59	.03
D. Fac Vocational Ed Norms	1	.43	.20	.66
A. X D.	1	3.29	1.49	.22
B. X D.	1	12.51	5.67	.02
A. X B. X D.	1	.09	.04	.84
C. X D.	1	.04	.02	.89
A. X C. X D.	1	6.96	3.15	.08
B. X C. X D.	1	.64	.29	.59
A. X B. X C. X D.	1	.95	.43	.51
Adjusted ANOVA error	650	2.21		

TABLE 34. Male Students' Senior Orientations Toward Literary and Artistic Creativity by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Liberal Education Norms - Analysis of Covariance With Freshman Score on Creativity as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	1.27	.73	.39
B. Fac Contact	1	13.89	7.99	.00
A. X B.	1	.27	.15	.69
C. Stud Liberal Ed Norms	1	72.45	41.68	.00
A. X C.	1	3.59	2.07	.15
B. X C.	1	2.03	1.17	.28
A. X B. X C.	1	1.80	1.03	.31
D. Fac Liberal Ed Norms	1	12.43	7.15	.01
A. X D.	1	10.43	6.00	.01
B. X D.	1	3.89	2.24	.13
A. X B. X D.	1	3.35	1.93	.17
C. X D.	1	5.75	3.31	.07
A. X C. X D.	1	2.46	1.41	.23
B. X C. X D.	1	.02	.02	.91
A. X B. X C. X D.	1	.36	.20	.65
Adjusted ANOVA error	1302	1.74		

TABLE 35. Male Students' Senior Orientations Toward Literary and Artistic Creativity by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Vocational Education Norms - Analysis of Covariance With Freshman Score on Creativity as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	.64	.36	.55
B. Fac Contact	1	16.76	9.50	.00
A. X B.	1	.39	.22	.64
C. Stud Vocational Ed Norms	1	38.61	21.87	.00
A. X C.	1	1.11	.63	.43
B. X C.	1	1.49	.84	.36
A. X B. X C.	1	.28	.16	.69
D. Fac Vocational Ed Norms	1	31.00	17.56	.00
A. X D.	1	.49	.28	.60
B. X D.	1	5.76	3.26	.07
A. X B. X D.	1	.49	.28	.60
C. X D.	1	.08	.04	.84
A. X C. X D.	1	4.53	2.57	.11
B. X C. X D.	1	2.16	1.23	.27
A. X B. X C. X D.	1	.16	.09	.76
Adjusted ANOVA error	1279	1.77		

TABLE 36. Female Students' Senior Orientations Toward Literary and Artistic Creativity by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Liberal Education Norms - Analysis of Covariance With Freshman Score on Creativity as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	7.07	4.16	.04
B. Fac Contact	1	21.43	12.62	.00
A. X B.	1	14.05	8.27	.00
C. Stud Liberal Ed Norms	1	4.77	2.81	.09
A. X C.	1	.62	.37	.55
B. X C.	1	1.55	.91	.34
A. X B. X C.	1	.24	.14	.71
D. Fac Liberal Ed Norms	1	24.82	14.62	.00
A. X D.	1	.60	.35	.53
B. X D.	1	.00	.00	.97
A. X B. X D.	1	.21	.12	.73
C. X D.	1	11.11	6.54	.01
A. X C. X D.	1	.20	.12	.73
B. X C. X D.	1	.98	.58	.45
A. X B. X C. X D.	1	5.33	3.14	.08
Adjusted ANOVA error	656	1.70		

TABLE 37. Female Students' Senior Orientations Toward Literary and Artistic Creativity by Departmental Peer Ties, Interpersonal Contact With Departmental Faculty, and Departmental Student and Faculty Vocational Education Norms-Analysis of Covariance With Freshman Score on Creativity as Covariate

	Degrees of Freedom	Mean Squares	F-ratio	P-value
A. Peer Ties	1	6.95	4.04	.04
B. Fac Contact	1	22.56	13.11	.00
A. X B.	1	13.80	8.02	.00
C. Stud Vocational Ed Norms	1	.06	.03	.85
A. X C.	1	.81	.47	.49
B. X C.	1	.19	.11	.74
A. X B. X C.	1	7.12	4.14	.04
D. Fac Vocational Ed Norms	1	14.64	8.50	.00
A. X D.	1	.30	.17	.68
B. X D.	1	3.19	1.85	.17
A. X B. X D.	1	1.98	1.15	.28
C. X D.	1	2.12	1.23	.27
A. X C. X D.	1	.05	.03	.87
B. X C. X D.	1	2.18	1.27	.26
A. X B. X C. X D.	1	.02	.01	.92
Adjusted ANOVA error	650	1.72		