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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. (Author)

Impacts of Interaction: Undergraduate Socialization in Academic Departments*

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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).

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 student 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.

Impacts of Interaction: Undergraduate Socialization in Academic Departments

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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.

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.

Theoretical Framework

This study examines the socializing impacts of interpersonal ties students have with faculty and peers during their undergraduate years. Two general questions deal with the socializing effects of an individual's participation in an organizational environment. One pertains to interpersonal interaction: What are the processes through which individuals change their values? The other pertains to organizational structure: What are the various characteristics of organizations that bring about similar or dissimilar changes in members' values? 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 opportunities for interaction among members (Wheeler, 1966:54).

The present research is an investigation of change or stability in students' values. I follow Goldsen, et. al. (1960:xxiv) in defining a value as "that which is considered desirable, satisfying, good, or worthy..." A further continuity with the Cornell Values Study I maintain is a focus on similar values, i.e. 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) (Rosenberg, 1957:14).

The general hypothesis underlying this study is that interpersonal interaction involving frequent, primary relationships is more likely to have

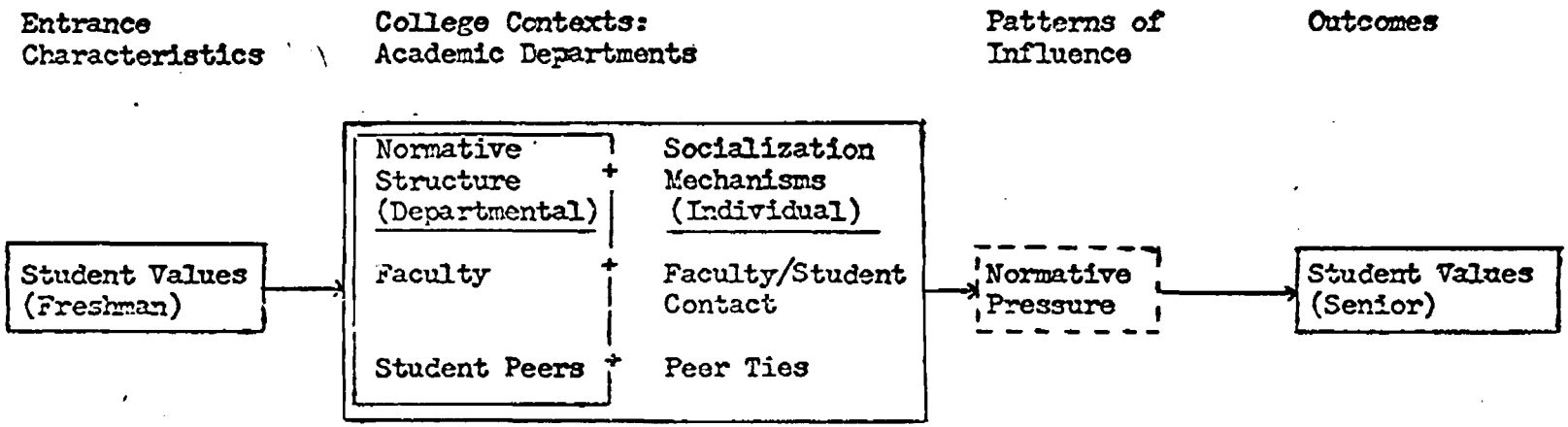
socializing impacts on students than interaction involving infrequent, impersonal relationships (Cooley, 1909:2; Shibutani, 1955:568; Homans, 1950: 37-40; Homans, 1961:180-190). While students are likely to be influenced not only by college peers and by college staff but also by persons and groups outside the college, I focus on the socializing impacts of college peers and staff (Feldman and Newcomb, 1969: 236-237, 251). An important locus for peer and faculty influence, the academic department, is the organizational unit I examine. My emphasis follows Vreeland and Bidwell (1966), who argue that the expressed goals of faculty for undergraduate education determine their behavior and expectations which, in turn, determine the socializing effects of the department. Furthermore, these authors argue that departmental effects are greatest when faculty and student norms do not conflict.

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 series 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) 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.

Figure 1. A Model of Undergraduate Socialization in Academic Departments



Departmental norms are aggregate characteristics, the collective orientations of all members of each constituent group (faculty and students). For this study, the norms considered are orientations toward the desirability of liberal education or vocational training as outcomes of a college education. 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.

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 presure is divided simply into two categories, "high" and "low", there are sixteen possible combinations of them. Rather than trying 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 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.

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 1968; the survey of undergraduates in September, 1966, and again during the Christmas vacation of 1969. (See Trow, et. al., 1972, for a complete description of the sampling frames, non-response bias, weighting, and other technical details.)

Institutions with poor student response rates (less than 25%) to the 1969 ACE-Carnegie survey were excluded from the analysis, reducing the institution sample from 189 to 89 for the present research.

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 $3\frac{1}{2}$ 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. 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, philosphy, engineering, chemistry, mathematics and statistics, economics, history,

and political science. No effort was made to differentiate engineering students by area of specialization. Table 1 shows the distribution by department, sex, and institutional quality of student respondents used for the study.

Five occupational values were investigated: one interpersonal reward or "people" orientation (Helping Others); one intrinsic reward orientation, literary and artistic creativity (Creativity); and three extrinsic reward or career orientations, financial success (Finance), administrative leadership (Administration), and career eminence (Eminence).

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. . ." Alternatives and the scores assigned to each were "essential" (4), "very important" (3), "somewhat important" (2), and "not important" (1).

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.)." (Correlation between items = .39)

TABLE 1.

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

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 of 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. (Coefficients of reproducibility = .93; scalability = .62)

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. (Correlation between items = .50)

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." (Correlation between items = .74)

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 and vocational education norms correspond with technical instructional goals. Faculty norms were computed for all departments with faculty respondents. The faculty sample was based on a total enumeration of faculty. The faculty

response rate was 60 per cent. See Trow, et. al., (1972) for details, especially pp. 49-60 on non-response bias. Student norms were computed only for those departments with at least five student respondents. 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. Examination of within-group variance on each norm measure showed no effects of departmental normative consistency on change in students' values (Weidman, 1974: 50-51).

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. (Correlation between items = .40) The measure was a simple summative score of responses to two items 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". 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". Scores for individuals could range from one ("Strongly disagree") to four ("Strongly agree").

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: "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. Fac Contact had a coefficient of reproducibilty of .87; scalability = .66.

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" and "Of all your

close friends, what proportion are students at your college". 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.

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.

To investigate the joint effects of departmental norms and patterns of student/faculty interaction on changes in students' occupational values, I use analysis of covariance, a procedure which uses a regression estimate to adjust for the effects of initial or freshman score on the occupational value. See Schuessler (1969), Lord (1967), Bock and Haggard (1968), and Hauser (1970) for discussions of various pertinent technical issues in the use of covariance analysis. 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 of the educational

norms (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. For faculty contact, 57% of the cases were placed in the "low" category and 43% of the cases were placed in the "high" category. For peer ties, 33% of the cases were considered "low" and 67% of the cases were considered "high." 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 covarince 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 availalbe 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 (Anderson and Frisch, 1971).

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. The correlates of value change are shown more clearly by covariance analysis than by the more descriptive departmental comparisons (Weidman, 1974). 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.

Findings

The following are some of the general relationships expected between departmental student and faculty norms, departmental social relationships, and student value change during college. Personal contact with departmental faculty is expected to have a positive influence on change in students' values concerning intellectual endeavor. Primary social relationships with departmental peers are expected to exert positive influences on change in more closely career-related orientations of students. Departmental student and faculty liberal education (moral) norms are expected to have positive effects on change in both intrinsic reward and interpersonal orientations. Departmental student and faculty vocational education (technical) norms are expected to exert positive influences on change in career orientations.

Table 2 contains a summary of the main effects on students' occupational values. 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

Table 2. 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.

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.

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 the other social interaction measure, departmental peer ties, the significant zero-order effects are all in the expected directions. Certainly, the five value orientations considered here are not the only ones that might be influenced by departmental faculty and peers. 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 other than those included in the present research. The effects of departmental student and faculty liberal education (moral) norms on students' orientations toward helping other and creativity are in the expected directions for men, as are the effects of departmental student and faculty vocational education (technical) norms.

Some puzzling main effects are the opposite effects by sex of 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.

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.

Variables can act in combination as well as individually. The addition of control variables enables specification of conditions under which particular departmental normative climates have the greatest influence on students' values. The following questions can be raised for the present research: Are the normative influences of departments mediated by social relationships? Are the effects of faculty contact mediated by peer ties? Are the effects of faculty norms mediated by student norms? Each of these questions can be addressed by examining a first order interaction effect. On the basis of the theoretical discussion, 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.

Conditional relationships are complex and often rather difficult to interpret. The following, therefore, are the general trends appearing in the data. Figures 2 through 17, containing diagrams of all the significant statistical interaction effects are appended. Each figure contains 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 directions of differences between means, but they do not denote continuous functions.

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 suggest that departmental peer solidarity for men may center about concerns other than the academic, 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 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 analogous. 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.

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 a later section of this report.

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 faculty and student liberal education norms for both men and women (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.

Even more complex relationships are illustrated by second-order statistical interactions. Of the five significant second-order interactions, 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 statistical 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 between student vocational education norms and faculty contact discussed in the foregoing.

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 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 eudcation 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 (Figures 14, 15). 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.

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 who have "low" liberal arts orientations. This further illustrates the interplay of departmental faculty and peer impacts on the values of undergraduates.

Implications

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 be detrimental for female students if accompanied by a decrease in opportunities for women to establish close social relationships with faculty.

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. This suggests 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 behavior exhibited by men and women in organizational settings.

It is interesting to note that the influences of departmental faculty on undergraduates' values tend to be as strong as or even stronger than the influences of peers. As students get along farther in the educational process, they appear to look more toward faculty than peers as potential role models or as sources of authoritative information about prospective roles. It is thus not at all surprising that departments exert significant influences on non-intellective orientations of students.

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, assignments, and course requirements. Other, less formal,

settings are probably more conducive to the establishment of primary relationships.

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 smaller 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.

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

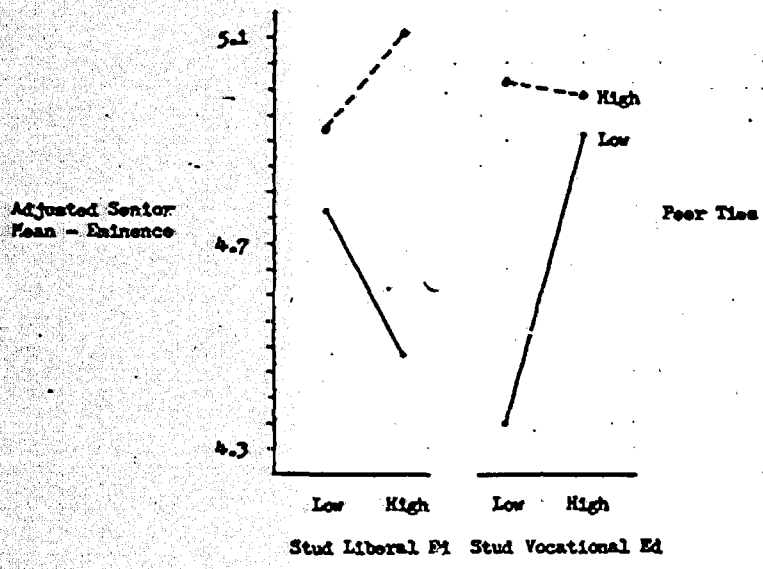

Figure 3. Career Eminence by Departmental Faculty Vocational Education Norms and Contact With Departmental Faculty (Females)

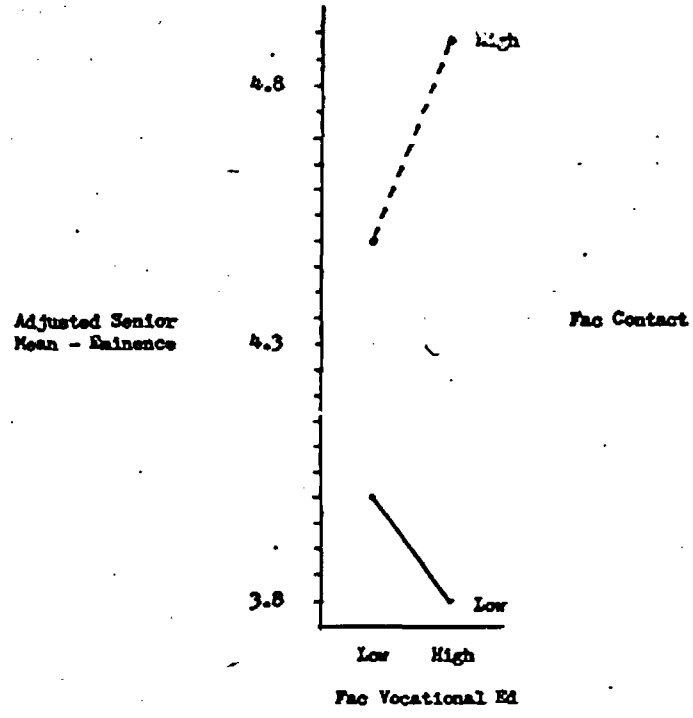

Figure 4. Helping Others by Departmental Faculty Vocational and Liberal Education Norms, and Contact With Departmental Faculty

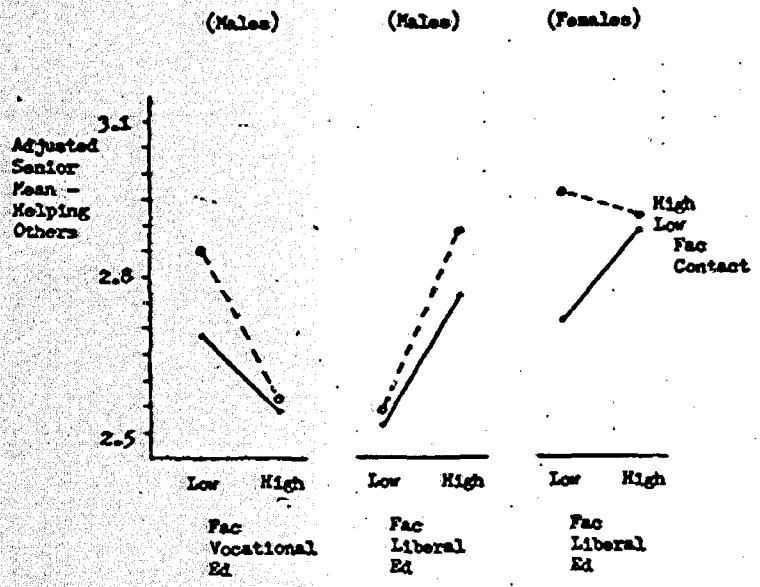

Figure 5. Creativity by Departmental Faculty Vocational Education Norms and Contact With Departmental Faculty (Males)

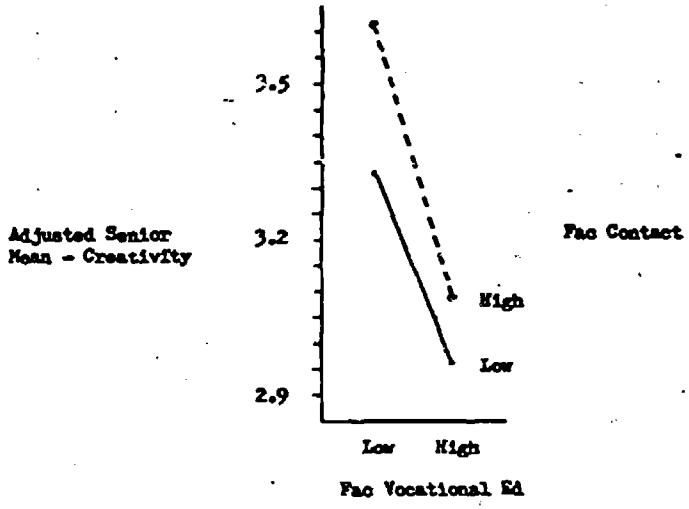

Figure 6. Finance by (a) Departmental Faculty Vocational Education Norms and Contact With Departmental Faculty, and (b) Departmental Peer Ties and Contact With Departmental Faculty (Females)

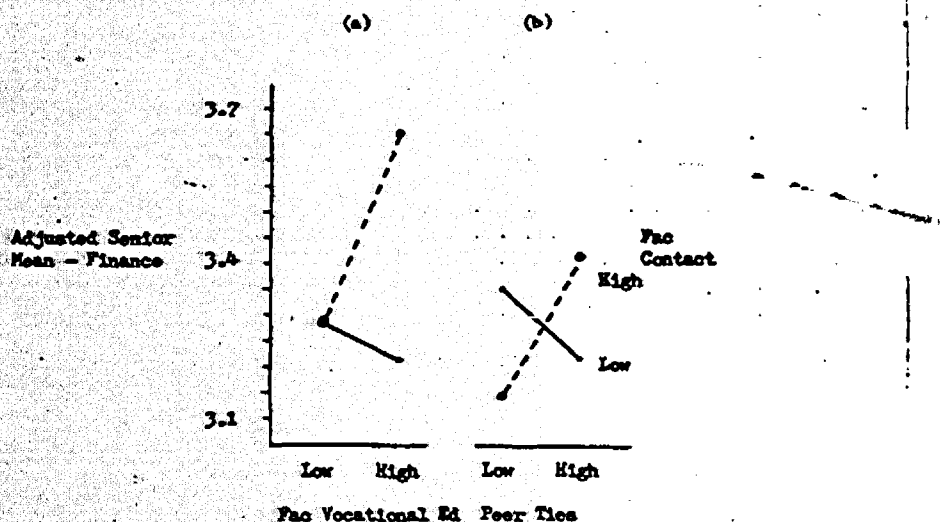

Figure 7. Creativity by Contact With Departmental Faculty and Departmental Peer Ties (Females)

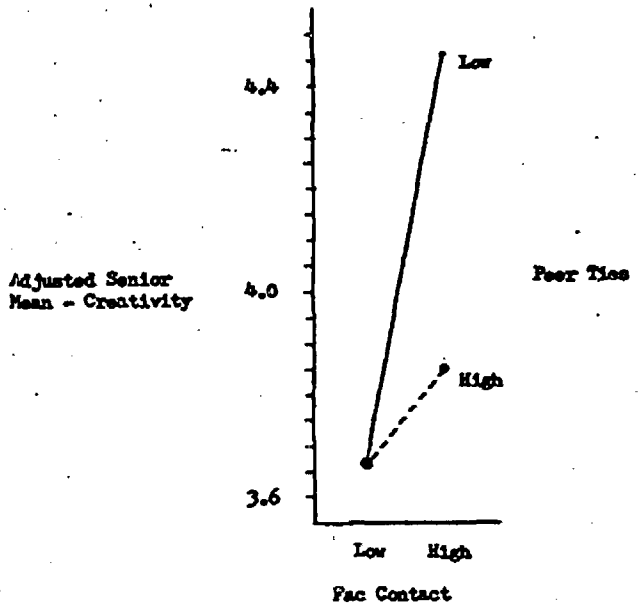

Figure 8. Creativity by Departmental Faculty and Student Liberal Education Norms

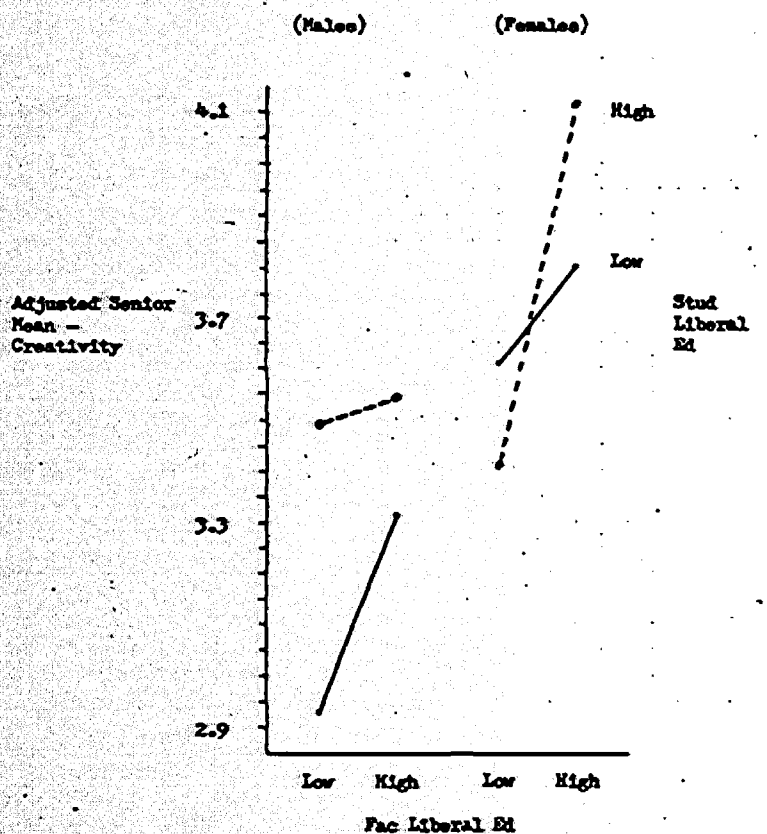

Figure 9. Creativity by Departmental Faculty Liberal Education Norms and Departmental Peer Ties (Males)

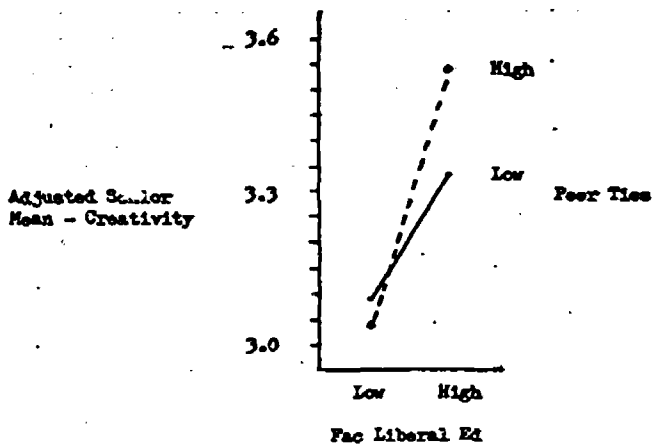

Figure 10. Administration by (a) Departmental Faculty Liberal Education Norms and Ties With Departmental Peers, and (b) Departmental Student Liberal Education Norms and Contact With Departmental Faculty (Males)

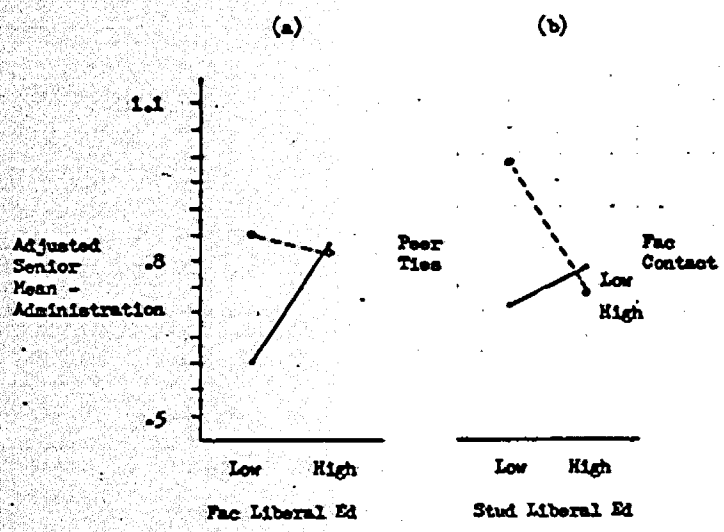

Figure 11. Career Eminence by Departmental Student Vocational Education Norms and Contact With Departmental Faculty (Females)

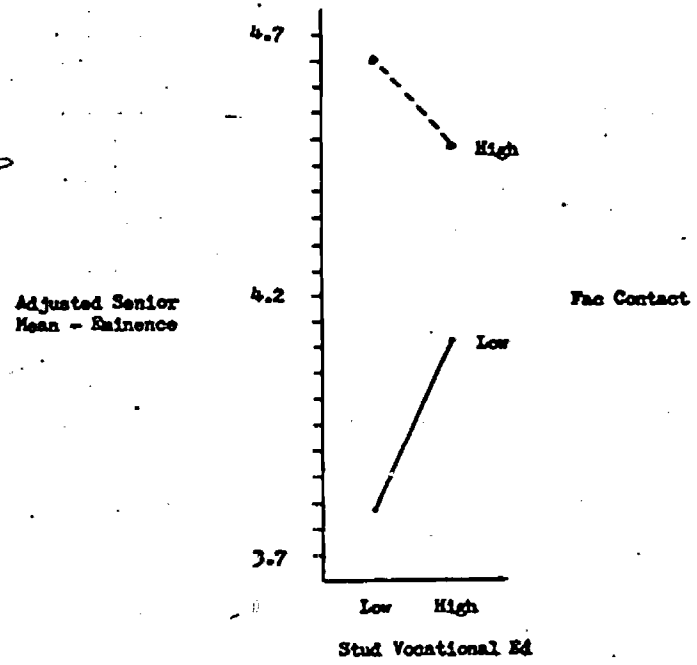

Figure 12. Career Eminence by Departmental Student Vocational Education Norms, Departmental Peer Ties, and Contact With Departmental Faculty (Females)

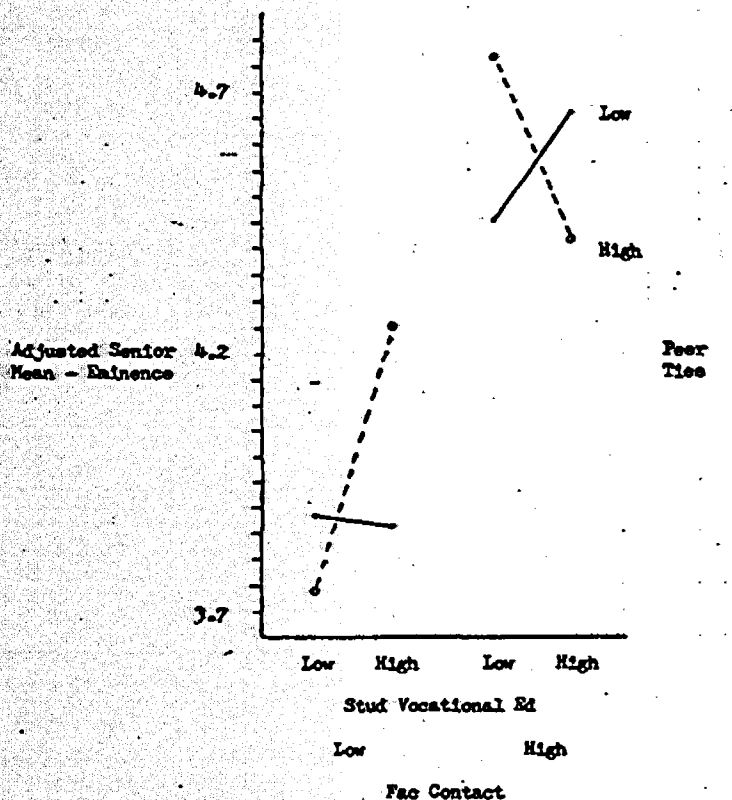

Figure 13. Creativity by Departmental Student Vocational Education Norms, Departmental Peer Ties, and Contact With Departmental Faculty (Females)

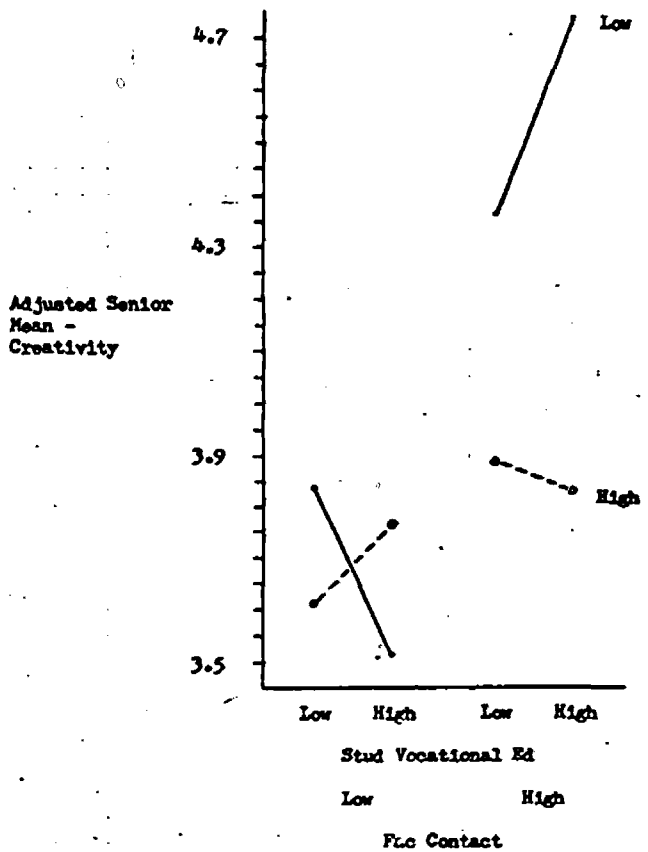

Figure 14. Finance by Departmental Student Liberal Education Norms, Departmental Peer Ties, and Contact With Departmental Faculty (Females)

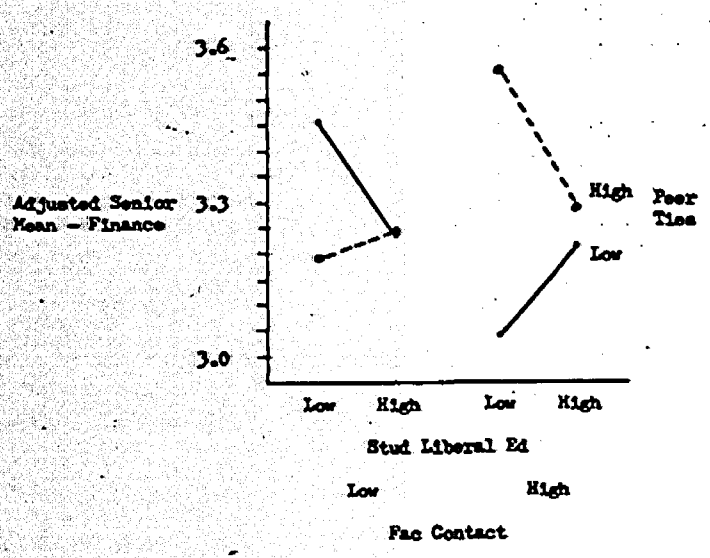

Figure 15. Finance by Departmental Student Liberal Education Norms, Departmental Peer Ties, and Departmental Faculty Liberal Education Norms (Males)

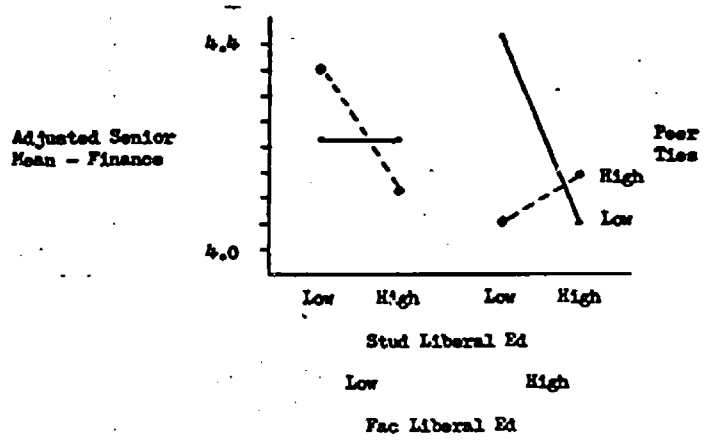

Figure 16. Helping Others by Departmental Faculty Liberal Education Norms, Contact With Departmental Faculty, and Departmental Peer Ties (Males)

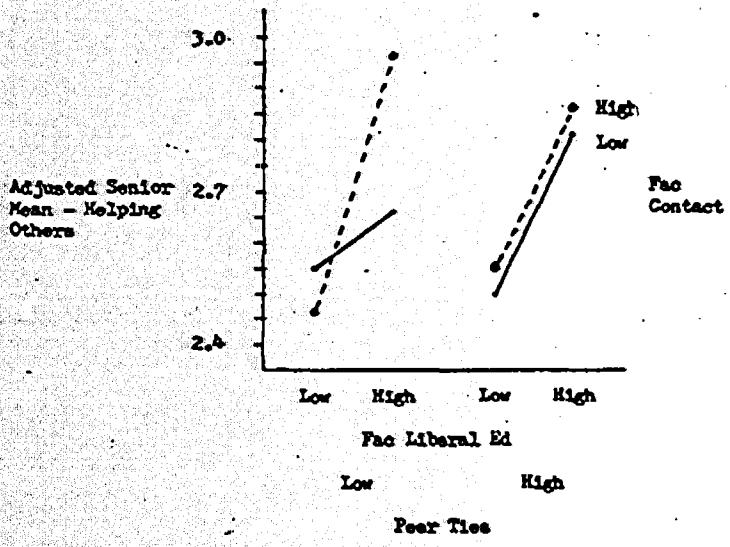

Figure 17. Creativity by Departmental Faculty and Student Liberal Education Norms, Departmental Peer Ties, and Contact With Departmental Faculty (Females)