

CURRICULAR CHOICE AND PRIMARY RELATIONSHIPS:
A STUDY OF THE RELATIONSHIP BETWEEN INTERPERSONAL
TIES AND VOCATIONAL CHOICES OF MALE COLLEGE STUDENTS

by 1264

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B. A., Kansas State University, 1967

A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree


MASTER OF SCIENCE

Department of Psychology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1970

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ACKNOWLEDGMENTS

My thanks must go first to Professor George Peters for his never-failing guidance, support and friendship. Without his encouragement from the very inception of the project, this thesis might never have been produced.

Dr. Ken Kennedy, in offering a constant source of support, has played a vital role.

And for the assistantship which allowed me to carry out the research reported here, I thank the Study of Student Development staff in the Kansas State University Counseling Center.

Finally, I wish to thank the 40 men whose cooperation and interest facilitated the data-gathering phase of this project.

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CHAPTER I

THE AREA OF INVESTIGATION AND THE PROBLEM

Introduction and Review of Literature

Interpersonal relationships, particularly those of a primary nature, have long been of concern to the behavioral scientist. A significant body of research suggests the importance of peer ties in influencing the behavior and attitudes of the members of a social system. For example, pressures toward conformity to group norms placed upon an individual by his close associates has been observed in such diverse contexts as the juvenile gang (Cloward and Ohlin, 1960; Whyte, 1943) and the work place (Roethlisberger and Dickson, 1939; Whyte, 1956). Schofield (1964) witnesses the fact that friendship plays an important role in the psychological well-being of the individual. In addition, there is evidence that the recovery or the deterioration of patients in mental hospitals depends not only on planned therapeutic measures, but also upon the interpersonal relationships that develop spontaneously on the wards (Caudill, 1958; Caudill, et. al., 1952; Stanton and Schwartz, 1954). On the other hand, a lack of close ties with others has been suggested as being related to decreased effectiveness in a social system, heightened vulnerability to personality disorders and an increased degree of alienation from society.

Friendship seems to be a significant factor in opinion formation and in the flow of information (Katz and Lazarsfeld, 1955). Friendship groups have been viewed as anchorage points for individual opinions, attitudes, habits and values (Shils, 1950; Shils and Janowitz, 1948; Steiner, 1954) acting both as agents of change and of resistance to change (Flacks, 1963).

While the close interpersonal ties that one maintains provide a source of personal stability and identity, shifts in interpersonal relationships may also serve as one important catalyst for individual growth and change (Jersild, 1946; Maslow, 1954). Recent studies on developmental processes among college students have focused upon friendships as one of the important agents of change and growth in the young adult. The research of Katz, et. al. (1967) suggests that interpersonal relationships are perhaps the most significant agents of change among college students. Sanford (1962) has discussed the role of peers in the "freeing of impulse", or achieving a greater openness to one's own experiences, a phenomenon he regards as a major goal of development in college-age youth. Relations with others are also considered by Sanford as important in the attainment of a relatively stable identity. Other investigations have shown that peer-group membership has significant influence upon students' attitudes, and that when students do change, the direction is toward the actual or perceived value and attitude positions held by their friends (Bushnell, 1962; Flacks, 1963; Newcomb, 1962; Newcomb, et. al., 1967; Pace, 1964; Warwick, 1963). It would appear that to understand processes of student development involves understanding the qualities and patterns of college friendships.

The Problem and Theory

There is extensive evidence indicating that patterns of interpersonal relationships vary among different social classes (Blum, 1964; Dotson, 1951; Lynd and Lynd, 1929), age groups (Williams, 1958), and racial and ethnic groups (Criswell, 1937; Loomis, 1943), and that ties with others vary according to additional factors such as sex (Armstrong, 1969; Lundberg and Dickson, 1952) and marital status (Babchuk, 1965; Babchuk and Bates, 1963). This

thesis explores the relation between interpersonal ties and yet another variable--that of vocational choice in a college population. It is proposed that vocational choice may be conceived as a decision affecting one's "way of life" (Super, 1957), carrying implications for many facets of living beyond the job aspect, including relationships with others. In this regard Anne Roe's theory of vocational choice provides a conceptual framework from which specific hypotheses will be derived for the purpose of investigating the interpersonal ties among different groups of college students, categorized according to their curriculum, or choice of vocation.

From Roe's early investigations (e.g., Roe, 1951a, 1951b, 1951c, 1951d, 1952, 1953) into the developmental backgrounds and personality characteristics of research scientists in various specialties grew her broad conception of a dichotomous work orientation of "toward persons-not toward persons", or, more specifically, interest in people versus interest in objects. She proposes that the two orientations presume a different organization of personality characteristics and that personality differences between person versus non-person oriented scientists are in part the result of different child-rearing practices.

In her research Roe (1957) found that social scientists, in contrast to natural scientists, reported intense and disturbing family relationships in childhood. This finding led her to hypothesize that stressful parent-child relationships were sources of later personality disturbances and of a concern with human relations that led the individuals into careers in the social sciences. For the natural scientist, early family life seems to have been characterized by detached, unemotional and vague relationships leading him on the one hand to abandon efforts at intimate human involvement, and, on the

other hand, to turn his attention to the more approachable and comprehensible world of impersonal things.

Generalizing from these findings, Roe formulated a dichotomous classification of occupations on the basis of orientation toward persons or toward non-persons. Those occupations that Roe saw as attracting non-person oriented people included Technology, Outdoor, and Natural Science occupations; those drawing people-oriented persons were Service, Business Contact, Social Science, General Cultural, and Arts and Entertainment.

In summary, Roe's theory contains two distinct but related aspects, which may be separately tested. Her most basic assumption is that there is a major personality difference between groups of people with different vocational orientations, and that this difference lies in the dimension of interest toward persons or not toward persons. The second aspect involves an explanatory formulation of the origins of person versus non-person orientation in the different childhood experiences of both groups. Research designed to test the second part of Roe's theory has generally failed to support her contention that early upbringing is systematically related to vocational choice. It is the first aspect of Roe's theory, however, that most directly pertains to the scope of this thesis and from which hypotheses were derived. The basis for expecting that different curricular groups of college students will vary in their interpersonal relationships lies in Roe's proposition that vocational groups can be dichotomized according to their orientation toward people. It should be pointed out that this proposition is not necessarily dependent upon the second proposition concerning origins of person orientation in childhood experiences. There is a significant body of research that indicates the importance of socialization during the adult years of an

individual's life in addition to the significance of childhood learning.

Research testing Roe's hypothesis of personality differences between people in the two types of occupations, though scarce, has tended to support her conception of a person versus non-person orientation. Utton (1962) found that Rs in several "people oriented" occupations were more altruistic (as measured by the Allport-Vernon-Lindzey Study of Values social scale) than those in selected "non-person oriented" occupations. Levine (1963), using a 10-item questionnaire to measure a R's tendency toward human or nonhuman approaches to problem solving, found that people with a strong "human orientation" tend to be found in people oriented occupations. Patterning her research after that of Roe, Eiduson (1962) found social isolation common among men in the natural and physical sciences and among engineers. Her investigation, however, did not include a comparable sample of social scientists. Terman (1955) found that tests of occupational interests given to his Rs during their youth were rather good predictors of eventual choice of occupation and also corroborated Roe's and Eiduson's findings on the lack of sociability among the natural scientists.

Research carried out in a college setting, by Newcomb and Feldman (1969), indicates that engineering students tend to be less sociable than most other types of college students. The authors fail, however, to describe how sociability is measured. Goldschmid (1967), in his investigation of the relation between personality and choice of major, classified vocations along a science-humanities continuum and administered five personality tests to his Rs (the California Psychological Inventory, Minnesota Multiphasic Personality Inventory, Myers-Briggs Type Indicator, Omnibus Personality Inventory, and Strong Vocational Interest Blank). He found that engineers, whom he placed

close to the science end of the continuum, tended to be reserved and retiring in a social setting, socially introverted, and not spontaneous. On the other hand, educators, representative of the humanities vocations, were imaginative in social situations, outspoken and gregarious, seeking social contacts and gaining satisfaction from them. Hansen (1960) reports that his sample of engineering seniors indicated a lack of interest in people, according to their profiles on the Strong Vocational Interest Blank and the Edwards Personal Preference Inventory.

The validity of Roe's studies of eminent scientists is dependent on the accuracy of the retrospective reports of the men about their parents' attitudes and behaviors toward them, the early influences on their preferences and interests, feelings about themselves and other people, and also on Roe's interpretations of her interview material. In addition, some of Roe's conclusions were based on judgments she made about the scientists on the basis of Rorschach and TAT protocols. Numerous validity and reliability problems exist in research based on projective tests. Other measures of degree of person orientation employed in the studies cited above, e.g., the AVL Study of Values, the Strong Vocational Interest Blank, the Omnibus Personality Inventory, and a measure of approaches to problem solving, also may be of questionable validity for measuring orientation toward or away from people. The present study measures degree of person orientation using reports of present social behavior. While not directly measuring actual behavior, which would seem to provide the most valid measure of person orientation, it is believed that these reports of ongoing behavior will provide a somewhat more valid measure than those used in previous research. Even though the basic design is cross-sectional in nature and utilizes the interview technique, the

present approach will avoid such problems as the questionable validity and reliability of projective tests as well as the frequently tenuous relationship between stated attitudes and actual behavior.

In summary, there is considerable evidence attesting to the importance of interpersonal relations in the formation and change of an individual's identity, behavior, values and attitudes. Furthermore, friendship ties appear to be an important factor in personal development during the college years. It seems logical to assume that differences in the extent or quality of interpersonal relations that are experienced by different groups of students would have implications for the growth and development of these students. If Roe's conception of vocational choice is correct, there should in fact be differences in interpersonal ties among different curricular groups of college students. The major focus of the present study is the exploration of this proposition. In this thesis, primary relationships are treated as a dependent variable, the independent variable being the individual's academic major. In the section below, a primary relationship is more specifically defined.

A Framework for the Study of Primary Relations

Interpersonal ties may be perceived as falling along a continuum of intimacy going from casual acquaintances to highly primary relationships. The concern of this study is with relationships that fall toward the more intimate end of the continuum. Bates and Babchuk's (1961) reformulation of the primary group and primary relationship will provide a framework for the present study's investigation of friendship and parent-student ties. They argue:

The existing literature on the primary group fails to make clear that bound up in the concept as it is traditionally used are two distinct dimensions, one social-psychological, the other sociological. Clarity of the term "primary group" has been obscured by incorporating into it the sociological dimension, which includes the elements of size, quantity of interaction between members, duration of interaction and homogeneity of members. These are sociological components in that none of them requires reference to psychological attributes, either of the members or the relations between members. The social-psychological dimension is critical and defines the concept. It includes two elements: member orientation toward other members in actual or potential activity, and the affective aspect of intermember orientation. (p. 185)

Perhaps what is most critical regarding this definition of a primary group is its focus upon the nature of the relationship between members. Indeed, it is the very nature of the relationship, according to Bates and Babchuk, that defines the concept. In this study a primary relationship is defined as one in which the participants are predisposed to enter into a wide range of activities and this predisposition is associated with a preponderance of positive affect. The relationships to be explored in the present study--i.e., friends and family, may be meaningfully defined as types of primary relationships. Organizational affiliation may be regarded as an important source of potential primary relationships.

Interpersonal Involvement

In this study the construct of interpersonal involvement will be employed as a means of testing for differences in behavioral styles between person oriented and non-person oriented individuals. This global phrase pertains to both quantity (number of primary ties with others) and quality (closeness) of one's relationships with other people. Both the quantity and quality of interpersonal relations must be considered in order to fully define the concept, since possessing many superficial ties with others is a state that has many different connotations than either the maintenance of

many close relationships, few close relationships, or few superficial bonds with others. It is assumed that individuals can be classified according to their adherence to one of the various patterns of interpersonal involvement described above and that these "types" of people will eventually be found to differ, across groups, on a number of other psycho-social variables such as ego-strength, family background, personal adjustment, etc. While such questions are beyond the scope of this thesis, the data reported here should have relevance for these questions. Little data along these lines has been reported in the literature; the present study represents an attempt to begin to fill the gap by relating interpersonal involvement to the variable of vocational choice.

Although it has been suggested that active involvement in one area, such as the family, tends to draw on the energy available for other types of close relationships, it has generally been found that frequent and intimate contact with one type of group is associated with involvement in other types of groups, and vice-versa. Therefore, it is assumed in the present study that interpersonal involvement is a univariate tendency ranging from few, superficial ties with others to many, close relationships.

Although the present study speaks of interpersonal involvement as a broad but factorially simple behavioral tendency, its actual measurement is broken down into several areas, each dealing with a segment of interpersonal relations. Thus, each respondent's (R's) interpersonal involvement is investigated in terms of 1) number of friendships, 2) closeness of friendships, 3) types of relationships with family members, and 4) number of organizations of which he is a member.

If interpersonal involvement is here correctly perceived, the types of

interaction which are characteristic of a R in one area will be positively related to interactions in other areas. Those Rs who are involved to a great extent in relations with others will have many friends, will belong to more organizations, will have maintained closer family ties, etc., than those Rs who either do not need or are not able to become interpersonally involved--those Rs who are "non-person oriented".

Hypotheses

The basic question raised in the present study is: are Rs committed to a non-person oriented occupation (according to Roe's scheme) more non-person oriented than Rs committed to a person oriented occupation. Engineering majors will here be regarded as Rs committed to a non-person oriented occupation; secondary education majors will be regarded as men committed to a person oriented occupation. Degree of person orientation is operationally defined in terms of reported interpersonal involvement. The basic question can be formulated in terms of a number of more specific hypotheses:

1. Engineering Rs will report fewer close friends than secondary education Rs.

This hypothesis pertains to the "quantity" aspect of interpersonal involvement in the friendship arena of primary relations. It is assumed that person oriented Rs will differ from non-person oriented Rs in quantity, or number of close ties with others. Hypothesis two is concerned with the "quality" aspect of friendship ties.

2. Engineering Rs will report less close relations with close friends than secondary education Rs.

Rs will be asked initially to give the first names or initials of those people they consider to be close friends, a procedure which will be more thoroughly outlined in Chapter II. It is important to note, in relation to

hypothesis two, that Rs will perform this task on the basis of their own, personal definition of a close friend. Thus, hypothesis two could be reformulated to state that perhaps this idiosyncratic definition of closeness will differ between the two groups. Actual, or relative, closeness will be investigated via several factors derived from Bates and Babchuk's (1961) definition of a primary relationship which will be discussed in Chapter II. It is hypothesized that engineering Rs will in fact be less close to those people they regard as close friends than secondary education Rs.

3. Engineering Rs will report less involvement in their relationships with their families than secondary education Rs.

This hypothesis pertains to the quality of R's relationship with his family. In contrast to Roe's formulation of the family as primarily a past determinant of personality differences in the area of person orientation, this thesis is concerned with the family as a present source of primary relationships; it does not attempt to explore longitudinally the origins of a R's approach to primary relationships. Again, it is assumed that a R's style of interaction in relations with significant others will be generally similar in all areas of primary relationships.

4. Engineering Rs will report less participation in off- and on-campus organizations than secondary education Rs.

Hypothesis four pertains to the "quantity" aspect of interpersonal involvement. Organizational affiliation, while not necessarily primary in nature, may be important because of the potentially primary ties, particularly friendship relationships, which may result from such membership. It is contended that a person oriented individual will not only already have a greater number of close ties with others, but that he will also take greater

advantage of opportunities to form additional ties through membership in clubs and associations than will a non-person oriented individual.

CHAPTER II

SETTING AND METHODOLOGICAL PROCEDURES OF THE STUDY

Introduction

The data in this thesis were obtained by means of a partially structured interview schedule administered to a purposive sample of 20 engineering majors and 20 secondary education majors. The Rs were enrolled in junior and senior engineering and education courses at Kansas State University (KSU) in the Spring of 1969. This chapter will deal with the characteristics of the sample, the interview schedule, concepts and indices used in the study, and the methods of analysis that were used.

The Sample

The study involved a relatively homogeneous sample of 40 Rs, half of whom were engineering majors and half education majors. Several phases were involved in the selection of the sample. Ultimately, each R met the seven criteria described below before he was included in the sample. Selecting the sample in this way made it possible to control for variables that had been demonstrated in previous research as being important in the selection of friends:

- 1) Vocational choice. Engineering majors are regarded as individuals committed to a non-person oriented occupation and secondary education majors as individuals committed to a person oriented occupation. A possible confounding factor is the fact that a variety of orientations is possible within one particular occupation. To control for this, Rs were chosen on the basis of the specific role they planned

to play in their future occupation. Thus, only those men committed to the "typical" engineer's role were studied. Men planning a career in sales engineering, for example, were not considered. By the "typical" engineering role is meant that of researcher or investigator, supervisor, problem-solver, designer. His main characteristics are thinking rather than acting, organizing and understanding rather than dominating or persuading. Likewise, only those men committed to the "typical" secondary teaching role were included in the sample, and Rs heading for a research role, for instance, were eliminated. The "typical" secondary teaching role is defined as that of a teacher or therapist. He tends to avoid situations where he might be required to engage in intellectual problem solving, research, or strictly abstract thinking.

- 2) Sex. Only males were used in the present study for two reasons: first because it may be assumed that sex is a likely confounding variable in that males and females have been found to exhibit different patterns of relations with others (e.g., see Armstrong, 1969; Lundberg and Dickson, 1952), and because most of the research carried out by Roe and by those testing Roe's theory has been based on male Rs.
- 3) Academic classification. Only juniors and seniors were used in order to control for commitment to stated occupational choice and to control for amount of time in college during which friendships could be formed.

- 4) Race. Minority group status is often associated with limited access to membership in certain organizations and participation in certain activities, a restriction that is directly related to the potential formation of friendships in such organizations. Therefore, only white Rs were used in the present study.
- 5) Hometown. Only Rs whose hometown was other than Manhattan, Kansas were included. The rationale for this approach is related to factors in the formation of friendships. It seems reasonable to assume that the various possibilities for forming and maintaining ties with others would be different for those Rs who remain in their hometown to attend college and for those who are relative strangers to the town. Furthermore, certain avenues, such as the dormitory, a fraternity or food centers, would be less accessible to Rs living at home with their parents. Finally, it was decided to control for this factor because degree of interaction with parents, another component of interpersonal involvement which was explored in the present study, would necessarily be affected by presence or absence of the parents in the R's daily environment.
- 6) Social class. Several studies (e.g., Blum, 1964; Dotson, 1951) have suggested differences both in quality and quantity of the primary relationships of white-collar as opposed to blue-collar persons. For this reason it was decided to control for social class by using only

white-collar Rs in the present sample. Duncan's Index of Occupations was used to classify the Rs into white-collar and blue-collar categories and to assign decile scores to each R on the basis of his father's occupation.

- 7) Marital status. It was felt that marriage affects the frequency and intimacy of relations with others in addition to having an influence on the possible channels open to the individual for the formation of ties with others. And since there is a general lack of studies of the primary group ties of the unmarried in the literature, only single individuals were included in the present study.

A biographical questionnaire was constructed in order to obtain information on the criteria described above. (A copy of the questionnaire is located in Appendix A). The questionnaire was administered to the male students in 21 upper-level engineering courses and 16 upper-level education courses. Approximately 483 completed forms were returned from engineers, comprising 84 per cent of the population (juniors and seniors enrolled in the college of engineering). Ninety per cent, or 117, of the upper-class men in secondary education returned completed forms.

The questionnaires were then analyzed, and those not meeting the sampling requirements were eliminated. A pool of 30 education Rs and 93 engineering Rs met all the sampling requirements. These profiles were numbered consecutively and a table of random numbers was used to select 20 interviewees from each group.

Each of the 40 persons was contacted by telephone. The objective of the study was described briefly, and their participation was solicited. Only two

of the original 40 students selected refused to participate.¹ These were replaced by two additional names. The interviews, lasting about 45 minutes, were conducted in an office at the University Counseling Center. In addition, a questionnaire booklet was sent home with each R and all booklets were returned by the end of the semester. All Rs were interviewed within a two month period. The interviewer spent the first few minutes of each interview establishing rapport with the Rs, and she felt that this effort was successful, as evidenced by the number of Rs who remained after the end of the interview to discuss the research and by the 100 per cent return rate on the take-home questionnaires.

The Instrument

A partially structured interview schedule was used.² (A copy of the schedule is located in Appendix B.) The schedule contained five sections, which are briefly described below.

Section One was used to obtain background information supplementing that requested on the preliminary biographical questionnaire. Questions dealt with R's place of residence during the school year, church affiliation and religious beliefs, political affiliation, membership in organizations, and part-time job information. This data was useful as a means of more fully describing the sample in addition to providing information pertinent to a

¹The refusals were made by one engineering major and one education major. A brief biographical sketch more fully describing the nature of the sample is located in Appendix C.

²The schedule was patterned after an instrument employed by George R. Peters in his study of the primary relationships of college students. George R. Peters, "Primary Friendship in the College Community: A Study of the Associations of Male Students", Unpubl. Doctoral Dissertation, University of Nebraska, 1968.

test of hypothesis four.

Section Two concerned the relative importance (to each R) of each of nine selected problems and issues according to which caused him the greatest worry and concern. Differences in the relative importance that individuals attach to various concerns could influence the extent of confiding in friends as well as what is confided, so a measure of the relative importance of different concerns was included to control for this variable.

Section Three asked each R to list the initials or first names of persons he considered to be his very close friends. According to the procedure outlined by Peters (1968), no limit was placed on the number of friends that the R might cite, however, they were asked to exclude girl friends (or fiancées) and members of their immediate families from the category of very close friends. Such associations were excluded from this section of the instrument because it was felt that significant qualitative differences might exist between a male's relationship with his friends and ties with his family or a girl friend. However, Rs were permitted to list females as close friends. It is important to note that information related to ties with family was obtained in another section of the instrument.

The friends cited were divided into two categories--those friends that were local and those that were nonlocal. Then each R was asked to indicate which of the friends he had listed he considered to be his three closest friends, and his two least close friends. A series of questions was then asked about each of these five persons. Three questions pertained to the formation of the friendship: specifically, Rs were asked when, where and how each friend was met. This information was felt to be important to an investigation of differences between the two groups of Rs in general style of

establishing ties with others.

Three questions were related to the activity component of friendship. They dealt with leisure-time activities shared with friends.

Finally, 16 items which concerned various aspects of the affective dimension of close friendships were included. These items focused on the extent to which each R confided in his friends, felt free to borrow money from each friend, whether he felt at ease with each friend, the extent to which he exchanged home visits with friends, and the degree of spontaneity involved in each relationship.

The data obtained in section three were used to test hypotheses one and two--those related to extent and closeness, or quantity and quality, of ties with friends.

In Section Four the R was asked to rank-order his three closest friends in terms of felt degree of closeness and to indicate which of his two least close friends he felt to be the least close. This procedure was important in that it provided a basis for investigating degrees of each R's perceived "primariness", or closeness with his friends.

Section Five was contained in a questionnaire booklet sent home with each R. In this section, Rs answered a series of questions which dealt with their relations with parents. Information on frequency of interaction with parents was gathered in addition to data on confiding in parents. The quality of interactions with parents was assessed by 13 questions concerning kinds of things each R discussed with his parents. Finally, ten questions concerned each R's general attitude toward his home life. The data obtained in this section was used to test hypothesis three.

That the instrument provided valid and reliable measures is at least

partially assured by the fact that it has been pretested and used in research by Peters.

Concepts and Indices Used in the Study

Several concepts are employed throughout this thesis. In this section these concepts are defined more precisely.

Friendship. The general framework that was used in this study's investigation of friendship has already been described in Chapter I: Briefly, a primary friend is defined as one with whom the R is predisposed to enter into a wide range of activities and whose predisposition to do so is associated with a preponderance of positive affect. Together, the activity and affect dimensions of friendship comprise an index of the closeness of a friendship. These measures will permit a test of hypothesis two to be made. Below, friendship is more specifically defined in operational terms.

To measure the activity component of primary friendships, a list of 18 activities frequently engaged in by college students was developed. (See Appendix B.) Each R indicated which of the activities he had participated in with his friends. In addition, Rs were encouraged to cite activities shared with friends but not included on the list.

Five independent measures of the affective dimension of friendship were employed. The first measure involved the sharing of intimate confidences. Rs indicated whether they had ever talked to their friends about nine separate problems. (See Appendix B.)

The second measure involved whether or not Rs felt free to borrow a large amount of money from their friends should they need to, and whether they had ever borrowed money from their friends.

The third measure concerned each R's felt degree of freedom and ease in

his relationship with each friend. They were asked if they really felt free to let their hair down and just be themselves with each friend. The fourth measure related to the exchange of home visits among friends.

Finally, as the fifth measure of affect, Rs named their three closest friends and indicated which of these they considered their very closest friend. Each R was also asked to indicate which friend was his least close friend.

Closeness of family ties. The family relationship is regarded in this thesis as another type of primary relationship, involving both the activity and affective dimensions described above. This is not meant to imply, however, that there are no differences between one's ties with friends and bonds with family members. This thesis contends that any primary relationship contains activity (behavior) and affect (feeling) aspects and that the relationship can be analyzed according to the relative strength or weakness of these dimensions in relation to each other and in relation to the strength of activity and affect manifested in other primary relationships.

The measures of each R's closeness of relationship with his parents do not exactly parallel the indices of closeness with friends described above. However, measures of both affect and activity components were involved in deriving a conception of closeness of family ties. Measures of the affective dimension included degree of confiding in parents about nine important problems. Rs were asked to indicate in whom they would confide about these issues given the following choices: close friends; parents; professor; minister, counselor or advisor; or none of these. Rs were asked to indicate a first, second, and least choice, thus enabling us to ascertain where parents lie along a continuum of potential confidantes for different problems.

In addition, 12 questions were included that were concerned with assessing the quality of each R's interaction with his parents. Rs indicated how frequently they talked with their parents about 12 issues related to important things going on in the R's life, the parents' lives, and in the external world. A thirteenth item obtained each R's perception of how closely his and his parents' ideas agree. A third index of the affective dimension consisted of 10 items measuring the R's feelings about his family and home life.

The activity dimension of R's relationship with his parents was measured by six items that asked each R to indicate frequency of contact with parents in the form of letters, phone calls and home visits during the school year. These measures directly pertain to a test of hypothesis three.

Participation in organizations. A measure of R's participation in organizations may seem incongruent with the other measures of primary relationships discussed here. But it has been included in our definition of interpersonal involvement because organizational membership, while not necessarily primary in nature, may provide a context for the formation of primary ties. It is contended that a person oriented person will both have more close ties with others, and that he will also take advantage of opportunities to form additional ties through membership in clubs and associations than will a non-person oriented person.

Three questions were included in the interview to explore the extent of R's participation in organizations. The first question asked whether he belonged to any campus organizations. The second question pertained to intensity of involvement and active participation in the organization. Each R was asked whether he held any offices in his clubs and associations. Question three asked whether he belonged to any organizations off-campus. These

indices of extent of involvement in organizations were utilized in a test of hypothesis four.

Statistical Analysis

The sample was analytical rather than representational in nature (see Riley, 1963). The present study was concerned with two narrowly defined populations--students in engineering or in secondary education. Rs were matched on several variables that have been found to be related to friendship patterns and primary relations in order to increase the probability that differences between the two groups would be related to vocational choice.

The measures employed in the present study provide both nominal and ordinal data. Statistical treatment of nominal data utilized the Chi-Square test and the Phi Coefficient. Analyses of ordinal relationships were made by non-parametric tests of ordinal association, such as Kendall's rank order correlation coefficient (τ) and Spearman's rank order correlation coefficient (ρ). The accepted level of significance was .05. Although null hypotheses were not explicitly stated, each test was considered, in effect, an evaluation of the hypothesis of no association.

CHAPTER III

PRESENTATION AND INTERPRETATION OF FINDINGS

Introduction

The objective of this study was to explore the primary relationships of college students. Anne Roe's theory of vocational choice provided a basis for expecting differences in interpersonal relations between students in different types of curricula (person oriented and non-person oriented). The concept of interpersonal involvement was developed as a means of measuring differences in primary relationships between a group of engineering (non-person oriented) students and education (person oriented) students. Four hypotheses related to different areas of interpersonal involvement were formulated in order to test for differences in reported person orientation between the two groups of students.

This chapter is divided into four sections. In the first section, descriptive data on friendship relations is presented. Data on number of friends and formation of friendships is included. The second section summarizes findings on the affective and activity dimensions of friendship. The third section focuses upon family relations. The final section deals with findings concerning organizational affiliation. Much of the data which is reported is used to test specific hypotheses. Where appropriate, the tests of each hypothesis are described and interpretations of the results of these tests are made.

Descriptive Data on Friendship

The 40 Rs cited a total of 373 friends. Of these, 148 were named by engineering Rs, and 225 by education Rs. The number of friends listed ranged

from a single close friend to as many as 23. On the average, 9.3 close friends, of whom 5.6 were local units and 3.7 nonlocal, were cited. A similar breakdown by major showed engineering majors naming an average of 7.4 friends; 5.1 local and 2.3 nonlocal units. The corresponding figures for education majors were 11.2 friends; 6.1 local and 5.1 nonlocal units. The number of friends cited by education Rs was more widely distributed than was true of engineering Rs. In no case did engineering Rs report more than 12 close friends. Seven of the 20 education Rs, however, reported 12 or more close friends.

From the 373 friends Rs were asked to indicate their three closest and two least close friends. The interviewer then proceeded to obtain additional data on these five individuals. If fewer than five close friends were listed, information was obtained on all friendships and R was asked to rank his friends according to his closeness to them.¹ The data reported below refers only to the 185 friends who were cited as closest or least close by the 40 Rs.

These friends ranged in age from 19-55 years. Approximately 87 per cent of the 116 closest friends fell into the same age categories as the Rs (19-23 years) while slightly fewer (78 per cent) of the 69 least close units were the same age as the Rs. Engineering Rs were slightly more likely than education Rs to name as their closest friends individuals who were the same age (approximately 87 per cent of friends as compared with 85 per cent of friends, respectively). More of the engineering Rs' least close friends were older than the R.

It would seem logical to assume that the number of semesters a R has

¹Seven Rs, four engineers and three educators, listed fewer than five friends.

spent at KSU would have a bearing on the number of friends he has made there. However, no apparent relationship was observed between number of semesters at KSU and number of friends, or between transfer status (whether or not R is a transfer student) and number of friends named. Likewise, transfer status did not appear to be related to proportion of local as opposed to nonlocal friends that were cited. The data further showed that across all friendships a close friend was as likely to be local as nonlocal. However, there were differences between the two groups of Rs in proportion of local as opposed to nonlocal friends that were named. Regardless of whether or not they were transfer students, education majors were more likely to cite more nonlocal individuals as both closest and least close friends. Engineers listed more local friends in both categories. Further comparisons revealed no relationship between fraternity membership and number of friends or rural-urban status and number of friends named by the R.

Rs provided fairly detailed information on the formation of their closest and least close friendships. Data on how long the friend had been known, where the friend was met and how the friend was met were collected. Table 1 shows that approximately 68 per cent of the 116 closest friends had been known for 5 years or less. This five-year span corresponds closely to that period of time covering the high school and college experiences of the Rs, emphasizing the school setting as a crucial context for making friends. About 70 per cent of all least close friends knew each other for five years or less, and the remaining 30 per cent had known each other for 6-15 years. Education Rs reported having known their closest friends for a somewhat longer period of time than did the engineering Rs. Both groups had met most of their friends within the previous five years. This span of time, however,

TABLE 1
DISTRIBUTION OF RESPONSES ACCORDING TO LENGTH OF TIME CLOSEST
VERSUS LEAST CLOSE FRIENDS HAD BEEN KNOWN

Length of Time Known	Engineers' Friends			Educators' Friends			All Friends					
	Closest N	Least Close N	%	Closest N	Least Close N	%	Closest N	Least Close N	%			
Less than one year	5	7	.21	2	.035	1	.03	7	.06	8	.12	
One-two years	12	6	.18	11	.18	4	.11	23	.20	10	.14	
Two-three years	26	10	.29	11	.18	9	.26	37	.32	19	.28	
Four-five years	2	2	.06	10	.17	9	.26	12	.10	11	.16	
Six-seven years	4	2	.06	9	.15	7	.20	13	.11	9	.13	
Eight-nine years	3	.055	1	.03	2	.03	0	.00	5	.04	1	.01
Ten-twelve years	3	.055	3	.085	10	.17	1	.03	13	.11	4	.06
Thirteen-fifteen years	0	.00	3	.085	2	.035	0	.00	2	.02	3	.04
Sixteen + years	1	.02	0	.00	3	.05	4	.11	4	.04	4	.06
Totals	56	100	34	100	60	100	35	100	116	100	69	100
<div>\bar{X} = 3.50 yr. mdn = 3.00 yr. mode = 2.50 yr.</div> <div><div>5.83 yr.</div><div>4.76 yr.</div><div>4.88 yr.</div></div> <div><div>5.54 yr.</div><div>4.00 yr.</div><div>2.50 yr.</div></div> <div><div>5.50 yr.</div><div>4.00 yr.</div><div>2.50 yr.</div></div> <div><div>1.50 &</div><div>2.50 yr.</div><div>4.50 yr.</div></div>												

included 80 per cent of the engineers' closest friends, but only 57 per cent of the closest friends cited by education Rs. Only 20 per cent of the engineers' closest friends had been known for 6 years or more, while education Rs reported having known 43 per cent of their closest friends longer than five years.

Table 1 indicates that in addition to having known closest friends longer, education majors had known least close friends for a longer period of time than had engineering majors. Thirty-four per cent of the educators' least close friends as compared with 26 per cent of the least close friends named by engineers had been known for more than five years.

The finding that engineers had known both their closest and least close friends for a shorter period of time than had educators corresponds with the finding that engineers tended to name primarily local friends (those that have been met largely in the university setting) in both closest and least close categories, while educators named primarily nonlocal friends.

A close examination of Table 1 reveals that friends indicated as least close by engineering Rs tended to have been known for a longer period of time than persons regarded as closest friends. Twenty-six per cent of the engineers' least close friends as compared with 20 per cent of the friends listed as closest by engineering Rs had been known for longer than five years. There was a tendency in the opposite direction in the case of education Rs, who had known 43 per cent of their closest friends for longer than five years, but had known only 34 per cent of their least close friends for that length of time.

When the data were analyzed according to whether the friend was local or nonlocal, regardless of his closeness to the R, it was found that 84 per cent

of the local friends had been known by the R for three years or less, while 73 per cent of the nonlocal friends had been known longer than three years (see Table 2). As one would expect, Rs for the most part had known their nonlocal friends for a longer period of time than their local friends. Education Rs reported having known both local and nonlocal friends for a longer period of time than did the engineering Rs. Ninety-three per cent of the engineers' local friends as compared with 67 per cent of the educators' local friends had been known for three years or less. The corresponding figures for nonlocal friendships were 35 per cent of the engineers' friends and 22 per cent of the friends listed by educators.

In order to analyze data on where friends were met, information obtained from the Rs in this regard was broken down into two categories--met friend at the university, and met friend in my hometown. The results are summarized in Table 3. As indicated in Table 3, approximately half of the 185 closest and least close friends were met at the university. However, there were differences with regard to contexts in which closest as opposed to least close friendships were formed. Across all Rs, closest friends were met primarily in the university setting, especially as a result of living in the same residence with the friend. The R's hometown provided the most frequent context for initiating least close friendships.

In addition, there were differences between engineering majors and education majors with regard to where friends were met. Engineering Rs were more likely than education Rs to form new friendships, both closest and least close, at the university. As Table 3 shows, approximately 65 per cent of the friends cited by engineers were met at the university as compared with 34 per cent named by educators. On the other hand, educators reported having met a

TABLE 3

DISTRIBUTION OF RESPONSES ACCORDING TO WHERE CLOSEST
VERSUS LEAST CLOSE FRIENDS WERE MET

Where Met	Engineers' Friends				Educators' Friends				All Friends									
	Closest		Least		Closest		Least		Closest		Least							
	N	%	N	%	N	%	N	%	N	%	N	%						
AT UNIVERSITY*	40	.72	19	.55	59	.65	22	.36	11	.31	33	.34	62	.54	30	.43	92	.49
Classroom	5	.09	2	.05	7	.08	6	.10	3	.08	9	.09	11	.095	5	.07	16	.09
Residence	27	.48	11	.32	38	.42	12	.20	6	.17	18	.19	39	.345	17	.245	56	.30
Party or social event	1	.02	0	.00	1	.01	0	.00	1	.03	1	.01	1	.01	1	.015	2	.01
Club or organization	5	.09	3	.09	8	.09	3	.05	1	.03	4	.04	8	.07	4	.06	12	.06
Church	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
Work	2	.04	3	.09	5	.05	1	.01	0	.00	1	.01	3	.02	3	.04	6	.03
HOMETOWN*	16	.28	15	.45	31	.35	38	.64	24	.69	62	.66	54	.46	39	.57	93	.51
High school	2	.04	2	.06	4	.045	6	.10	5	.14	11	.12	8	.07	7	.10	15	.08
Junior high	4	.06	1	.03	5	.06	3	.05	3	.085	6	.065	7	.06	4	.063	11	.06
Grade school	1	.02	5	.15	6	.07	5	.085	2	.06	7	.075	6	.05	7	.10	13	.07
Church	2	.04	2	.06	4	.045	1	.015	2	.06	3	.03	3	.02	4	.063	7	.04
Work	2	.04	0	.00	2	.02	4	.07	1	.035	5	.05	6	.05	1	.015	7	.04
Neighborhood	5	.08	1	.03	6	.07	9	.15	5	.14	14	.15	14	.12	6	.09	20	.11
Club or organization	0	.00	2	.06	2	.02	4	.07	3	.085	7	.075	4	.035	5	.07	9	.05
Party	0	.00	0	.00	0	.00	2	.03	0	.00	2	.02	2	.02	0	.00	2	.01
"Hometown"	0	.00	2	.06	2	.02	4	.07	3	.085	7	.075	4	.035	5	.07	9	.05
Totals	56		34		90		60		35		95		116		69		185	

* The N's and percentages cited in the two major categories (at university and hometown) include the subcategories listed.

greater proportion of their friends in various contexts at home (education Rs, 66 per cent and engineering Rs 35 per cent). This finding is consistent with the results reported above which indicated that education Rs tended to have known their friends longer than had engineering Rs, and that most of the educators' friends were nonlocal.

Apparantly, the educators' friendships were more stable (long-lasting) than those of engineers, whose associations were primarily recently formed within the university setting. This finding seems to make sense in view of Roe's hypothesis. Persons who are genuinely interested in others perhaps form different kinds of relationships than non-person oriented individuals. Stability of a relationship is an important dimension along which the associations of different types of individuals may vary. Another dimension is closeness of a relationship, to be examined later in this thesis.

The university not only provided an important context in which new friendships were initiated, but also appeared to be a place where previously formed friendships, particularly those of education Rs, were maintained and continued. Approximately 16 per cent of the 96 local friends cited were persons originally met at home, the friendship continuing at the university. Table 4 clearly indicates that education Rs named more university friends whom were met at home than did engineering Rs (approximately 30 per cent and 7 per cent, respectively). Except for this difference, engineers and educators were similar in having formed the majority of their local friendships at the university and most of their nonlocal friendships in their hometown. The 11 nonlocal friends that were met at the university were all friends of transfer students whom had been met at the R's previous college.

Rs provided fairly extensive information on how each of their friends

TABLE 4
DISTRIBUTION OF RESPONSES ACCORDING TO WHERE LOCAL
VERSUS NONLOCAL FRIENDS WERE MET

Where Met	Engineers' Friends				Educators' Friends				All Friends									
	Local N %	Nonlocal N %	Total N %		Local N %	Nonlocal N %	Total N %		Local N %	Nonlocal N %	Total N %							
At university	55	93	4	13	59	65	26	70	7	12	33	34	81	84	11	12	92	49
Hometown	4	7	27	87	31	35	11	30	51	88	62	66	15	16	78	88	93	51
Totals	59	100	31	100	90	100	37	100	58	100	95	100	96	100	89	100	185	100

were met. Responses were placed under one of the nine categories included in Table 5. Two of the ten categories--met through another friend and met spontaneously--accounted for approximately 56 per cent of the closest friends listed and about 61 per cent of the 69 least close friends named by all Rs. The rest of the friends were fairly evenly distributed over the remaining eight categories.

As Table 5 indicates, both engineering and education Rs tended to meet the majority of their friends in the two ways described above. However, there were differences between the two groups in this respect. Engineering Rs, for example were somewhat more likely than education Rs to report meeting friends spontaneously, and slightly less likely to meet friends through another friend.

To analyze in more detail how friends were met, nine of the categories were collapsed into three, as follows:²

1. Friendships formed through personal contact or through introduction by a third intimate party.
 - a. met friend through a family member
 - b. met friend through another friend
 - c. met friend by a third party with whom R was acquainted (e.g., boss at work)
2. Friendships formed through an organized gathering or because both are participating in an organization which brings them together.
 - a. met friend in the classroom
 - b. introduced at a party
 - c. shared the same residence
 - d. met friend in an organized group
3. Friendship formed in a purely spontaneous fashion
 - a. met friend while playing
 - b. spontaneous (e.g., R said we just started running around together)

An examination of Table 6 indicates that both engineers and educators had met

²The "not available" category was eliminated in this analysis.

TABLE 5

DISTRIBUTION OF RESPONSES ACCORDING TO HOW CLOSEST
VERSUS LEAST CLOSE FRIENDS WERE MET

How Met	Engineers' Friends				Educators' Friends				All Friends			
	Closest N	%	Least Close N	%	Closest N	%	Least Close N	%	Closest N	%	Least Close N	%
Through a family member	1	2	3	9	5	8	3	9	6	5	6	9
Introduced by a friend	13	23	12	35	14	23	16	46	27	23	28	41
Introduced by a third party	3	5	2	6	4	7	6	17	7	6	8	12
In class together	7	13	4	12	6	10	1	3	13	11	5	7
At a party together	0	0	0	0	2	3	0	0	2	2	0	0
In the same college residence	0	0	1	3	1	2	0	0	1	1.5	1	1
Playing together	5	9	2	6	8	13	4	11	13	11	6	9
Through belonging to the same organization	3	5	1	3	4	7	0	0	7	6	1	1
Spontaneously	24	43	9	26	15	25	5	14	39	33	14	20
Not available	0	0	0	0	1	2	0	0	1	1.5	0	0
Totals	56	100	34	100	60	100	35	100	116	100	69	100

most of their closest friends spontaneously, while least close friends were met primarily through the channel of personal contact. However, engineering Rs were slightly more likely than education Rs to have met both closest and least close friends spontaneously and slightly less likely to have been introduced to their friends through a third party. Generally, more of the Rs' closest friends were met in organized settings such as clubs and the classroom than were least close friends.

Table 7 shows that when local and nonlocal friendships were considered regardless of the closeness of the friendship, no major differences between the two were found in terms of how friends were met. There was a slight tendency for both local and nonlocal friends of education Rs to have been met primarily through personal contact. A spontaneous meeting of friends followed closely in frequency, and the smallest proportion of friendships were initiated as a result of participation in organized settings. Engineering Rs differed slightly from education Rs in their greater tendency to have formed nonlocal friendships spontaneously rather than through a third party.

In summary, when all friendships were analyzed according to the intimacy and proximity (local-nonlocal) of the relationship, it was found that factors in the formation of friendships were useful in distinguishing between engineers' and educators' ties with closest and least close friends, local and nonlocal friends. The educators originally met most of their friends in their hometown through a third intimate party. Although some of their hometown friendships were continued when both parties came to the university, most of the educators' friends were not present in the R's university environment. On the other hand, the engineer, as compared with the educator, had met his friends more recently and in a more spontaneous fashion. The

TABLE 6
DISTRIBUTION OF RESPONSES ACCORDING TO MAJOR CATEGORIES OF
HOW CLOSEST VERSUS LEAST CLOSE FRIENDS WERE MET

How Met	Engineers' Friends				Educators' Friends				All Friends			
	Closest N %	Least Close N %	Total N %		Closest N %	Least Close N %	Total N %		Closest N %	Least Close N %	Total N %	
1. Through personal contact or through introduction by a third intimate party	17 30	17 50	34 37		23 38	25 72	48 50		40 34	42 62	82 44	
2. Through an organized gathering or because of participation in a common organization	10 18	6 18	16 17		13 22	1 3	14 14		23 21	7 9	30 16	
3. In a spontaneous fashion	29 52	11 32	40 46		24 40	9 25	33 36		53 45	20 29	73 40	
Totals	56 100	34 100	90 100		60 100	35 100	95 100		116 100	69 100	185 100	

TABLE 7
DISTRIBUTION OF RESPONSES ACCORDING TO HOW LOCAL VERSUS
NONLOCAL FRIENDS WERE MET

How Met	Engineers' Friends			Educators' Friends			All Friends		
	Local N %	Nonlocal N %	Total N %	Local N %	Nonlocal N %	Total N %	Local N %	Nonlocal N %	Total N %
1. Through personal contact or through introduction by a third intimate party	25	42	9 30 34 38	19	52	29 50 48 50	44	46	38 43 82 44
2. Through an organized gathering or because of participation in a common organization	10	17	6 19 16 18	5	13	9 15 14 15	15	16	15 16 30 16
3. In a spontaneous fashion	24	41	16 51 40 44	13	35	20 35 33 35	37	38	36 41 73 40
Totals	59	100	31 100 90 100	37	100	58 100 95 100	96	100	89 100 185 100

majority of the engineers' friends, moreover, were at the university (local).

The differences that were found between engineers and educators in their formation of friendship ties may be viewed in terms of Roe's theory. Two patterns emerge from the data: On the one hand, educators, as person oriented individuals, have formed more lasting relationships with persons in their hometown whom they have met largely as a result of a common bond with another friend; they are part of a close-knit, continuing web of friendships. On the other hand, engineers have more recently and somewhat more independently formed such close ties with others. Perhaps their relationships are more fleeting, more transient than those of educators.

Disregarding R's major, closest friendships differed from least close friendships in two major ways. The R was more likely to have formed his closest ties with other individuals at the university. In addition, the friendship was more frequently initiated spontaneously as compared with least close friendships.

The data described above on number of friends listed by Rs was important to a test of differences between engineers and educators with respect to interpersonal involvement. Hypothesis one was formulated in order to test for quantitative differences in extent of friendship ties. Hypothesis one stated that:

Engineering Rs will report fewer close friends than
Secondary Education Rs.

Hypothesis one was tested by counting the number of friends originally cited by each R when asked to list the first names or initials of those persons he regarded as close friends. As indicated earlier, the 40 Rs listed a total of 373 friends. Engineering Rs cited 148 friends, or an average of 7.4 units, 5.1 of whom were local and 2.3 nonlocal. Education Rs listed 225 friends, or

an average of 11.2. Of the 11.2 friends, 6.1 were local and 5.1 nonlocal.

Chi Square was used as the statistical test of significance, and the contingency coefficient was computed as a measure of the strength of association between academic major and number of friends. The data on number of friends listed by all 40 Rs was dichotomized at the median number of friends. Number of friends above the median were labeled "many" and those below the median were "few". Table 8 reveals that significantly more engineers than educators listed few friends. Thus, it appears that Hypothesis one was confirmed by the present data.

TABLE 8
DIFFERENCES BETWEEN ENGINEERS AND EDUCATORS WITH
RESPECT TO NUMBER OF FRIENDS LISTED

	Engineers	Educators	Total
<u>Rs</u> who listed few friends *	15	8	23
<u>Rs</u> who listed many friends **	<u>5</u>	<u>12</u>	<u>17</u>
Totals	20	20	40

$$\chi^2 = 5.01; p \leq .05$$

$$d.f = 1^{***}$$

$$\phi = .354$$

* Rs that listed fewer friends than the median number of friends named by the total sample.

** Rs that listed more friends than the median number of friends.

*** d.f = 1 in all comparisons in this thesis.

In order to determine whether the apparent relationship between academic major and number of friends was a spurious one, controls were introduced for several variables that seemed critical to the variable of number of friends. The first control, number of semesters at KSU, was introduced because of the almost obvious relationship between amount of time spent at the university and accumulation of friends there. It was found that in spite of the fact that engineering Rs had been at KSU slightly longer than education Rs, they listed fewer friends.³ It is interesting to note, however, that engineering Rs named proportionately more local friends than did education Rs. The same logic was used in controlling for transfer status of the R. Again, the relationship between major and number of friends remained, regardless of whether or not the R was a transfer student. Since there is reason to believe that the primary ties of urban individuals may differ in several respects from those of persons with a rural background, it was decided to control for this variable. Both rural and urban engineers, however, listed fewer friends than rural and urban educators.

Finally, additional variables that are in this study regarded as components of interpersonal involvement were introduced as controls. It seemed reasonable to assume that variables such as organizational affiliation, fraternity membership and relationship with parents may be related to number of friends. Perhaps a R that is active in a fraternity, for example, is more likely than his unaffiliated counterpart to have many friends, regardless of whether he is an engineer or educator. It was found that none of these variables--fraternity membership, organizational affiliation, frequency of

³See Appendix C for a biographical sketch of the Rs.

interaction with parents, feelings about parents, or quality of relationship with parents--caused the original relationship between R's major and number of friends to disappear. It appears that indeed, academic major is significantly related to number of friends named by a R.

Affect and Activity in Friendship

Earlier a primary friend was defined as one with whom the R is predisposed to enter into a wide range of activities and his predisposition to do so is associated with a preponderance of positive affect. The activity and affect dimensions each were used as indices of the closeness of a friendship in order to test for differences between engineers and educators in the closeness they maintained with friends. Hypothesis 2 stated that:

Engineering Rs will report less close relations
with close friends than Secondary Education Rs.

The activity and affective dimensions of friendship were measured separately and will be considered separately in the discussion below. A final section will be concerned with the relation between activity and affect in friendship.

Activities and friendship. To obtain information on the sharing of activities with friends, Rs were given a sheet of paper on which were listed 18 different activities. They were asked to indicate which of the activities they had engaged in with each of their three closest and two least close friends. The responses provided by Rs formed a Guttman scale (C.R. = .86).⁴ Thus, rather than having to evaluate each item separately, it was possible to

⁴Response patterns falling between .85 and .90 Guttman calls quasi-scales. If a sufficient number of items are included in the scale and a fairly even distribution of scale types is achieved, one may reasonably assume that the scale is approaching unidimensionality (in Guttman's sense) and the scale is usable.

work with "activity scores" which were derived from the pattern of responses given to the entire set of activity items. Moreover, each friendship was assigned an activity score and could be placed on a scale relative to all other friendships.⁵

When the 18 activities were ranked according to the frequency with which Rs engaged in that activity, a highly significant association ($Rho = .96$) was observed between the rankings of engineers' activities and rankings of educators' activities. It seems reasonable to conclude from these data that the activity items included in the schedule were meaningfully related to the kinds of things friends do together.

The activity scores for all friendships were analyzed both in terms of R's academic major and degrees of intimacy of the friendship. Measures of central tendency for all of these categories of friends were computed and are summarized in Table 9. It is important to note that the activity scores should be interpreted inversely; that is, a low numerical score indicates a high activity score. An examination of the mean scores indicates that both engineers and educators reported engaging in more activities with closest friends than with least close friends. To statistically compare less intimate and most intimate friends by number of activities shared with Rs, the two categories of friends were divided into those friends who fell below and above the median activity score for the entire sample of friends.

Differences were observed between shared activities with closest and least close friends. The differences, however, were statistically

⁵The referrent for activity scores was the dyad (R and each of his friends). The scale score achieved by each friendship was assigned as the activity score for that friendship.

TABLE 9
DIFFERENCES BETWEEN ENGINEERS AND EDUCATORS ACCORDING TO
AVERAGE ACTIVITIES SCORES OBTAINED IN MOST INTIMATE
VERSUS LESS INTIMATE FRIENDSHIPS

	Engineers	Educators	All Rs
Closest friendships	$\bar{X} = 6.75$ mdn = 5.00 mode = 3.00	$\bar{X} = 7.12$ mdn = 7.00 mode = 7.00	$\bar{X} = 6.94$ mdn = 6.00 mode = 1.00
Least close friendships	$\bar{X} = 10.94$ mdn = 12.00 mode = 13.00	$\bar{X} = 8.86$ mdn = 9.00 mode = 7.00	$\bar{X} = 9.88$ mdn = 10.00 mode = 7.00
All friendships	$\bar{X} = 8.43$ mdn = 7.00 mode = 3.00	$\bar{X} = 7.82$ mdn = 7.00 mode = 7.00	$\bar{X} = 8.11$ mdn = 10.00 mode = 7.00

significant only for the entire sample and for the sample of engineers' friends (see Tables 10-10B). Although there was a tendency in the predicted direction for the educators' friends, the difference was not a significant one. Thus, both engineering majors and education majors exhibited a propensity to engage in many activities with closest friends and few activities with least close friends.⁶ However, the difference achieved statistical significance only for engineering Rs, who were more likely than education Rs to engage in more activities with closest and fewer activities with least close friends. The activity dimension didn't seem to be as critical an element in defining closeness of the educators' friendships.

Of greater relevance for hypothesis 2 were differences between engineers and educators in sharing activities with friends regardless of the degree of

⁶A different level of analysis, by R, revealed that Rs who engaged in many activities with closest friends also tended to engage in many activities with least close friends.

TABLE 10

DIFFERENCES REPORTED BY ENGINEERING RS WITH RESPECT TO SHARED
ACTIVITIES WITH CLOSEST VERSUS LEAST CLOSE FRIENDS

	Engineers' Friendships		
	Closest	Least Close	Total
<u>R</u> and his friends engage in many activities	37	10	47
<u>R</u> and his friends ^{**} engage in few activities	<u>17</u>	<u>26</u>	<u>43</u>
Totals	54	36	90

$\chi^2 = 14.369; p < .001$
 $\phi = .3995$

TABLE 10A

DIFFERENCES REPORTED BY EDUCATION RS WITH RESPECT TO SHARED
ACTIVITIES WITH CLOSEST VERSUS LEAST CLOSE FRIENDS

	Educators' Friendships		
	Closest	Least Close	Total
<u>R</u> and his friends engage in many activities	34	17	51
<u>R</u> and his friends engage in few activities	<u>23</u>	<u>21</u>	<u>44</u>
Totals	57	38	95

$\chi^2 = 2.039; N.S.$
 $\phi = .1465$

* Many activities is defined as an activities score above the median activities score for the entire sample.

** Few activities is defined as an activities score below the median activities score for the entire sample.

TABLE 10B
DIFFERENCES REPORTED BY ALL RS WITH RESPECT TO SHARED ACTIVITIES
WITH CLOSEST VERSUS LEAST CLOSE FRIENDS

	All Friendships		Total
	Closest	Least Close	
R and his friends engage in many activities	71	27	98
R and his friends engage in few activities	<u>40</u>	<u>47</u>	<u>87</u>
Totals	111	74	185
$\chi^2 = 13.456; p < .001$ $\phi = .2697$			

intimacy of the friendship. The mean activity scores for both groups (see Table 9) indicate that educators tended to engage in more activities with friends than did engineers. To analyze the difference statistically, the friends of the two groups were divided at the median activity score for the entire sample of friends. A Chi Square, summarized in Table 11, failed to show a significant difference between engineers and educators in sharing activities with friends.

The findings reported above reinforce the initial assumption that the activity dimension of primary relationships is an important element in defining such ties. The activity score seemed to distinguish between degrees of primariness (closest-least close) of friendship relationships, although with less sensitivity for educators as opposed to engineers. However, these data fail to support hypothesis 2.

TABLE 11
DIFFERENCES BETWEEN ENGINEERS AND EDUCATORS WITH RESPECT
TO DEGREE OF SHARING ACTIVITIES WITH FRIENDS

	Engineers	Educators	Total
Friendships in which many activities were shared	47	51	98
Friendships in which few activities were shared	<u>43</u>	<u>44</u>	<u>87</u>
Totals	90	95	185
$\chi^2 = .039; \text{N.S.}$ $\phi = .015$			

Affect in friendship. The second component for measuring closeness of the primary friendship concerned affective ties between persons. It was assumed that there would be differences between engineers and educators in the affective dimension of their ties with friends.

Four types of affect measures were employed. The Rs were asked:

1. To indicate whether or not they had ever confided in their friends about:
 - a. embarrassing experiences on dates
 - b. problems with parents
 - c. troubles that members of the family are in
 - d. difficulties with school work
 - e. serious financial difficulties
 - f. personal problems
 - g. sexual experiences
 - h. ideas and plans for marriage
 - i. goals and plans for the future
2. If they would be willing and, in fact, actually had borrowed money from their friends
3. If they "felt free to let their hair down and just be themselves" with their friends
4. If they had exchanged home visits with friends.

The data obtained from these items are presented, in order, in the following sections.

Confiding and friendship. The responses provided by the Rs to each of the nine confiding items formed a Guttman scale (C.R. = .88). The scale score achieved by each friendship was assigned as the confiding score for that friendship. Means and medians were derived from the confiding scores for the various categories of friendships (by academic major of the R and by degree of intimacy of the friendship). These data are summarized in Table 12.

TABLE 12
DIFFERENCES BETWEEN ENGINEERS AND EDUCATORS ACCORDING TO
AVERAGE CONFIDING SCORES OBTAINED IN INTIMATE
VERSUS LESS INTIMATE FRIENDSHIPS

	Engineers	Educators	All <u>Rs</u>
Closest friendships	$\bar{X} = 3.18$ mdn = 3.00 mode = 1.00	$\bar{X} = 2.89$ mdn = 2.00 mode = 1.00	$\bar{X} = 3.03$ mdn = 3.00 mode = 1.00
Least close friendships	$\bar{X} = 4.91$ mdn = 5.00 mode = 5.00	$\bar{X} = 4.94$ mdn = 5.00 mode = 6.00	$\bar{X} = 4.92$ mdn = 5.00 mode = 5.00
All friendships	$\bar{X} = 3.87$ mdn = 4.00 mode = 1.00	$\bar{X} = 3.71$ mdn = 4.00 mode = 1.00	$\bar{X} = 3.79$ mdn = 4.00 mode = 1.00

As with activity scores, a low numerical score indicates a high confiding score. An examination of Table 12 shows that both engineers and educators confided in closest friends to a greater extent than they confided in least close friends.⁷ This relationship was tested statistically by the Chi Square. The median confiding score for the entire sample of friends was used to

⁷A R by R analysis indicated that Rs who confide highly in closest friends also tend to confide highly in least close associates.

divide both closest and least close friendships into high and low confiding categories. The differences, as shown in Tables 13-13B, were statistically significant both across and within both groups of Rs. This finding tends to support the validity of the nine confiding items for measuring degree of primariness of a relationship.

Although degree of confiding in friends significantly distinguished between close and least close ties across all friendships, no significant differences were observed between engineers and educators in their tendency to confide in friends (see Table 14). Table 12, however, reveals that education Rs were slightly more likely than engineering Rs to confide more in closest friends and less in least close friends. The data again failed to support hypothesis 2.

The nine confiding items were analyzed in an additional way. The findings reported above indicate the significance of shared confidences in friendship. Is there, however, a relationship between the relative importance (as perceived by the R) placed upon the various concerns included in the list of confiding items, and the degree to which these items are predictive of affective ties? To obtain an indicator of relative importance the Rs were asked to rank the nine items in terms of which would cause them the greatest worry and concern. Separate overall rankings by importance of the nine items were then obtained for all Rs, engineering Rs and education Rs, by summing the ranks provided by Rs for each item. Also the items were ranked by decreasing affective significance using the final order of items as indicated in the confiding scales. These data are found in Table 15.

This procedure allowed tests of association to be made between the relative importance placed on an item and its discriminatory power as an

TABLE 13

DIFFERENCES REPORTED BY ENGINEERING RS WITH RESPECT TO
CONFIDING IN CLOSEST VERSUS LEAST CLOSE FRIENDS

	Engineers' Friendships		
	Closest	Least Close	Total
Friendships in which there was a high degree of confiding*	39	15	54
Friendships in which there was a lesser degree of confiding**	<u>15</u>	<u>21</u>	<u>36</u>
Totals	54	36	90

$$\chi^2 = 8.402; p < .01$$

$$\phi = .305$$

TABLE 13A

DIFFERENCES REPORTED BY EDUCATION RS WITH RESPECT TO
CONFIDING IN CLOSEST VERSUS LEAST CLOSE FRIENDS

	Educators' Friendships		
	Closest	Least Close	Total
Friendships in which there was a high degree of confiding	41	13	54
Friendships in which there was a lesser degree of confiding	<u>16</u>	<u>25</u>	<u>41</u>
Totals	57	38	95

$$\chi^2 = 13.223; p < .001$$

$$\phi = .373$$

*Rs who obtained a confiding score above the median score for the entire sample were classified as high confiders.

**Rs who obtained a confiding score below the median score for the entire sample were classified as low confiders.

TABLE 13B

DIFFERENCES REPORTED BY ALL RS WITH RESPECT TO CONFIDING
IN CLOSEST VERSUS LEAST CLOSE FRIENDS

	All Friendships		Total
	Closest	Least Close	
Friendships in which there was a high degree of confiding	80	28	108
Friendships in which there was a lesser degree of confiding	<u>31</u>	<u>46</u>	<u>77</u>
Totals	111	74	185
$\chi^2 = 21.415; p < .001$ $\phi = .340$			

TABLE 14

DIFFERENCES BETWEEN ENGINEERS AND EDUCATORS WITH RESPECT
TO DEGREE OF CONFIDING IN FRIENDS

	Engineers	Educators	Total
Friendships in which there was a high degree of confiding	54	54	108
Friendships in which there was a lesser degree of confiding	<u>36</u>	<u>41</u>	<u>77</u>
Totals	90	95	185
$\chi^2 = .189; N.S.$ $\phi = .032$			

indicator of affect, both between and within groups of Rs. Also it became possible to examine the relationship between engineers' and educators' responses to the importance and to the affect items. The Spearman Rank Order Correlation test (Rho) was used as the measure of association. The correlation coefficients obtained are found at the bottom of Table 15.

There appeared to be a consistent and significant association both between engineers' and educators' responses to the affect items and between their rankings of the items by importance. However, no relationship was observed between the efficiency of the items as indicators of affect and the relative importance placed on them by Rs. For education Rs the correlation between confiding and importance was positive but small (Rho = .20); for engineering Rs, a negative association was observed (Rho = -.07). The ranking by importance by all Rs correlated with the ranking of items by affect at .11. A logical interpretation of these data would be that affect and relative importance are separate dimensions which may vary independently of one another. One concern (e.g., troubles that members of the family are in) may be confided only to closest friends, while another (e.g., goals and plans for the future) may be discussed with many people regardless of the intimacy of the relationship and apparently regardless of the R's major. Nonetheless, both may be regarded as very important by the R.

Other measures of affect. The remaining measures of affect were analyzed separately. The results of the analyses are found in Appendix D. As with activity and confiding, most of these items tended to discriminate between closest and least close friends. Both engineering Rs and education Rs were likely to report feeling free to borrow money ($\chi^2 = 4.01$, $p < .05$, $\phi = .211$ and $\chi^2 = 5.05$, $p < .05$, $\phi = .230$ respectively) and to behave

TABLE 15
RANK ORDERING OF THE NINE ISSUE AND CONCERN ITEMS
BY IMPORTANCE AND CONFIDING ACROSS
AND WITHIN ACADEMIC MAJOR

Item	Importance Rank			Confiding Rank		
	Engi- neers	Educa- tors	All Rs	Engi- neers	Educa- tors	All Rs
1. Embarrassing experi- ences on dates	9	9	9	5	7	6
2. Problems with parents	4	5	5	3	2	2
3. Troubles that members of the family are in	2	2	2	1	1	1
4. Difficulties with school work	5	4	4	8	6	9
5. Serious financial difficulties	6	6	6	2	3	3
6. Personal problems	1	1	1	7	5	5
7. Sexual experiences	7	8	7.5	4	4	4
8. Ideas and plans for marriage	8	7	7.5	6	8	7
9. Goals and plans for the future	3	3	3	9	9	8

			Rho
Total importance	x	Engineers' importance	.98*
Total importance	x	Educators' importance	.99*
Engineers' importance	x	Educators' importance	.96*
Total confiding	x	Engineers' confiding	.92*
Total confiding	x	Educators' confiding	.90*
Engineers' confiding	x	Educators' confiding	.85*
Total importance	x	Total confiding	.113
Engineers' importance	x	Engineers' confiding	.20
Educators' importance	x	Educators' confiding	.07

* Significant at .05 or less.

spontaneously ($\chi^2 = 12.22$, $p < .001$, $\phi = .368$ and $\chi^2 = 3.94$, $p < .05$, $\phi = .204$ respectively) more frequently with closest friends than with least close friends. Only engineering Rs, however, reported actually having borrowed money more from closest friends than from least close associates ($\chi^2 = 5.47$, $p < .02$, $\phi = .305$ and $\chi^2 = 2.40$, n.s., $\phi = .255$ respectively). Both groups of Rs reported exchange of home visits with their friends regardless of the intimacy of the friendship. It appears that of the three additional affect items only two--borrowing money and behaving freely--successfully measured degree of primariness in friendship.

The data were then analyzed to test for engineer-educator differences in the three additional affect items. Chi Square tests revealed a significant difference between the groups of Rs only on the variable concerning exchange of home visits (see Table 16). Education Rs were more likely than engineering Rs to have taken their friends home for a visit regardless of the

TABLE 16
DIFFERENCES BETWEEN ENGINEERS AND EDUCATORS ACCORDING
TO EXCHANGE OF HOME VISITS WITH FRIENDS*

	Engineers	Educators	Total
<u>R</u> has taken friend home for a visit	21	21	42
<u>R</u> has not taken friend home for a visit	<u>38</u>	<u>16</u>	<u>54</u>
Totals	59	37	96
$\chi^2 = 4.138$; $p < .05$ $\phi = .208$			

* This data was obtained for local friends only.

intimacy of their relationship with the friend. This result seems to be directly related to the finding that educators listed more nonlocal, hometown, friends both as closest and least close, while the majority of engineers' friends were local.

These findings, along with the results reported above, lend little support to the hypothesis of differences between engineers and educators in degree of closeness with friends. The relationships that engineering Rs had with their friends appeared much the same as those of education Rs. If one accepts Roe's theory, however, differences would be expected between the closeness of the ties of non-person oriented as opposed to person oriented individuals. The results reported above would seem to raise some question about the validity of Roe's theory.

Affect and activity in friendship. In order to partially validate the initial assumption utilized in this thesis that affect and activity are related defining components of primary relationships, it was decided to test for actual degree of association between the two aspects. Moreover, in view of the present study's conception of closeness in friendship that includes both activity and affect as highly related indices, it was deemed essential to verify this assumption. Separately, both affect and activity successfully get at degree of intimacy of friendship ties, but are the two correlated with one another? The confiding scores assigned to each friendship were used as the measure of affect, and the activity scores assigned to each friendship completed the basic data needed to test for degree of association between affect and activity. The Kendall's tau coefficient (.288, $p < .001$), computed across all friendships was statistically significant far beyond the .05 level stipulated in Chapter II.

The data seem to validate the assumptions made in this thesis regarding the relation of affect and activity to primary friendship. Together, they constitute a valid and useful index of the intimacy of friendship ties.

One of the most basic constructs used in this study is that of interpersonal involvement discussed in Chapter I. It was suggested that the concept includes both a quantitative and a qualitative dimension, and that these are positively related. It was assumed that a high degree of interpersonal involvement would manifest itself in both the quantitative and qualitative spheres. For example, an individual with many friends would also maintain closer ties with friends. The data reported to this point provide a basis for beginning to examine the validity of the present conception of interpersonal involvement. There were clear differences between engineers and educators in number of friends (the quantitative aspect). However, both groups of Rs were similar in the kinds of ties they maintained with those persons they regarded as close associates.

Interpersonal involvement, though, may be viewed as essentially an individualistic, idiosyncratic style, and group trends could be obscuring individual differences. In order to analyze the concept in greater depth, all Rs were divided into four groups--those who confided to a high degree in their closest friend and who also had many friends;⁸ those who confided to a lesser degree in their closest friend and had many friends; Rs who had few friends and a high degree of confiding in their closest friend; and finally Rs who listed few friends and reported a low degree of confiding in closest friends.

⁸The median scores from the entire sample for confiding and for number of friends were used as the basis for dividing Rs into high and low confiding categories and into groups with many and few friends.

A 2 x 2 Chi Square was used as a statistical test of significance. The results of this analysis are summarized in Tables 17-17B. Briefly, no association between confiding (affect) and number of friends was found. A R who confided highly in his closest friend was as likely to name many friends as he was likely to name few friends; the same tendency can be observed for those few Rs who confided to a lesser degree in their closest friend.

A similar breakdown along the activity dimension of friendship indicated no relation between number of friends named by the R and the degree to which he engaged in activities with his closest friend. These data are presented in Tables 18-18B.

In this thesis, affect and activity both provide an index of closeness, or the qualitative aspect of interpersonal involvement, and number of friends represents the quantitative dimension of friendship. The comparisons reported above between affect and number of friends and activity and number of friends seem to bring into question the present conception of interpersonal involvement wherein the qualitative and quantitative aspects of primary ties are related.

In addition, R by R analyses, as reported above in footnotes 5 and 6, indicated that regardless of the R's major, individuals who confided to a high degree in closest friends tended to also confide to a high degree in less close friends. Likewise, both engineers and educators who engaged in many activities with closest friends engaged in many activities with less close associates. These findings raise some additional questions about the concept of the primary relationship used in this study. When the data were analyzed in the way described above, the activity and affect dimensions did not distinguish between most intimate and less intimate relationships.

TABLE 17

THE RELATIONSHIP BETWEEN DEGREE OF CONFIDING IN CLOSEST FRIEND
AND NUMBER OF FRIENDS CITED BY ENGINEERING RS

	Engineers		Total
	<u>Rs who named many friends</u>	<u>Rs who named few friends</u>	
<u>Rs who confided highly in closest friend</u>	5	12	17
<u>Rs who confided to a lesser extent in closest friend</u>	<u>0</u>	<u>3</u>	<u>3</u>
Totals	5	15	20
corr $\chi^2 = .130$; N.S. $\phi = -.242$			

TABLE 17A

THE RELATIONSHIP BETWEEN DEGREE OF CONFIDING IN CLOSEST FRIEND
AND NUMBER OF FRIENDS CITED BY EDUCATION RS

	Educators		Total
	<u>Rs who named many friends</u>	<u>Rs who named few friends</u>	
<u>Rs who confided highly in closest friend</u>	10	6	16
<u>Rs who confided to a lesser extent in closest friend</u>	<u>2</u>	<u>2</u>	<u>4</u>
Totals	12	8	20
corr $\chi^2 = .208$; N.S. $\phi = .102$			

TABLE 17B

THE RELATIONSHIP BETWEEN DEGREE OF CONFIDING IN CLOSEST FRIEND
AND NUMBER OF FRIENDS CITED BY ALL RS

	All <u>RS</u>		Total
	<u>Rs</u> who named many friends	<u>Rs</u> who named few friends	
<u>Rs</u> who confided highly in closest friend	15	18	33
<u>Rs</u> who confided to a lesser extent in closest friend	<u>2</u>	<u>5</u>	<u>7</u>
Totals	17	23	40

corr $\chi^2 = .673$; N.S.
 $\phi = .130$

TABLE 18

RELATIONSHIP BETWEEN EXTENT OF ENGAGING IN ACTIVITIES
WITH CLOSEST FRIEND AND NUMBER OF FRIENDS
CITED BY ENGINEERING RS

	Engineers		Total
	<u>Rs</u> who named many friends	<u>Rs</u> who named few friends	
<u>Rs</u> who engaged in many activ- ities with closest friend	3	11	14
<u>Rs</u> who engaged in few activ- ities with closest friend	<u>2</u>	<u>4</u>	<u>6</u>
Totals	5	15	20

corr $\chi^2 = .00$; N.S.
 $\phi = -.126$

TABLE 18A
RELATIONSHIP BETWEEN EXTENT OF ENGAGING IN ACTIVITIES
WITH CLOSEST FRIEND AND NUMBER OF FRIENDS
CITED BY EDUCATION RS

	Educators		Total
	<u>Rs</u> who named many friends	<u>Rs</u> who named few friends	
<u>Rs</u> who engaged in many activities with closest friend	9	5	14
<u>Rs</u> who engaged in few activities with closest friend	<u>3</u>	<u>3</u>	<u>6</u>
Totals	12	8	20

corr $\chi^2 = .009$; N.S.
 $\phi = .134$

TABLE 18B
RELATIONSHIP BETWEEN EXTENT OF ENGAGING IN ACTIVITIES
WITH CLOSEST FRIEND AND NUMBER OF FRIENDS
CITED BY ALL RS

	All <u>Rs</u>		Total
	<u>Rs</u> who named many friends	<u>Rs</u> who named few friends	
<u>Rs</u> who engaged in many activities with closest friend	12	16	28
<u>Rs</u> who engaged in few activities with closest friend	<u>5</u>	<u>7</u>	<u>12</u>
Totals	17	23	40

corr $\chi^2 = .077$; N.S.
 $\phi = -.011$

However, the definition of a primary relationship given in Chapter II suggests that the intimacy of a relationship can be assessed according to the degree that confidences and activities are shared in that relationship.

The finding that in both groups of Rs there were high confiders and low confiders, active and less active individuals, raises some question about the validity of Roe's classification of individuals into occupational types. It is probably true that in any single occupation there is room for many different types of individuals, and that the kinds of relationships one forms with others is more a matter of individual dynamic than of occupational aspiration.

Family Relationships

A student's relationship with his family is regarded in this thesis as another type of primary relationship. The nature of this relationship is examined here again using affective and activity ties as indicators of a primary relationship. The data gathered was employed in testing Hypothesis 3:

Engineering Rs will report less involvement in
their relationships with their families than
Secondary Education Rs.

The activity and affect components of family ties were measured separately. Findings regarding each measure will be reported in the sections below. The final section will summarize the results concerning family ties and their implications for Hypothesis 3.

Activity and the family. The activity dimension of a R's relationship with his parents was measured differently than was the activity aspect of his friendship ties. Rs were asked to indicate how frequently they contacted parents in the form of letters, phone calls and home visits during the school year. Seven response alternatives were provided ranging from "once a week or more" to "never". Rs were also asked to report how frequently their parents

contacted them in each of the three ways indicated above. The six items used to measure frequency of family interaction produced three indices which were derived as follows:

1. Responses to each of the three R-to-parent items for each R were summed and assigned as a R-to-parent interaction score.
2. Responses to each of the three parent-to-R items for each R were summed and assigned as a parent-to-R interaction score.
3. All six items were summed for each R and assigned as a total frequency of interaction score.

The scale was constructed in such a way that a low numerical score indicated a high interaction score. For example, for the total interaction score, a R who marked the first alternative (once a week or more) for each item, thus indicating a high frequency of interaction with parents, would obtain a score of six, the lowest numerical score possible.

A Chi Square analysis⁹ revealed that the R-to-parent interaction score and the parent-to-R interaction score were significantly related ($\chi^2 = 4.91$; $p < .05$). Thus, there was a low incidence of one-way communication between Rs and their parents. Since the two scores were related and apparently both were measuring the extent of interaction between R and his parents, it was decided to use the total family interaction score in the analyses which follow.

Rs were divided at the median total interaction frequency score, which was 25, into groups with high and low interaction scores. A Chi Square test (see Table 19) revealed no differences between engineers and educators in their frequency of communication with parents. This finding would suggest

⁹The median R-to-parent and parent-to-R interaction scores for the entire sample were used to divide Rs into high and low categories on each of these variables.

that Hypothesis 3 is untenable in its prediction of differences in the family ties of engineering Rs and education Rs.

TABLE 19
DIFFERENCES BETWEEN ENGINEERS AND EDUCATORS IN
FREQUENCY OF INTERACTION WITH PARENTS

	Engineers	Educators	Total
High interaction frequency *	8	8	16
Low Interaction frequency **	<u>12</u>	<u>12</u>	<u>24</u>
Totals	20	20	40

$$\chi^2 = .00; \text{N.S.}$$

$$\phi = .00$$

* A high frequency of interaction was defined as a score above the median frequency of interaction for the entire sample.

** A low frequency of interaction was defined as a score below the median frequency of interaction for the entire sample.

The interpersonal involvement concept discussed in Chapter II and above suggested additional comparisons which might cast further light upon Hypothesis 3. First, it was decided to examine the association between the activity component of family relations and the activity dimension of friendship ties. It seemed reasonable to assume that the activity component of primary relationships would be manifested in similar ways in the types of primary ties studied in this thesis. Thus, a R who scored high on the activity component of friendship ties would also score high on the activity aspect of family relationships. All Rs were divided at the median activity score with closest friend for the entire sample into groups engaging in many activities

and in few activities with closest friend. Likewise, the median total interaction score with parents was used as a basis for placing Rs into high and low categories of interaction frequency. Chi Square indicated no relation between the two measures (corr. $\chi^2 = .045$, N.S., $\phi = .022$). Rs who interacted frequently with parents were as likely to share many activities with friends as few activities. Apparently the activity dimension of different types of primary ties are not related.

A similar analysis was carried out in order to test for a relation between interaction frequency with parents and number of friends. Again, it was assumed that Rs who were active in their relationships with parents would also be active in the area of friendship by having made many friends. The median number of friends for the entire sample was used to divide Rs into groups with many and with few friends. Although there was a tendency for Rs that named many friends to also report a high frequency of interaction with parents and for Rs who listed few friends to report low frequency of interaction, the differences were not statistically significant ($\chi^2 = 3.00$, N.S., $\phi = .274$).

It was reported earlier that the quantitative (number) and qualitative (closeness) aspects of friendship were unrelated. In addition, results of the comparisons described above show that a measure of the closeness of a friendship relationship (activity) was unrelated to a similar measure of the closeness of a family relationship. The reader is reminded that the activity dimension of friendship ties was measured in a different way than was activity in the family relationship. Perhaps the two measures aren't really comparable, but the more likely implication of the above results may be that activity, as one measure of the closeness of a relationship, varies across

types of primary ties. The additional finding that closeness (activity) of family relationships has little to do with the quantitative aspect (number) of friendship argues against a conception of interpersonal involvement wherein the qualitative (closeness) aspect is related to the quantitative (number) aspect within the same relationship or to the qualitative aspect of another type of primary tie.

Affect in the family. Three separate measures of the affective dimension of family ties were included in the schedule. The results concerning each of these measures are reported in the following sections.

Confiding in parents. Rs were asked in whom they would confide about nine problems and concerns.¹⁰ The response alternatives were as follows: close friends; parents; professor; minister, counselor or adviser; or none of these. Rs were asked to indicate a first, second, and least choice, thus enabling us to ascertain where parents lie along a continuum of potential confidantes for different problems.

The frequency with which Rs indicated each of the five alternatives as first choice was calculated, and the number of times each was named as last, or least choice was also computed. Second choices were not analyzed. These data are tabulated in Table 20. Generally, Rs indicated close friends as the persons in whom they would most likely confide about their concerns. However, in most cases, parents were next most frequently confided in as first choice, and they were named as the most frequently used confidante for concerns related to troubles that members of the family are in, and for financial difficulties. This latter finding seems logical in view of the partial

¹⁰These nine items are listed above under "Affect in Friendship."

TABLE 20

DISTRIBUTION OF RESPONSES ACCORDING TO FIRST-CHOICE AND LAST-CHOICE
CONFIDANTES WITH RESPECT TO NINE ISSUES AND CONCERNS

Problems	First-choice Targets of Confiding									
	Engineers' Responses					Educators' Responses				
	Friends	Par- ents	Profes- sor	Counse- lor, etc.	None	Friends	Par- ents	Profes- sor	Counse- lor, etc.	None
1. Plans for marriage	13	5	0	2	0	8	12	0	0	0
2. Personal goals	11	8	1	0	0	7	12	0	0	0
3. Embarrassing experi- ences on dates	19	0	0	0	1	18	1	0	0	1
4. Problems with parents	12	7	0	0	1	12	1	0	1	6
5. Financial difficulties	5	12	0	2	1	5	14	0	0	1
6. Personal problems	11	3	0	4	2	6	9	0	3	2
7. Troubles that a member of the family is in	9	9	0	1	1	6	9	0	0	5
8. Difficulties with school work	15	3	2	0	0	12	4	1	2	1
9. Sexual experiences	14	0	0	2	4	13	0	0	0	7
Totals *	109 60%	47 26%	3 2%	11 6%	10 6%	87 49%	62 34%	1 1%	6 3%	24 13%

TABLE 20--Continued

Problems	Last-choice Targets of Confiding									
	Engineers' Responses					Educators' Responses				
	Friends	Par- ents	Profes- sor	Counse- lor, etc.	None	Friends	Par- ents	Profes- sor	Counse- lor, etc.	None
1. Plans for marriage	0	0	13	5	2	0	0	15	4	1
2. Personal goals	1	0	9	6	4	1	0	7	8	4
3. Embarrassing experi- ences on dates	0	2	9	6	3	0	0	10	7	3
4. Problems with parents	1	2	9	5	3	1	4	10	0	5
5. Financial difficulties	2	0	9	5	4	0	0	12	4	4
6. Personal problems	0	2	10	3	5	1	1	12	2	4
7. Troubles that a member of the family is in	2	0	10	4	4	0	1	12	0	7
8. Difficulties with school work	0	4	0	12	4	1	3	4	5	7
9. Sexual experiences	1	3	8	2	6	0	2	9	2	7
Totals*	7 4%	13 7%	77 43%	48 27%	35 19%	4 2%	11 6%	91 50%	32 19%	42 23%

* The percentages listed under each column indicate the proportion of first (or least) choices that went to that response alternative.

financial dependency of most students upon their parents. It is interesting, but not surprising, to note that in no case did a R indicate that he would be most likely to talk with his parents about his sexual experiences. Only one R indicated that he would be most likely to talk with his parents about embarrassing experiences on dates.

Educators reported that they tended to regard parents as a first-choice confidante more frequently than did engineers (34% of the educators' first choices were parents as compared with 26% of the engineers' first choices). These data would seem to partially support Hypothesis 3.

Engineers and educators were alike in their tendency to confide in professors as a "last resort". It is interesting that even when the R's hypothetical concern was with difficulties in school work, over half of the sample named "professor" as the person in whom they would be least likely to confide. Ministers, counselors and advisers, along with "none of these" accounted for the majority of the remaining last choices. Engineering Rs seemed less likely than education Rs to confide in a minister, counselor or adviser, while more education Rs utilized the final, "none of these" category.

Quality of interaction with parents. A second measure of the affective component of a R's relationship with his family involved asking each R to indicate how frequently he talked with his parents about 12 issues related to important things happening to him, to his parents, and in the external world. For each item (see Appendix B for a list of the items used) R was to indicate whether he talked with his parents about each topic (1) Very often, (2) Occasionally, (3) Rarely, or (4) Never. Responses to all twelve items were summed in order to derive a score for each R. The scores could range from 12 (indicating a high quality of interaction) to 48 (indicating a low quality of

interaction). The scores actually ranged from 15 to 48. This numerical score constituted a measure of the quality of each R's interaction with parents. A thirteenth item obtained the R's perception of how closely his and his parents' ideas agree.

Rs were divided at the median quality of interaction score for the entire sample ($mdn = 23$) into groups with high and low quality scores. The Chi Square (see Table 21) revealed no statistically significant differences between engineers and educators in the quality of their interactions with parents. Again, the data failed to lend support to Hypothesis 3.

TABLE 21
DIFFERENCES BETWEEN ENGINEERS AND EDUCATORS WITH RESPECT
TO QUALITY OF INTERACTION WITH PARENTS

	Engineers	Educators	Total
<u>Rs</u> who engaged in a high quality of interaction with parents*	14	12	26
<u>Rs</u> who engaged in a low quality of interaction with parents**	<u>6</u>	<u>8</u>	<u>14</u>
Totals	20	20	40

$$\chi^2 = .439; \text{N.S.}$$

$$\phi = -.105$$

* A high quality of interaction was defined as a score above the median quality of interaction for the entire sample.

** A low quality of interaction was defined as a score below the median quality of interaction for the entire sample.

The reader is reminded that the friendship data reported above revealed a significant association between affect and activity in friendship. The data obtained in the family section of the schedule provide an opportunity to make a similar analysis of the relationship between affect and activity in family ties. The quality of interaction scores obtained by each R were used as the measure of affect, and the frequency of interaction scores as the index of activity. The median scores for the entire sample on each of the two variables was used as a basis for dividing Rs into groups with high and low quality of interaction scores and into high and low frequency of interaction categories. Chi Square indicated that a R who interacted frequently with his parents was as likely to engage in a low quality of interaction with them as a high quality of interaction. Likewise, among the Rs who interacted less frequently with their parents, as many indicated a low quality of interaction as a high quality of interaction ($\chi^2 = .897$, N.S., $\phi = .150$).

Thus, it appears that the measure of affect employed in this thesis is unrelated to the activity component of family relationships. While the definition of primary ties utilized in this study was partially validated in the finding that affect and activity dimensions of friendship ties are related, the results reported above may indicate that the present model of primary relationships is not applicable to the family relationship. On the other hand, our measure of activity in the family relationship may make interaction with parents appear spuriously high just because it's difficult not to interact with one's parents at least occasionally through phone calls and letters. In addition, visits home during vacations, for example, are essentially a "given" in the family relationship regardless of the closeness of that relationship. Because of the nature of one's relationship with his

parents, which is in some respects an established, a priori sort of bond, there may be less freedom of choice for the R in determining the dimensions of that relationship as compared with his ties with close friends.

Additional comparisons were made in order to further clarify the interrelationships among various aspects of the different types of primary ties. Given the conception of interpersonal involvement used in this thesis, it seemed reasonable to assume that the quality of the R's discussions with his parents could be related to his degree of confiding in friends. Engineering majors and education majors were divided into groups of low and high quality interaction with parents using the median quality of interaction score for the entire sample. Likewise, the median score for confiding in one's closest friend was used to categorize Rs into high and low confiding groups. A Chi Square indicated that for educators, there was a significant relation between quality of interaction with parents and degree of confiding in closest friend (corr. $\chi^2 = 4.70$, $p < .05$, $\phi = .612$). Education Rs who maintained a high quality of interaction with parents were more likely to confide to a greater extent in their closest friend than were the educators who engaged in low quality interaction with parents. Although the results tended in the same direction for engineering Rs, the relationship was not statistically significant (corr. $\chi^2 = .298$, N.S., $\phi = .030$).

These data lend some support to the notion that corresponding aspects of primary relationships are associated across different types of relationships. Thus, the above results indicate that a measure of the affective component of friendship (confiding in one's closest friend) tended to be related to a measure of the affective dimension (quality of interaction) of family ties. On the other hand, however, activity measures of friendship and family ties

were not related. To this point the data has failed to consistently support a systematic relationship between the quantitative (number) aspect of one type of primary tie and the qualitative (closeness) aspect of that relationship. Further, the data has indicated that qualitative components of different types of primary relationships are unrelated. Thus, measures of the closeness (qualitative aspect) of friendship ties have been found to be related neither to the number of friends listed (quantitative aspect) nor to the closeness of family relationships.

A second analysis derived from the interpersonal involvement concept compared number of friends with the R's quality of interaction with parents. Rs were again divided at the median scores for the entire sample on the variables of quality of interaction with parents and number of friends listed into high and low quality interaction groups and into categories naming many and few friends. Chi Square revealed no association between number of friends and quality of interaction with parents ($\chi^2 = 1.709$, N.S., $\phi = .207$).

An additional item requested the R to indicate how closely his and his parents ideas agree. The following choices were provided:

1. Our ideas are generally in complete agreement.
2. My parents and I agree on most things.
3. While my parents and I disagree on a number of things, we tend to agree more than disagree.
4. While my parents and I tend to agree on a number of things, we tend to disagree more than agree.
5. My parents and I tend to disagree on most things.
6. Our ideas are generally in complete disagreement.

The responses to this item were dichotomized on the basis of face validity rather than at the median response for the entire sample. Alternatives 1 through 3 indicate varying degrees of agreement with parents; alternatives 4 through 6 indicate corresponding degrees of disagreement. Rs that indicated

one of the first three alternatives were placed in the "agree" category while Rs choosing one of the last three alternatives were categorized as disagreeing with their parents. A Chi Square analysis, as Table 22 indicates, revealed differences in the direction predicted by Hypothesis 3. Slightly

TABLE 22
DIFFERENCES BETWEEN ENGINEERS AND EDUCATORS WITH RESPECT
TO R'S PERCEIVED DEGREE OF AGREEMENT WITH PARENTS

	Engineers	Educators	Total
<u>Rs</u> whose ideas agree with the parents'	10	14	24
<u>Rs</u> whose ideas disagree with the parents'	<u>10</u>	<u>6</u>	<u>16</u>
Totals	20	20	40
$\chi^2 = 1.66; \text{N.S.}$ $\phi = .204$			

fewer engineering Rs than education Rs indicated agreement with parents. However, the difference was not statistically significant.

In order to analyze the relationships between the degree of agreement item and other measures concerned with family ties, the following comparisons were made. First, it seemed reasonable to assume that the R's perceived agreement with his parents' ideas could affect the quality of his interaction with them. Or in fact the converse may be true--that the R's quality of interaction with his parents could determine his perception of agreement with their ideas. To make this test, Rs were placed into groups of agreeers and disagreeers and were dichotomized at the median quality of interaction score

into high and low categories. A 2 x 2 Chi Square revealed no relation between quality of interaction and degree of agreement ($\chi^2 = .897$, N.S., $\phi = .150$).

A similar analysis showed no significant association between perceived degree of agreement and frequency of interaction with parents ($\chi^2 = 2.406$, N.S., $\phi = -.245$). However, there was a tendency for those Rs who perceived a high degree of agreement to engage in a low frequency of interaction with parents. Perhaps a lesser amount of interaction with one's parents allows for more misperception of the parents' attitudes on the R's part.

Feelings about parents. The final index of the affective component of family relationships involved each R's general attitudes and feelings toward his family. In response to 10 statements concerning feelings toward his family and home life (see Appendix B for a list of items) a R could indicate varying degrees of agreement, from "agree strongly" or "completely agree" to "disagree strongly". Responses were added in such a way that a low numerical score indicated primarily negative feelings toward the parents and a high score revealed more positive feelings.

To test for engineer-educator differences in feelings toward parents, both groups of Rs were dichotomized at the median score for the entire sample ($mdn = 32$) into groups indicating high and low feelings for parents. A Chi Square analysis revealed a significant difference between engineers and educators in the direction predicted by Hypothesis 3. As Table 23 shows, engineering Rs were more likely than education Rs to indicate less positive feelings about parents. This finding lends some support to Hypothesis 3. In view of the findings discussed above that do not support Hypothesis 3, however, we must conclude that the bulk of the present data fail to confirm

engineer-educator differences in family involvement.

TABLE 23
DIFFERENCES BETWEEN ENGINEERS AND EDUCATORS WITH RESPECT
TO FEELINGS ABOUT PARENTS AND HOME LIFE

	Engineers	Educators	Total
<u>Rs</u> scoring above the median in feelings for parents	6	14	20
<u>Rs</u> scoring below the median in feelings for parents	<u>13</u>	<u>7</u>	<u>20</u>
Totals	19	21	40

$\chi^2 = 4.912; p < .05$
 $\phi = .350$

Although the index of feelings toward parents was not significantly associated with any of the additional measures of family ties, there were tendencies in the expected direction in the comparisons which were made (see Table 24 for a summary of these findings). A Chi Square analysis, dividing Rs into high and low groups according to feelings toward parents and quality of interaction with parents,¹¹ showed that Rs who indicated a high quality of interaction with their parents were more likely to also indicate positive feelings toward them and that Rs who engaged in a low quality of interaction were less likely to indicate positive feelings toward their parents.

Chi Square also revealed that Rs who perceived a high degree of agreement between their parents' ideas and their own tended to indicate more

¹¹As in similar analyses reported above, the median scores were used to dichotomize Rs on both variables.

TABLE 24

SUMMARY OF FINDINGS CONCERNING THE RELATIONSHIP BETWEEN FEELINGS TOWARD PARENTS AND ASPECTS OF INTERPERSONAL INVOLVEMENT

Comparison	Engineers	Educators	All Rs
Feelings toward parents x quality of interaction with parents	corr. $\chi^2 = .102$ N.S. $\phi = .190$	corr. $\chi^2 = .448$ N.S. $\phi = .257$	$\chi^2 = 1.199$ N.S. $\phi = .173$
Feelings toward parents x degree of agreement with parents	corr. $\chi^2 = .238$ N.S. $\phi = 0.00$	corr. $\chi^2 = 2.051$ N.S. $\phi = .435$	$\chi^2 = 2.823$ N.S. $\phi = .266$
Feelings toward parents x frequency of interaction with parents	corr. $\chi^2 = 1.20$ N.S. $\phi = .356$	corr. $\chi^2 = .036$ N.S. $\phi = .043$	$\chi^2 = .818$ N.S. $\phi = .143$
Feelings toward parents x degree of confiding in closest friend	corr. $\chi^2 = .298$ N.S. $\phi = -.275$	corr. $\chi^2 = 1.662$ N.S. $\phi = .419$	corr. $\chi^2 = 2.312$ N.S. $\phi = .306$
Feelings toward parents x extent of engaging in activities with closest friend	corr. $\chi^2 = .102$ N.S. $\phi = .190$	corr. $\chi^2 = .167$ N.S. $\phi = .023$	$\chi^2 = .233$ N.S. $\phi = .076$
Feelings toward parents x organization score	corr. $\chi^2 = 3.580$ N.S. $\phi = .534$	corr. $\chi^2 = .002$ N.S. $\phi = .121$	$\chi^2 = .382$ N.S. $\phi = .098$

positive feeling toward their parents than those Rs who perceived disagreement.

There was no systematic relation between interaction frequency with parents and feelings toward parents. Again, the association between affect and activity that was found in friendship did not manifest itself in the family relationship.

Further analyses indicated that the variable of feelings toward parents was not related in a systematic way to any of the additional measures of interpersonal involvement with the exception of number of friends listed by the R. As Table 25 shows, across all 40 Rs, those who named many friends

TABLE 25
RELATIONSHIP BETWEEN FEELINGS TOWARD PARENTS
AND NUMBER OF FRIENDS CITED

	<u>Rs</u> scoring above the median in feelings toward parents	<u>Rs</u> scoring below the median in feelings toward parents	Total
<u>Rs</u> who listed many friends	12	5	17
<u>Rs</u> who listed few friends	<u>7</u>	<u>16</u>	<u>23</u>
Totals	19	21	40

$$\chi^2 = 4.812; p < .05$$

$$\phi = .397$$

were significantly more likely to have indicated positive feelings toward their parents. On the other hand, Rs who listed few friends also revealed less positive feelings toward their parents. Thus the variable of feelings

toward parents was the single index of the family relationship that distinguished between engineers and educators and the only measure of family ties that was systematically related in the predicted direction to a component of friendship (number of friends listed). This finding lends some support to the notion that an individual's relationships in one area of primary ties will be related to the kinds of relationships he forms in another area of primary ties.

Summary of findings on the family relationship. One measure of the activity dimension and three measures of the affective dimension were included in the schedule. It was hypothesized earlier that engineer-educator differences would be found along both dimensions of primary ties.

Statistical analyses, however, did not tend to support this hypothesis. Frequency of interaction with parents, as a measure of the activity component, failed to distinguish between engineering Rs and education Rs. A tendency was found for frequency of interaction with parents to be related in a positive direction to number of friends listed by a R. Additional expected associations between frequency of interaction with parents and other indices used in this study were not found. For example, given the conception of interpersonal involvement employed in this study, it was expected that the activity component of family ties would be related to the activity component of friendship. As reported above, however, this was not the case.

Greater differences between engineering Rs and education Rs were found along the affective dimension. For the most part, however, these differences could be accounted for by chance alone. Education Rs were more likely than engineering Rs to indicate parents as the ones in whom they would be most likely to confide about nine problems. The data also revealed a tendency for

educators to perceive greater agreement between their parents' ideas and their own and for engineers to perceive greater disagreement. There were no differences between engineers and educators in the quality of interaction they maintained with parents.

The only result that reached statistical significance was the difference that was found between engineers and educators in the feelings they indicated toward their parents and home life: Education Rs were more likely than engineering Rs to indicate positive feelings and less likely to indicate negative feelings. This variable of feelings toward parents was the only index of the family relationship that was significantly related to a measure of the friendship relationship (number of friends listed). It was found that Rs who indicated positive feelings toward parents were more likely to name many friends than Rs who indicated negative feelings toward parents. Roe might interpret this data as lending some support to her notion of a causal association between type of family relationship and later person orientation: Rs who held positive feelings and attitudes toward parents and home life named more close friends than Rs who felt less positively. Whether or not this finding is the result of a causal relationship cannot be determined using the present data.

At any rate, the bulk of the data failed to support the hypothesis of differences between engineers and educators in their family relationships. Thus, little support was found for Roe's theory, regardless of whether the family relationship is viewed primarily as a causal agent, as Roe suggests, or as one source of primary ties among many, as in the framework of this study.

The data reported earlier reveal that the present measures of affect in

the family were neither related to one another nor to the activity dimension of family ties. This finding raised some question about the applicability of the present conception of the nature of primary ties to the family relationship. Another problem that must be recognized in view of the above data, however, is the perhaps questionable validity of the indices used in this study for measuring the affective and activity dimensions of family ties.

The unsystematic associations among the various components of family and friendship relationships lend little support to a conception of interpersonal involvement wherein qualitative (closeness) aspects are related either to quantitative aspects within the same type of primary relationship or to qualitative aspects in a different type of primary relationship.

Thus, the concept of interpersonal involvement that was derived in order to operationalize Roe's concept of person orientation is brought into question. The findings seem to suggest that interpersonal involvement is neither as pervasive nor as factorially simple as the concept was defined earlier in this thesis. On the other hand, the problems raised in this study demonstrate the difficulty of attempting to measure Roe's broadly defined construct of person orientation.

Organizational Membership

It was argued earlier that affiliation with an organization cannot be regarded as a primary relationship in the same sense that friendship or family ties are primary relationships. However, membership in voluntary organizations may provide a framework within which close ties with others are initiated and maintained. On this assumption, an investigation of organizational memberships of engineers and educators was included in the present study, and Hypothesis 4 was formulated in order to test for differences

between educators and engineers on this variable:

Engineering Rs will report less participation in off-campus and on-campus organizations than Secondary Education Rs.

Information was obtained from each R concerning (1) number of on-campus organizations to which he belonged (2) number of offices held in these organizations, and (3) number of off-campus organizations to which he belonged. For each on- or off-campus organization of which the R was a member, he was given 1 point; for each office he held he was given 2 points.¹² Summed, these points comprised a total "organization score" for each R.

Eighty-five per cent of the 40 Rs belonged to at least one campus organization; one R belonged to as many as seven. The average number of memberships listed was 2.2, the median number was 2. Most Rs (80 per cent) listed from one to three campus organizations. More engineers than educators (90 per cent and 80 per cent, respectively) belonged to campus organizations. The number of such memberships listed by engineers ranged from none to seven; organizations listed by educators ranged from none to five.

Seventeen Rs, or 42 per cent of all R, held an office in the organization of which they were a member on campus. This figure included 55 per cent of the engineering Rs but only 30 per cent of the education Rs. The highest number of offices held was three--by an engineering R. Most office-holding Rs, both engineers and educators, held only one such position.

Only 28 per cent of the sample reported belonging to off-campus organizations. Slightly more engineers than educators indicated membership in

¹²More points were given to a R who held office because it was felt that such officership indicated not only greater commitment to the organization but greater intensity of involvement.

off-campus associations (30 per cent as compared with 25 per cent, respectively). The highest number of such organizational memberships was two. Half of the engineers who listed off-campus organizational memberships named one organization; and half listed two. On the other hand, all of the educators who were affiliated with such off-campus organizations listed only one.

The descriptive data reported above do not support Hypothesis 4. Indeed, the tendency is in the direction opposite of that predicted. Instead of listing fewer organizations, engineers listed more. In addition, engineers appeared to be more involved, through positions of leadership, in the organizations of which they were a part. In order to test statistically for differences between engineers and educators in organizational affiliation, R_s were divided at the median organization score for the entire sample into groups of high and low participators. Chi Square analysis, summarized in Table 26, revealed no significant difference between engineers and educators with regard to organizational membership.

TABLE 26
DIFFERENCES BETWEEN ENGINEERS AND EDUCATORS WITH
RESPECT TO ORGANIZATIONAL PARTICIPATION

	Engineers	Educators	Total
R_s scoring above the median organization score	12	7	19
R_s scoring below the median organization score	<u>8</u>	<u>13</u>	<u>21</u>
Totals	20	20	40
$\chi^2 = 2.50; N.S.$ $\phi = -.250$			

It seemed reasonable to assume that a R's degree of participation in organizations could be related to other variables explored in this thesis. For example, a R who places himself in contact with many people by participating in several organizations would seem more likely to have more friends than the R who does not have this additional channel for initiating friendships. In addition, the "joining" and "doing" aspects of participation in organizations would seem to be reflected in other behaviors such as joining a fraternity, engaging in many activities with one's closest friend, or maintaining a high frequency of interaction with parents. As indicated in Table 27, however, none of these variables were significantly related to extent of participation in organizations.

In exploring the relationship between organizational affiliation and an additional measure used in this study it was discovered that for engineering Rs, feelings about family tended to be related to their participation in organizations. On this basis, organizational participation was examined for engineers and educators holding feelings about parents constant. It was found that when only those Rs who held positive feelings toward parents were considered, there were significant differences between engineers and educators in their organization scores (corr. $\chi^2 = 5.35$, $p < .05$, $\phi = .644$). Engineering Rs revealed greater participation in organizations than did education Rs.

The above findings on engineer-educator differences in organizational affiliation, which indicate tendencies opposite those predicted, would seem to argue against Roe's hypothesis of differences in person orientation between men in the different types of vocational fields. Another likely implication, however, is that a report of membership in organizations may not

TABLE 27
SUMMARY OF FINDINGS CONCERNING THE RELATIONSHIP BETWEEN ORGANIZATIONAL
AFFILIATION AND ASPECTS OF INTERPERSONAL INVOLVEMENT

Comparison	Engineers	Educators	All Rs
Organizational membership x number of friends cited	corr. $\chi^2 = .277$, N.S. $\phi = .000$	corr. $\chi^2 = 1.018$, N.S. $\phi = .328$	$\chi^2 = .474$ $\phi = .109$
Organizational membership x fraternity membership	corr. $\chi^2 = .277$ N.S. $\phi = .00$	corr. $\chi^2 = .659$ N.S. $\phi = .303$	$\chi^2 = .835$ N.S. $\phi = .144$
Organizational membership x sharing activities with closest friend	corr. $\chi^2 = .009$ N.S. $\phi = .134$	corr. $\chi^2 = .002$ N.S. $\phi = .121$	$\chi^2 = .013$ N.S. $\phi = .019$
Organizational membership x frequency of interaction with parents	corr. $\chi^2 = .078$ N.S. $\phi = .042$	corr. $\chi^2 = .082$ N.S. $\phi = .043$	$\chi^2 = .066$ N.S. $\phi = .041$

be as valid a measure of person orientation as other indices used in this study appear to be. Perhaps the variable of organizational affiliation does not properly belong to the construct of interpersonal involvement as defined earlier. A more appropriate model for investigating organizational membership, in terms of the framework of the present study, was discovered too late to be incorporated into the research instrument. Parsons (1951) and Gordon and Babchuk (1959) employ the instrumental-expressive differentiation in classifying associational memberships. An individual may be motivated to join the instrumental association because he values the goals which the group represents. The instrumental group represents a means to the end of achieving organizational or personal goals. The basis for joining an expressive group rests in the gratifications to be achieved through interpersonal relationships with other members, which represents an end in itself. In this study no attempt was made to investigate the nature of the groups listed by Rs nor their reasons for joining. While engineering Rs listed more memberships in organizations, the groups named may have been more instrumental than those listed by education Rs, who may have attained more interpersonal involvement and satisfaction in their associations.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Review of the Study

This thesis explores aspects of the primary relationships of relatively young, male college students. It views a primary relationship as one in which persons are predisposed to enter into a wide range of activities with one another, and their predisposition to do so is associated with a predominance of positive affect. Anne Roe's theory of vocational choice provides a basis for expecting differences in interpersonal relations between students in different types of curricula (person oriented and non-person oriented). The concept of interpersonal involvement is utilized as a means of measuring differences in primary relationships between a group of engineering (non-person oriented) students and education (person oriented) students.

In this study particular attention is given to:

- a. a description of conditions leading to the formation of friendships--i.e., when, where and how they were formed, and differences between engineers and educators in this respect;
- b. an examination of differences between engineers and educators with regard to number of close friends cited;
- c. an investigation of differences between engineers and educators in the closeness of their relationships with friends and with parents;
- d. an examination of differences in organizational participation of engineers and educators.

The study involved a relatively homogeneous sample of 40 Rs, half of whom were engineering majors and half education majors, who were enrolled in upper-level engineering and education classes at Kansas State University in

the Fall semester of 1968.¹ A pre-tested, partially structured interview schedule was used to gather data. Information was obtained from Rs in the form of self-reports and responses to items intended to measure particular aspects of friendship and family relations.

In the schedule, Rs were asked to initial the names of persons regarded as very close friends. The data on number of friends each R listed was used to test a hypothesis concerning differences between engineers and educators in the quantitative aspect of friendship ties. Rs provided fairly extensive information for each friendship cited. Rs indicated when, where, and how each friend was met. This information on how long friends had known one another, the contexts in which the friendship was initiated, and how each friend was met was used to describe the circumstances leading to the formation of close friendships. This data was also used in an examination of differences between engineering Rs and education Rs with respect to style of establishing relationships with peers.

A substantial portion of the schedule elicited responses bearing on the remaining variables of major concern to the present study: closeness of ties with friends, closeness of parent-student relationships, and organizational affiliation. More specifically, closeness of friendship was measured in terms of affective ties between friends and activities shared with friends. Measures of the affective ties between friends were derived from R's responses to items involving sharing confidences with friends, borrowing money from them, feeling free to behave without constraint when with them,

¹All 40 Rs were males, white, and unmarried, were full-time students of either junior or senior standing, were from white-collar families, were between the ages of 19-23, and came from a residence located outside the city of Manhattan, Kansas.

exchanging home visits with them, and selecting from among close friends those who are closest friends and those who are least close. Rs also indicated from a list of leisure time activities those in which they had participated with their friends. From these responses, indices of shared activities were derived. These data were used in testing a hypothesis which focused upon differences in closeness of friendship ties of engineers as compared with those of educators. The data were also useful in exploring the function of affect and activity in differentiating among friends with respect to degrees of intimacy.

Additional indices were used for measuring affect and activity in R's relationship with his parents in order to test a hypothesis concerned with differences between engineering Rs and education Rs in the closeness of their family ties. Indices of the affective aspect of R's relationship with his parents included a measure of quality of interactions with parents, comprised of 12 questions concerning kinds of things R discussed with his parents. A thirteenth item obtained each R's perception of how closely his and his parents' ideas agree. In addition, a measure of degree of confiding in parents about nine important problems was included. A third index of the affective dimension consisted of 10 items measuring the R's feelings about his family and home life.

The activity dimension of R's relationship with his parents was measured by items that asked each R to indicate the frequency of interaction between he and his parents.

Finally, information was obtained on each R's extent of participation in on- and off-campus organizations. These data were used in testing a hypothesis concerning differences between engineers' and educators' involvement in

organizations. Descriptive and inferential statistics were employed in analyzing the data. The tests of statistical significance which were used were selected because they were appropriate for the nominal and ordinal data provided by our measures.

Summary of the Findings

A total of 373 friends were cited by the 40 Rs. On the average, 9.3 close friends, of whom 5.6 were local units and 3.7 non-local, were named. The friends, like the Rs, tended to be relatively young, white males. The proportion of friends² that were students at KSU was about the same as the proportion of friends that were not present in the university setting (non-local), across all Rs. The data suggested that the university setting provided an important context both for the initiation of new friendships and the maintenance of previously formed friendships. Over half of all closest friendships were initiated at the university, and one-sixth of the local friends cited were persons originally met at home, the friendship continuing at the university. Rs reported meeting their least close friends most frequently through another friend and their closest friends were met spontaneously. On the average, the closest and least close friends had been known for from four to five years.

In addition to these general trends, a number of differences between engineers and educators in friendship ties were observed. Educators cited a greater number of friends than engineers. These friends were slightly less likely to be students at the university, less likely to have been formed at

²From this point onward, we are speaking of the 116 closest and 69 least close friends named.

the university, and more likely to have been formed in the home community than were friends named by engineering Rs. The university setting generally appeared to be a less frequent context for finding and making close friends among education Rs than among engineering Rs. Educators were more likely than engineers to form intimate (and apparently lasting) friendships with persons met in the hometown setting. In addition, the data suggested that educators were more likely to have met their friends through the channel of personal contact. Engineering majors reported having met their friends more frequently as a result of a spontaneous acquaintance. Finally, education Rs reported having known their close friends for a longer period of time than their engineering peers, and educators cited a greater number of older persons as close friends.

Hypothesis 1 was formulated in order to test for quantitative differences in the friendships of engineers as compared with educators. Hypothesis 1 predicted that engineers would report fewer close friends than educators. Specific data to test this hypothesis was gathered by counting the number of friends originally cited by each R when asked to list the first names or initials of those persons he regarded as close friends. Hypothesis 1 was supported by the data.

A second hypothesis was formulated in order to test for differences between engineering majors and education majors in closeness of ties with friends. Hypothesis 2 predicted that engineers would report less close relations with close friends than educators. Closeness of a friendship was measured in terms of the strength of affect and the extent to which activities were shared in the relationship. Neither of the two major comparisons made offered significant support for Hypothesis 2. Educators were slightly less

likely to share activities with friends but slightly more likely to confide in friends than engineers. Neither of these differences, however, were statistically significant. A significant and positive association was observed between the intimacy of a friendship and the degree to which confiding occurred in that relationship. Likewise, Rs were significantly more likely to engage in many activities with closest friends than with least close associates.

A slightly different analysis of the confiding items made it possible to examine the relationship between the discriminatory power of each item as an indicator of affect and the relative importance placed upon it by Rs. Two tendencies emerged from this analysis. First, there appeared to be a consistent and significant association between engineers' and educators' responses to the items as indicators of affect as well as their rankings of the items by importance. Second, there appeared to be no relationship between the efficiency of the items as indicators of affect and the relative importance placed on them by Rs. These findings were interpreted to mean that affect and importance are separate dimensions which may vary independently of one another.

Three additional comparisons between academic major and indices of affect in friendship indicated that while measures of closeness could successfully distinguish between degrees of intimacy of a relationship, no significant differences between engineers and educators were revealed. Hypothesis 2 was not supported by the data. It was concluded that the types of relationships that engineers maintained with their close friends were very similar to the close friendships of educators.

Further analysis of the above data revealed a significant association

between indices of affect and of activity. Rs who shared many activities with a friend were more likely to confide highly in that friend than in a friend with whom he shared few activities. This finding reinforced the initial assumption utilized in this thesis that affect and activity are related defining components of primary relationships. However, neither component of the qualitative (closeness) aspect of friendship was related to the quantitative (number) aspect, contrary to our prediction under the interpersonal involvement construct used in this thesis.

Questions were raised as a result of a different level of analysis, by individual R rather than across Rs. When the data were analyzed in this way, it was found that regardless of a R's major or his felt intimacy with the friend involved, Rs could be identified as high confiders or low confiders, active and less active individuals. These data raised some question about the concept of the primary relationship used in this study. In addition, the validity of Roe's classification of individuals into occupational types was questioned.

Hypothesis 3 predicted that engineering Rs would report less involvement in their relationships with their families than education Rs. Measures of both the affect and activity dimensions were again used in testing this hypothesis. Only one of the four comparisons made, however, reached statistical significance. Frequency of interaction with parents, as a measure of the activity component of family ties, did not distinguish between engineers and educators. Of the indices of affect in the family, only one--i.e., feelings toward parents and home life--significantly distinguished between engineers and educators in the direction predicted by Hypothesis 3. No differences were found between engineers and educators on the other indicators of

affect: confiding in parents, quality of interaction with parents and perceived degree of agreement with parents. Thus, the major portion of the data on parent-student relationships did not support Hypothesis 3.

Comparisons similar to those carried out with the data on friendship were made in order to investigate the relationship between affect and activity in family ties. It was found that activity and affect were related in no systematic manner, perhaps indicating that the present model of primary relationships is not applicable to the family relationship. The question of the validity of the indices used in this study for measuring the affective and activity components of family ties was also raised.

The unsystematic associations among the various indices of family and friendship relationships gave little support to a conception of interpersonal involvement wherein qualitative (closeness) aspects are related either to quantitative aspects within the same type of primary relationship or to qualitative aspects in a different type of primary relationship. The conception of interpersonal involvement used in this study was questioned and the difficulty of operationalizing Roe's person orientation construct was discussed.

In Hypothesis 4 the relationship between academic major and organizational affiliation was examined. Although affiliation with an organization cannot be regarded as a primary relationship in the same sense that friendship or family ties are primary relationships, it was argued that membership in voluntary organizations may provide a framework within which close ties with others are initiated and maintained. On this assumption, an investigation of organizational memberships of engineers and educators was included in this study. Hypothesis 4 predicted that engineering majors would report less

participation in off-campus and on-campus organizations than education majors. The data did not support Hypothesis 4. It was found that engineers, instead of listing fewer organizations, listed more. In addition, engineers appeared to be more involved, through position of leadership, in the organizations of which they were a part. The relationship between R's degree of participation in organizations and other variables used in this thesis was explored, but none of the comparisons reached statistical significance. The validity of organizational affiliation as a measure of person orientation was questioned, and a more appropriate model for investigating organizational membership under the framework of this study was discussed.

Conclusions and Suggestions for Further Research

The major portion of the data gathered in this study failed to verify the hypotheses derived from Roe's theory of vocational choice. Only Hypothesis 1, in its prediction that engineering Rs would list fewer friends than education Rs, was clearly supported by the data. Engineers listed fewer friends than educators, but the types of relationships they maintained with friends and family were similar to those of educators. These findings pose an interpretive dilemma in terms of Roe's theory. Earlier, (see Chapter II) the concept of interpersonal involvement was defined as containing a quantitative and qualitative aspect. It was argued that engineers, as non-person oriented individuals (according to Roe's scheme) would be less interpersonally involved, both quantitatively and qualitatively, than educators, or person oriented individuals. The two groups differed in the predicted direction only on the quantitative aspect, however. Thus, if person orientation had been defined in terms of sheer number of ties with friends, for example,

Roe's hypothesis would be verified. On the other hand, if person orientation had been defined strictly in terms of the quality of relationships an individual maintained, the present data would not support Roe's proposition. This thesis measured person orientation in both ways, and obtained conflicting results. This raises questions both for Roe's theory and for the means used in this thesis to measure Roe's concept of person orientation.

In view of the above results, which partially support Roe and partially contradict her proposition, the data suggest that Roe's theory merits further investigation. Previous studies designed to test Roe's theory relied primarily upon projective techniques and other personality measures, while the present investigation used reports of present social behavior. Further investigations utilizing direct observation of behavior perhaps combined with personality and attitudinal indices would be worthwhile.

On the other hand, an alternative explanation for the finding that education Rs listed more friends than engineering Rs may be found in Pace and Stern's (1958) concept of environmental press. This concept relates to the measurement of the means whereby the environment shapes and molds the behavior of the individuals who live within it. The greater emphasis in education courses, as compared with engineering courses, upon human relationships and understanding may have caused the educators to become more sensitive to and concerned with the importance of interpersonal ties. Perhaps when asked to cite their close friends, the educators' concept of a "well-adjusted" person prompted them to list many names, while engineers may have felt less need to demonstrate "interpersonal success". The extent to which an "occupational characteristic" is a function of the types of individuals drawn to that field as compared with the molding effect an occupational (or educational)

environment has upon those individuals is an issue that Roe does not consider. The question merits further study of a longitudinal nature. In the paragraphs below, implications and suggested research related to additional concepts used in this thesis are discussed.

It appears that the concept interpersonal involvement, which was derived in order to operationalize Roe's notion of person orientation, is neither as pervasive nor as factorially simple as the concept was defined earlier in this thesis. The qualitative (closeness) aspect of friendship ties was related neither to the quantitative aspect (number of friends) nor to qualitative aspects of the family relationship, another type of primary relationship. It must be recognized, however, that because this study used similar but not identical indices to measure the closeness of friendship and the closeness of family ties, the data that was obtained may have been confounded. It would be worthwhile to further pursue the question of whether or not patterns of interpersonal involvement can be identified. Other indices could be explored as well as additional sources of interpersonal relationships such as siblings, dating partners, and faculty members.

Focusing upon the affective and activity bonds between friends proved to be a fruitful way of conceptualizing and studying friendship. R's statements about what they do, what they say and how they act with their friends permit reasonably accurate predictions to be made about the intimacy of friendships. Closest friends were significantly differentiated from less intimate friends in terms of expressions of positive affect; shared activities also tended to distinguish closest from least close associates. The present inquiry replicates the work of Babchuk and Bates (1963) in its finding that the affect component of primary friendships was of greatest significance in getting at

the relative primariness of the relationship between persons. The activity component, they report, was a less sensitive indicator of the primariness of the relationship between persons.

The Babchuk and Bates model of primary relationships was less effective as a means for investigating the parent-student relationship.

The effectiveness of the model was further questioned when a R-by-R level of analysis revealed that individuals who confided to a high degree in closest friends also tended to confide highly in their less close associates. Likewise, individuals who engaged in many activities with closest friends also shared many activities with persons they regarded as least close. Thus, the present data indicated that individuals could be identified according to the degree to which they tended to confide in others, regardless of the R's academic major or the intimacy of the friendship involved. Likewise, active and less active individuals could be identified. These data suggest that idiosyncratic personality variables may be a more potent predictor of the extent to which an individual confides in others and shares activities with others than the primariness, or intimacy of a friendship, as the Bates and Babchuk model suggests. However, the personality factor and the situational variable of the intimacy of the relationship are most likely interrelated. An interesting direction to take in further research would be to investigate the characteristics of low confiders versus high confiders, and of active versus less active individuals.

An examination of bases of interpersonal attraction has become a prominent trend in social psychological research in recent years. A basic question in this research concerns determinants of choice. Frequently, attempts at answering this question emphasize the importance of similarities between

persons as a determinant of attraction (e.g., see Newcomb, 1956). While the present study does not deal with the issue of similarities among friendship choices, it would be valuable to obtain further demographic data, for example, on the friends of both engineers and educators. These data would permit more of an in-depth investigation into the sources and characteristics of students' relationships with peers. For instance, do engineers form close ties primarily with other engineering majors, while educators draw their friendships from a wider range of individuals?

The answer to this question, for example, would seem to be relevant to an examination of how students' values and attitudes are changed through relationships with their peers. If the engineering student formed most of his close ties with fellow engineers, the environmental press toward the value system (or systems) of engineers³ would be strengthened. On the other hand, if the educator was exposed to a broader range of values through his friends in many different fields, the environmental press toward the values of an educator would not be as homogeneous.

Related to the above discussion is the finding reported earlier that engineers' closest friends tended to be individuals met at the university, while educators named primarily non-local, or hometown friends as being closest. In terms of the research indicating the importance to development of college peers, these data could be used as a basis for predicting that the college experience, intensified by new friendships with fellow students, would have a greater impact on engineers than upon educators. Educators, to a greater extent than engineers, maintained ties with their hometown through

³This argument assumes that such value systems exist and can be identified.

their friends there, and, presumably, thus maintained an investment in former values and attitudes.

The data gathered in this thesis has practical implications in addition to the theoretical implications discussed above. The differences that were found between engineering students and education students add to the data on characteristics of individuals that enter different types of occupations that is of potential use to the counselor who is assisting a student in vocational decision-making.

Likewise, information on the characteristics of students in various curriculums is vital to an understanding of the growth that occurs in these individuals during their college years. It is felt that this thesis has added to the growing body of literature on characteristics of various types of college students. The practical application of such knowledge toward creating conditions to enhance growth involves a value judgment that cannot be supported by the kind of data gathered in this study. Longitudinal data are needed that pertain to the question of what kinds of conditions promote the greatest growth and fullest realization of potential in different types of individuals. Indeed, the issue of what kinds of growth are to be most highly valued and facilitated in the university community is a crucial one. Is a high degree of interpersonal involvement, for example, to be highly valued for all students; and if so, should steps be taken by the university to promote the development of close ties among students and to create a pre-dominance of "person orientation".

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APPENDIX A

BIOGRAPHICAL QUESTIONNAIRE

Name _____ Age _____ Race - White Negro Other
(circle correct answer)

Marital status - Single Married Divorced
(circle correct answer)

Academic classification this semester - Fr. So. Jr. Sr. Grad.

Will you be a full-time student at KSU (taking 12 or more hours) this sem.? _____

Manhattan address _____

Manhattan phone _____ What is your
hometown? _____

How much schooling does your father have? Please check the correct answer:

- | | |
|---|--|
| <input type="checkbox"/> Elementary school only | <input type="checkbox"/> Bachelor's degree |
| <input type="checkbox"/> 7th thru 9th grades | <input type="checkbox"/> One or two years of graduate or professional study (M.S., M.B.A., etc.) |
| <input type="checkbox"/> High school but less than a high school diploma | <input type="checkbox"/> Doctor of Philosophy (Ph.D) |
| <input type="checkbox"/> High school diploma | <input type="checkbox"/> Doctor of Medicine or doctor of Dental Surgery |
| <input type="checkbox"/> Some college (including jr. college) but less than a bachelor's degree | <input type="checkbox"/> Other (specify) _____ |

What is your father's main occupation? _____

What does he do on this job--please be specific (e.g., does he own, employed, etc.) _____

What are your vocational plans? _____

Which of the following alternatives describes the main role you expect to play in your future vocation? (For example, if you want to be a physicist and work primarily as a researcher, you would mark "1". If you want to be a physician who specializes in private practice, you would mark "5". An engineering major who plans to become a sales engineer should mark "4". A teacher who plans to become a principal should mark "3". An art major who plans to become a professional artist should mark "5", etc.) You may check more than one role if appropriate.

- | | |
|---|--|
| <input type="checkbox"/> 1. Researcher or investigator | <input type="checkbox"/> 5. Practitioner, performer, |
| <input type="checkbox"/> 2. Teacher or therapist | or producer of services |
| <input type="checkbox"/> 3. Administrator or supervisor | or products |
| <input type="checkbox"/> 4. Promoter or salesman of | <input type="checkbox"/> 6. None of the above |
| services or products | <input type="checkbox"/> 7. Don't know or undecided |

APPENDIX B

INTERVIEW SCHEDULE

Read to Respondent:

The form for this interview has been prepared as part of a research project carried on here in the Counseling Center. The purpose of this research is to study how friendships are formed by students like yourself. Most of the questions are concerned with how and when you became acquainted with persons who are your close friends. While the questions deal with your very good friends, you will see that they do not ask for information which is either embarrassing or hard to give. We won't know who your friends are. Your answers, of course, will be considered confidential.

We are interested in the general problem of friendship and not in specific persons. The value of this research depends upon getting frank and complete answers to the questions. Your frankness in answering the questions is very important.

APPENDIX B

FRIENDSHIP SCHEDULE

Section I

1. What is your age

- ☐ 1. 18 years or younger
- ☐ 2. 19-20
- ☐ 3. 21-22
- ☐ 4. 23-25
- ☐ 5. over 25 years

2. Are you a transfer student

- ☐ 1. Yes
- ☐ 2. No

3. Number of semesters at K-State _____

4. What is your class standing

- ☐ 1. Freshman
- ☐ 2. Sophomore
- ☐ 3. Junior
- ☐ 4. Senior
- ☐ 5. Other (specify) _____

5. What is your intended or declared major

6. Have you always been in Engineering (Or Secondary Education).

- ☐ 1. Yes
- ☐ 2. No

If no - what else have you majored in

7. What is your hometown

City _____ State _____

Section I

8. During the school year where do you live
- ☐ 1. With my parents
 - ☐ 2. With my spouse
 - ☐ 3. Dormitory
 - ☐ 4. Fraternity or sorority house
 - ☐ 5. Off-campus apartment
 - ☐ 6. Off-campus rooming house
 - ☐ 7. Co-op house
 - ☐ 8. With a private family (not your own home, not rooming house)
 - ☐ 9. Trailer
 - ☐ 10. Other (specify) _____
9. What is your father's main occupation--be specific--exactly what does he do on this job (e.g., does he own, employed, etc.) _____
10. How much schooling does your father have
- ☐ 1. Elementary school only
 - ☐ 2. 7th thru 9th grades
 - ☐ 3. High school but less than a high school diploma
 - ☐ 4. Graduate of high school but no college
 - ☐ 5. College but less than a bachelors degree
 - ☐ 6. A B.A. or B.S.
 - ☐ 7. One or two years of graduate or professional study--C.M.A., M.B.A., etc.
 - ☐ 8. Doctor of Philosophy (Ph.D.)
 - ☐ 9. Doctor of Medicine or doctor of Dental Surgery (M.D., D.D.S.)
 - ☐ 10. Other (specify) _____
11. What is your family's religious background
- ☐ 1. Both parents protestant--specify which affiliation _____
 - ☐ 2. Both parents Catholic
 - ☐ 3. Both parents Jewish
 - ☐ 4. Mixed (specify) _____
12. With what church do you most closely identify yourself _____
13. Do you personally feel that you need to believe in some form of religious faith or personal philosophy
- ☐ 1. Yes
 - ☐ 2. No
 - ☐ 3. Don't know

Section I

14. Do you feel that you have an adequate religious faith or personal philosophy as a guide to your conduct

_____ 1. No, I don't have
 _____ 2. Yes, I do have
 _____ 3. I don't know

15. How often do you attend religious services

_____ 1. About once a week or more
 _____ 2. About twice a month
 _____ 3. About once a month
 _____ 4. Mainly on important holidays
 _____ 5. Never, or almost never

16. In what ways has your evaluation of religion changed, if at all, since you came to college

_____ 1. I personally value religion more
 _____ 2. I personally value religion less
 _____ 3. I have not changed my evaluation

17. Which of the following statements of faith most closely describes your idea about the Deity? (Hand card to Respondent)

_____ 1. I believe in a Divine God, Creator of the Universe, who knows my innermost thoughts and feelings and to whom one day I shall be accountable
 _____ 2. I believe in a power greater than myself, which some people call God and some people call Nature
 _____ 3. I believe in the worth of humanity, but not in a God or in a Supreme Being
 _____ 4. I believe in natural law, and that the so-called universal mysteries are ultimately knowable according to scientific method
 _____ 5. I am not sure what I believe
 _____ 6. I'm an atheist
 _____ 7. Other (specify) _____

18. Do you consider yourself a Republican, a Democrat or an Independent in most political matters

_____ 1. Republican
 _____ 2. Democrat
 _____ 3. Independent
 _____ 4. Other (specify) _____

Section I

19. How does your father usually vote

- ☐ 1. Republican
☐ 2. Democrat
☐ 3. Independent
☐ 4. Other (specify) _____

20. Are you a member of a fraternity or sorority on campus

- ☐ 1. Yes
☐ 2. No

21. If no, are you now a pledge

- ☐ 1. Yes
☐ 2. No

22. If no, do you intend to pledge

- ☐ 1. Yes
☐ 2. No

23. Do you belong to an organization here on campus

- ☐ 1. Yes
☐ 2. No

If yes, specify which organizations: _____

24. Do you hold any offices in these organizations

- ☐ 1. Yes
☐ 2. No

Specify: _____

25. Do you belong to any organizations off campus or at home

- ☐ 1. Yes
☐ 2. No

If yes, specify which organizations: _____

Section I

26. Do you have a job during the academic year

_____ Yes

- _____ 1. I work less than 15 hours a week
- _____ 2. I work 15-24 hours a week
- _____ 3. 25-34 hours a week
- _____ 4. 35 or more hours a week

_____ No

- _____ 5. But seeking a job for school year
- _____ 6. Not seeking a job for school year

27. Do you depend more upon your earnings or your own savings to put yourself through school or more upon the support of your parents

- _____ 1. I depend more upon my own earnings or savings
- _____ 2. I depend more upon the support of my parents
- _____ 3. I depend about equally upon both

28. How are you financing your education

NOTE TO INTERVIEWER: Instruct respondent to proceed to Section II given by questionnaire. Hand respondent the Questionnaire I Booklet

Section II

It is possible that what are considered to be important problems and concerns by some persons may be less important for others. Look over the following list of statements. Which of these would cause you the greatest worry and concern. Indicate the item which would concern you the most by placing a "1" in the space provided on the left of that item. Now look for the item that seems of second greatest concern to you and write a "2" to the left of it. Rank the entire set of nine items in this way. If you feel that two items are of equal concern to you use the same number for both. For example, if you feel that serious financial difficulties and problems with your parents are of equal concern to you and are of greater concern than the other seven items, give each a "1".

- _____ a. Embarrassing things that have happened to you on dates
- _____ b. Problems which you have with your parents
- _____ c. Trouble that members of your family are in
- _____ d. Serious financial difficulties that you have
- _____ e. Personal problems that make you worried and afraid
- _____ f. Your sexual experiences
- _____ g. Your ideas and plans about marriage
- _____ h. Your personal goals and plans for the future
- _____ i. Difficulties you are having with school work

Section III

On this sheet of paper will you list the initials or first name of the persons you consider to be your very good friends:

SCHEDULE FOR LOCAL FRIENDSHIPS

Section III

A. Background Information for Each Friend:

1. What is () age
2. What is () sex

B. Information on the Formation of the Friendship:

1. When did you first become acquainted with ()
(NOTE: date for each person)
2. Where did you first meet () (probe for specific contexts)
3. How did you first meet () (probe for how the friendship was initiated-- who was responsible for introducing the friend)

C. Information on Activities Shared with Friends:

1. (Hand list of activities to R) From the following list, could you tell me the kinds of things you do when you get together with () (Ask R to give the numbers)

Section III

1. Play cards
2. Play games (other than cards)
3. Attend sports events
4. Attend movies
5. Attend concerts
6. Listen to music
7. Go to dances
8. Attend church
9. Go bowling
10. Watch TV
11. Dine at a restaurant
12. Go to parties
13. Participate in sports activities (e.g., handball, tennis, basketball, football, etc.)
14. Engage in conversation
15. Vacation with
16. Study together
17. Participate in clubs or organizations with each other
18. Attend convocations, university or public meetings together

Section III

Ask R to give the numbers associated with the activities: record these numbers

Ask R if there are other activities he shares with () which are not included on the list. Record these, if any

2. Are there certain kinds of activities that you feel persons are likely to engage in only with their very close friends and not just casual acquaintances
3. If any different than list, ask R if he has participated with ()

D. Information on Confiding in Friends: (Yes = + No = 0)

1. Have you ever talked to () about embarrassing things that have happened to you on dates. If no, would you feel free to
2. Have you ever talked to () about problems you have with your parents. If no, would you feel free to

Section III

3. Have you ever talked to
() about troubles that
members of your family
are in. If no, would
you feel free to
4. Have you ever talked to
() about difficulties
you are having with
your school work. If no,
would you feel free to
5. Have you ever talked to
() about serious financial
difficulties you have. If
no, would you feel free to
6. Have you ever talked to
() about personal prob-
lems that make you worried
and afraid. If no, would
you feel free to
7. Have you ever talked to
() about sexual experi-
ences that you have had.
If no, would you feel
free to
8. Have you ever talked to
() about your ideas &
plans for marriage. If
no, would you feel free
to

Section III

9. Have you ever talked to
() about your personal
goals and plans for the
future. If no, would
you feel free to
10. (A) in an emergency situ-
ation would you feel free
to borrow a large sum of
money from () if he had
it to lend: (B) have you
ever borrowed money from
()
11. Do you feel free to really
let your hair down and just
be yourself with ()
12. Have you ever been to
()'s home for a visit
13. Have you ever taken ()
to your home for a visit
14. Would you be willing to
take () to your home
for a visit
15. Are you or () more
likely to suggest get-
ting together
16. Have you ever done things
with () on the spur of
the moment

SCHEDULE FOR NON-LOCAL FRIENDSHIPS

Section III

A. Background Information for Each Friend:

1. What is () age

2. What is () sex

B. Information on the Formation of the Friendship:

1. When did you first become
acquainted with ()
(NOTE: date for each
person)

2. Where did you first meet
() (probe for specific
contexts)

3. How did you first meet
() (probe for how the
friendship was initiated--
who was responsible for
introducing the friend

C. Information on Activities Shared with Friends:

1. From the following list
could you tell me the
kinds of things you used
to do when you got
together with ()

Section III

2. Are there certain kinds of activities that you feel persons are likely to engage in only with their very close friends and not just casual acquaintances
3. If any different than list, ask R if he has participated with ()

D. Information on Confiding in Friends:

1. Have you ever talked to () about embarrassing things that have happened to you on dates
2. Have you ever talked to () about problems you have with your parents
3. Have you ever talked to () about troubles that members of your family are in
4. Have you ever talked to () about difficulties that you are having with your school work

Section III

5. Have you ever talked to
 () about serious financial difficulties that
 you have
6. Have you ever talked to
 () about personal
 problems that make you
 worried and afraid
7. Have you ever talked to
 () about sexual experiences you have had
8. Have you ever talked to
 () about your ideas and
 plans for marriage
9. Have you ever talked to
 () about your personal
 goals and plans for the
 future
10. In an emergency situation
 would you have felt free
 to borrow a large sum of
 money from ()
11. Do you feel free to really
 let your hair down with
 () and just be yourself
12. Have you ever been to
 ()'s home for a visit

Section III

13. Have you ever taken ()
home with you for a visit
14. Would you be willing to
take () to your home
for a visit
15. Are you or () more
likely to suggest
getting together
16. Have you ever done any-
thing with () on the
spur of the moment

Section IV

From all of the persons you have cited as very good friends which would you consider to be closer to you than the others:

- a. List in rank order--preferable 3 closest friends:
- b. Of those friends who are "closer" to you who would you consider to be your very closest friend(s):
- c. Which of the persons you have listed would you consider to be least close:

FAMILY SECTION

Section V

A. During the School Year:

1. About how frequently do you call home?

- ☐ a. Once a week or more
- ☐ b. Once every 1-2 weeks
- ☐ c. Once every 3-4 weeks
- ☐ d. Once a month
- ☐ e. Once every couple of months
- ☐ f. Once a semester
- ☐ g. Only in emergencies

2. About how frequently do you write home?

- ☐ a. Once a week or more
- ☐ b. Once every 1-2 weeks
- ☐ c. Once every 3-4 weeks
- ☐ d. Once a month
- ☐ e. Once every couple of months
- ☐ f. Once a semester
- ☐ g. Never

3. How frequently do you visit home?

- ☐ a. Once a week or more
- ☐ b. Once every 1-2 weeks
- ☐ c. Once every 3-4 weeks
- ☐ d. Once a month
- ☐ e. Once every couple of months
- ☐ f. A couple of times or less during the semester
- ☐ g. Only during vacations
- ☐ h. Never

4. How frequently do your parents call you?

- ☐ a. Once a week or more
- ☐ b. Once every 1-2 weeks
- ☐ c. Once every 3-4 weeks
- ☐ d. Once a month
- ☐ e. Once every couple of months
- ☐ f. Once a semester
- ☐ g. Only in emergencies

Section V

5. How frequently do your parents write you?

- ☐ a. Once a week or more
- ☐ b. Once every 1-2 weeks
- ☐ c. Once every 3-4 weeks
- ☐ d. Once a month
- ☐ e. Once every couple of months
- ☐ f. Once a semester
- ☐ g. Only in emergencies

6. How frequently do your parents visit you?

- ☐ a. Once a week or more
- ☐ b. Once every 1-2 weeks
- ☐ c. Once every 3-4 weeks
- ☐ d. Once a month
- ☐ e. Once every couple of months
- ☐ f. A couple of times or less during the semester
- ☐ g. Only during vacations
- ☐ h. Never

B. Part 1: Now we would like to ask you some questions about who you talk to when you are worried or bothered by different things. Below are listed a series of problems and concerns which sometimes bother college students. IF YOU WERE TO HAVE such a problem, to whom would you be most likely to go to talk over the problem.

Place a 1 by the response which would be your first choice.

1. Your ideas and plans for marriage

- ☐ a. Close friends
- ☐ b. Parents
- ☐ c. Professor
- ☐ d. Minister, counselor, advisor
- ☐ e. None of the above

2. Your personal goals and plans for the future

- ☐ a. Close friends
- ☐ b. Parents
- ☐ c. Professor
- ☐ d. Minister, counselor, advisor
- ☐ e. None of the above

Section V

3. Embarrassing things that have happened to you on dates

- ☐ a. Close friends
- ☐ b. Parents
- ☐ c. Professor
- ☐ d. Minister, counselor, advisor
- ☐ e. None of the above

4. Problems which you have with your parents

- ☐ a. Close friends
- ☐ b. Parents
- ☐ c. Professor
- ☐ d. Minister, counselor, advisor
- ☐ e. None of the above

5. Serious financial difficulties that you have

- ☐ a. Close friends
- ☐ b. Parents
- ☐ c. Professor
- ☐ d. Minister, counselor, advisor
- ☐ e. None of the above

6. Personal problems that make you worried and afraid

- ☐ a. Close friends
- ☐ b. Parents
- ☐ c. Professor
- ☐ d. Minister, counselor, advisor
- ☐ e. None of the above

7. Troubles that members of your family are in

- ☐ a. Close friends
- ☐ b. Parents
- ☐ c. Professor
- ☐ d. Minister, counselor, advisor
- ☐ e. None of the above

8. Difficulties you are having with your school work

- ☐ a. Close friends
- ☐ b. Parents
- ☐ c. Professor
- ☐ d. Minister, counselor, advisor
- ☐ e. None of the above

Section V

9. Your sexual experiences

- ☐ a. Close friends
- ☐ b. Parents
- ☐ c. Professor
- ☐ d. Minister, counselor, advisor
- ☐ e. None of the above

Part 2: Will you now go back over the list of problems and concerns again, this time marking a "2" beside the person you would be next most likely to talk to if bothered by such a problem. (If a "1" is placed by "None of the above" on a question, please skip that question.)

Part 3: Finally, will you mark a "3" beside the person to whom you would be least likely to go if bothered by such a problem.

- C. The following statements deal with some of the kinds of things that students and their parents may talk to one another about. Will you mark the response which most accurately describes how frequently you talk with your parents about such matters.

How frequently do you talk with your parents

1. About intellectual matters such as world affairs, current events, social problems, etc.

- ☐ a. Very often
- ☐ b. Occasionally
- ☐ c. Rarely
- ☐ d. Never

2. About your feelings, experiences, and ideas regarding your life

- ☐ a. Very often
- ☐ b. Occasionally
- ☐ c. Rarely
- ☐ d. Never

3. About the feelings, experiences and ideas concerning life that your parents have

- ☐ a. Very often
- ☐ b. Occasionally
- ☐ c. Rarely
- ☐ d. Never

Section V

4. About where you are heading in life

- ☐ a. Very often
- ☐ b. Occasionally
- ☐ c. Rarely
- ☐ d. Never

APPENDIX C

BIOGRAPHICAL SKETCH OF THE SAMPLE

The sample was composed of 20 juniors (11 educators and 9 engineers) and 20 seniors (9 educators and 11 engineers). Their ages ranged from 19-23 years with comparable distributions for both engineers and educators. Most of the Rs were from urban areas in the midwest, primarily from Kansas. Five engineers and three educators were from rural areas. Rs had been attending Kansas State University for an average of 5.25 semesters. There was a tendency for engineers to have been attending KSU longer than educators (5.40 and 4.65 semesters respectively). Seven engineers and 9 educators were transfer students from junior colleges and smaller universities. Only two engineers but seven educators had been previously enrolled in a different major. This may be at least partially explained by the University requirement that engineering students declare their field of specialization within engineering by the end of their freshman year; educators are not required to declare a field of study until their junior or senior year. Engineers, then, tend to begin their college careers in the College of Engineering and to remain there. Educators, on the other hand, come to their field through more diverse channels, from humanities to physical sciences.

Five of the seven fields of engineering were represented by the sample of 20 engineers--Mechanical (5), Chemical (2), Industrial (5), Nuclear (3), and Civil Engineering (5).¹ Six of the nine areas of concentration within Secondary Education were represented--Social Science (5), Science and Math (3),

¹There were no Rs from either Electrical or Agricultural Engineering.

Language (2), Physical Education (9), and Agriculture (1).²

In the entire sample of 40 Rs, there were ten fraternity members, five from both engineering and education. The remaining 30 were not affiliated with a fraternity. Nine of the engineers indicated that their residence during the college year was on campus (dormitory, fraternity, scholarship house). The remaining 11 engineers lived in off-campus apartments, rooming houses, or mobile homes. Fourteen educators lived in on-campus housing and 6 lived off-campus.

The above information was obtained in order to further specify sample parameters. On most of these variables the engineering sample and education sample are comparable. In each case about half of the Rs are juniors and half seniors, between the ages of 19 and 23. The Rs are primarily urban youth from Kansas that have been attending KSU for about 5 semesters. There was a tendency, however, for the engineering Rs to have been attending KSU longer than had education Rs. This is evidenced by the difference in number of semesters at KSU and also by the smaller number of engineers that were transfer students.

The engineering students tended to have begun their college careers in the KSU College of Engineering and to have remained there. The education Rs were more likely to have entered this area after having had experience in another college and in a different field of study. This was discussed in terms of the different requirements of the respective colleges. What may also be implied, however, is that there are differences between engineers and educators in professional identity and commitment. Some ramifications of

²None of the Rs were from Art, Business, or Speech.

this possibility were discussed in Chapter IV.

In both samples there was broad representation of the fields of specialization within engineering and education. There were no differences between engineers and educators in fraternity membership. However, there was a tendency for most of the engineering Rs to live in off-campus housing during the college year and for most of the educators to live on campus.

APPENDIX D

DATA TABLES FOR FINDINGS SUMMARIZED IN CHAPTER THREE

ADDITIONAL MEASURES OF AFFECT IN FRIENDSHIP

INTIMACY OF FRIENDSHIP X FELT FREEDOM OF ENGINEERS TO BORROW MONEY			
	<u>R feels free to borrow money</u>	<u>R doesn't feel free to borrow money</u>	Total
Closest friendships	44	12	56
Least close friendships	<u>20</u>	<u>14</u>	<u>34</u>
Totals	64	26	90

$$\chi^2 = 4.01; p < .05$$

$$\phi = .211$$

INTIMACY OF FRIENDSHIP X FELT FREEDOM OF EDUCATORS TO BORROW MONEY			
	<u>R feels free to borrow money</u>	<u>R doesn't feel free to borrow money</u>	Total
Closest friendships	50	10	60
Least close friendships	<u>22</u>	<u>13</u>	<u>35</u>
Totals	72	23	95

$$\chi^2 = 5.05; p < .05$$

$$\phi = .230$$

INTIMACY OF FRIENDSHIP X FELT FREEDOM OF ENGINEERS
TO BE THEMSELVES

	<u>R</u> feels free to be himself	<u>R</u> doesn't feel free to be himself	Total
Closest friendships	54	2	56
Least close friendships	<u>24</u>	<u>10</u>	<u>34</u>
Totals	78	12	90

$$\chi^2 = 12.22; p < .001$$

$$\phi = .368$$

INTIMACY OF FRIENDSHIP X FELT FREEDOM OF EDUCATORS
TO BE THEMSELVES

	<u>R</u> feels free to be himself	<u>R</u> doesn't feel free to be himself	Total
Closest friendships	55	5	60
Least close friendships	<u>27</u>	<u>8</u>	<u>35</u>
Totals	82	13	95

$$\chi^2 = 3.94; p < .05$$

$$\phi = .204$$

INTIMACY OF FRIENDSHIP X HAVING BORROWED MONEY (ENGINEERS) *

	<u>R</u> had bor- rowed money	<u>R</u> hadn't bor- rowed money	Total
Closest friendships	18	19	37
Least close friendships	<u>4</u>	<u>8</u>	<u>12</u>
Totals	22	27	49

$$\chi^2 = 5.42; p < .02$$

$$\phi = .305$$

* Data reported here apply to local friends only.

INTIMACY OF FRIENDSHIP X HAVING BORROWED MONEY (EDUCATORS) *

	<u>R</u> had bor- rowed money	<u>R</u> hadn't bor- rowed money	Total
Closest friendships	13	12	25
Least close friendships	<u>3</u>	<u>9</u>	<u>12</u>
Totals	16	21	37

$$\chi^2 = 2.40; \text{N.S.}$$

$$\phi = .255$$

* Data reported here apply to local friends only.

INTIMACY OF FRIENDSHIP X HAVING BEEN TO THE
FRIEND'S HOME (ENGINEERS)

	<u>R</u> has been to the friend's home	<u>R</u> hasn't been to the friend's home	Total
Closest friendships	37	19	56
Least close friendships	<u>16</u>	<u>18</u>	<u>34</u>
Totals	53	37	90

$$\chi^2 = 3.15; \text{N.S.}$$

INTIMACY OF FRIENDSHIP X HAVING BEEN TO THE
FRIEND'S HOME (EDUCATORS)

	<u>R</u> has been to the friend's home	<u>R</u> hasn't been to the friend's home	Total
Closest friendships	46	14	60
Least close friendships	<u>26</u>	<u>9</u>	<u>35</u>
Totals	72	23	95

$$\chi^2 = .06; \text{N.S.}$$

INTIMACY OF FRIENDSHIP X HAVING TAKEN THE
FRIEND HOME (ENGINEERS)

	R has taken the friend home	R hasn't taken the friend home	Total
Closest friendships	28	28	56
Least close friendships	<u>17</u>	<u>17</u>	<u>34</u>
Totals	45	45	90

$\chi^2 = 0$; N.S.

INTIMACY OF FRIENDSHIP X HAVING TAKEN THE
FRIEND HOME (EDUCATORS)

	R has taken the friend home	R hasn't taken the friend home	Total
Closest friendships	47	13	60
Least close friendships	<u>27</u>	<u>8</u>	<u>35</u>
Totals	74	21	94

$\chi^2 = .01$; N.S.

R-TO-PARENT INTERACTION FREQUENCY X PARENT-TO-R
INTERACTION FREQUENCY

	<u>R</u> interacts frequently with parents	<u>R</u> interacts less fre- quently with parents	Total
Parents interact frequently with <u>R</u>	13	7	20
Parents interact less fre- quently with <u>R</u>	<u>6</u>	<u>14</u>	<u>20</u>
Totals	19	21	40

$$\chi^2 = 4.91; p < .05$$

PARENTAL INTERACTION FREQUENCY X DEGREE OF ENGAGING
IN ACTIVITIES WITH CLOSEST FRIEND

	<u>R</u> engages in many activ- ities with closest friend	<u>R</u> engages in few activities with closest friend	Total
<u>R</u> interacts frequently with parents	11	5	16
<u>R</u> interacts less fre- quently with parents	<u>17</u>	<u>7</u>	<u>24</u>
Totals	28	12	40

$$\text{corr. } \chi^2 = .045; \text{ N.S.}$$

$$\phi = .022$$

QUALITY OF INTERACTION X DEGREE OF CONFIDING IN CLOSEST
FRIEND (ENGINEERS)

	R engages in a high quality of interaction with parents	R engages in a low quality of interaction with parents	Total
R confides to a high degree in closest friend	12	5	17
R confides to a low degree in closest friend	<u>2</u>	<u>1</u>	<u>3</u>
Totals	14	6	20

corr. $\chi^2 = .298$; N.S.
 $\phi = .030$

QUALITY OF INTERACTION X DEGREE OF CONFIDING IN CLOSEST
FRIEND (EDUCATORS)

	R engages in a high quality of interaction with parents	R engages in a low quality of interaction with parents	Total
R confides to a high degree in closest friend	12	4	16
R confides to a low degree in closest friend	<u>0</u>	<u>4</u>	<u>4</u>
Totals	12	8	20

corr. $\chi^2 = 4.70$; $p < .05$
 $\phi = .612$

PARENTAL INTERACTION FREQUENCY X NUMBER OF FRIENDS CITED

	<u>R interacts frequently with parents</u>	<u>R interacts less frequently with parents</u>	Total
<u>R</u> named many friends	9	8	17
<u>R</u> named few friends	<u>6</u>	<u>17</u>	<u>23</u>
Totals	15	25	40

$$\chi^2 = 3.00; \text{N.S.}$$

$$\phi = .274$$

PARENTAL INTERACTION FREQUENCY X QUALITY OF
INTERACTION WITH PARENTS

	<u>R interacts frequently with parents</u>	<u>R interacts less frequently with parents</u>	Total
<u>R</u> engages in a high quality of interaction with parents	9	17	26
<u>R</u> engages in a low quality of interaction with parents	<u>7</u>	<u>7</u>	<u>14</u>
Totals	16	24	40

$$\chi^2 = .897; \text{N.S.}$$

$$\phi = .150$$

QUALITY OF INTERACTION WITH PARENTS X NUMBER OF
FRIENDS CITED

	<u>R engages in a high quality of interaction with parents</u>	<u>R engages in a low quality of interaction with parents</u>	Total
<u>R cited many friends</u>	13	4	17
<u>R cited few friends</u>	<u>13</u>	<u>10</u>	<u>23</u>
Totals	26	14	40

$$\chi^2 = 1.709; \text{N.S.}$$

$$\phi = .207$$

QUALITY OF INTERACTION WITH PARENTS X DEGREE OF AGREEMENT
WITH PARENTS

	<u>R indicates a high degree of agreement with parents</u>	<u>R indicates a low degree of agreement with parents</u>	Total
<u>R engages in a high quality of interaction with parents</u>	17	9	26
<u>R engages in a low quality of interaction with parents</u>	<u>7</u>	<u>7</u>	<u>14</u>
Totals	24	16	40

$$\chi^2 = .897; \text{N.S.}$$

$$\phi = .150$$

DEGREE OF AGREEMENT WITH PARENTS X FREQUENCY OF INTERACTION
WITH PARENTS

	<u>R</u> indicates a high degree of agreement with parents	<u>R</u> indicates a low degree of agreement with parents	Total
<u>R</u> interacts frequently with parents	9	10	19
<u>R</u> interacts less fre- quently with parents	<u>15</u>	<u>6</u>	<u>21</u>
Totals	24	16	40

$\chi^2 = 2.406$; N.S.
 $\phi = -.245$

FEELINGS TOWARD PARENTS X ORGANIZATION SCORE

	<u>Rs</u> who indicated a predominance of positive feelings toward parents		
	Engineers	Educators	All <u>Rs</u>
<u>Rs</u> who scored above the median organization score	6	4	10
<u>Rs</u> who scored below the median organization score	<u>0</u>	<u>9</u>	<u>9</u>
Totals	6	13	19

corr. $\chi^2 = 5.35$; $p < .05$
 $\phi = .644$

CURRICULAR CHOICE AND PRIMARY RELATIONSHIPS:
A STUDY OF THE RELATIONSHIP BETWEEN INTERPERSONAL
TIES AND VOCATIONAL CHOICES OF MALE COLLEGE STUDENTS

by

PAMELA CARR RINGHEIM

B. A., Kansas State University, 1967

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

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Manhattan, Kansas

1970

This thesis investigates aspects of the primary relationships of male college students. It views a primary relationship as one in which persons are predisposed to enter into a wide range of activities with one another, and their predisposition to do so is associated with a predominance of positive affect. Anne Roe's notion of person orientation as it relates to vocational choice provides a basis for expecting differences in interpersonal relations between students in different types of curricula. The concept of interpersonal involvement is utilized as a means of measuring differences in primary relationships between a group of engineering (non-person oriented) students and education (person oriented) students. Particular attention is given to describing the conditions leading to friendship formation, examining number of close friends listed, investigating the closeness of friendships and of parent-student ties, and exploring organizational participation. Hypotheses were derived pertaining to expected differences between engineers and educators with respect to these variables.

The data come from interviews administered to a relatively homogeneous sample of 40 respondents, half of whom are engineering majors and half education majors enrolled in upper-level engineering and education classes at Kansas State University in the Fall of 1968.

The evidence shows that engineers tend to cite fewer friends than educators. These friends are more likely to be students at the University, or to have been met at the University than friends of educators. Educators are more likely than engineers to form intimate friendships with persons met in the hometown setting. Educators report having met friends through the channel of personal contact; engineers more frequently meet friends spontaneously. On the average, educators have known their friends longer than engineers.

The data show that as intimacy in a friendship increases so does the number of activities shared with friends. Likewise, affective ties of various kinds are stronger in friendships identified as highly intimate. A positive relationship obtains between affective and activity ties with friends. However, no differences exist in the closeness of friendships maintained by engineers and educators.

A R-by-R analysis raises questions for the present model of primary relationships and for Roe's theory. The data reveal that regardless of a R's major or the intimacy of the friendship involved, Rs can be identified as high or low confiders, active and less active individuals.

The major portion of the parent-student relationship data reveal no differences between engineers' and educators' closeness with parents. Frequency of interaction with parents, as a measure of activity in family ties, does not distinguish between engineers and educators. Of the indices of affect in the family--i.e., feelings toward parents, confiding in parents, quality of interaction and degree of agreement with parents--only the variable of feelings toward parents significantly distinguishes between the two groups. It seems that the concept of primary relationships used in this thesis is less effective for investigating parent-student relationships than for examining friendships.

The unsystematic associations among the various indices of family and friendship relationships give little support to a conception of interpersonal involvement wherein qualitative aspects are related to quantitative aspects within the same type of relationship or to qualitative aspects in a different type of primary relationship.

The evidence indicates that engineers reveal greater participation in

organizations than do educators. No associations obtain between organizational affiliation and additional aspects of interpersonal involvement.

The major portion of the present data fail to verify hypotheses derived from Roe's theory of vocational choice. However, because the results partially support Roe, it is suggested that her theory merits further study. These data add to the literature on characteristics of college students of use to counselors and educational planners.