

THE SATISFACTION OF INTERPERSONAL BEHAVIORAL NEEDS,  
PERCEPTIONS OF INTERPERSONAL TRUST, AND LEVELS OF  
GROUP PRODUCTIVITY: A CORRELATIONAL STUDY

by

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~~For the Department~~

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## CHAPTER ONE

### INTRODUCTION

One of the principle areas of interpersonal relationships that researchers have explored is the concept of the various rewards and costs that are derived from interactions. It is generally assumed that as the rewards derived from membership in an interaction increase and as the costs involved decrease, the individuals will be more attracted to that relationship. In addition, it is assumed that the level of group members' satisfactions is positively correlated with group cohesion, such that the greater the satisfaction level of the group, the greater the cohesiveness of the group. This relationship between individual satisfactions and group cohesion is predicted from both reward/cost theory (Thibaut and Kelley, 1959) and social penetration theory (Altman and Taylor, 1973). Both theories maintain that interpersonal attraction is a function of the amount of rewards that is present and the amount of costs that will be incurred through continued interactions. Thus interpersonal attraction and group attraction (or the level of group cohesion) appear to be related to the members' evaluations of the reward/cost structure (or ratio) of the group. Altman and Taylor (1973) state that "evaluation is an assessment of an immediately preceding interaction with regard to a personal-subjective standard of desirability" (p. 36). Altman and Taylor's hypothesis is that the rate and level of social penetration

is a function of the interpersonal reward/cost characteristics of the interaction, such that the greater the reward-to-cost ratio, the greater the rate and level of development of the relationship. Although adequate theoretical investigations support the notion that the satisfaction of interpersonal needs (or the positive ratio of rewards-to-costs) will lead to greater attraction to the interpersonal relationship on both an individual level (attraction to the group, or the rate and level of social penetration processes) and on a group level (the development of group cohesion), empirical research supporting these hypotheses is lacking. Thus this study is an attempt to determine the effects of the satisfaction of individual group members' needs on the individuals' perceptions of the group interactions and on the groups' task activities.

#### Review of Previous Research

Satisfaction of Interpersonal Needs. One of the problems associated with the study of the effects of the satisfaction of individual needs on the dependent variables outlined above is the determination, or the development, of a definition about what constitutes a reward and/or a cost. Thibaut and Kelley (1959) state that "by rewards, we refer to any pleasures, satisfactions, and gratifications the person enjoys. By costs, we refer to those factors that operate to inhibit or deter a performance of a sequence of behavior." (pp. 12-13). Altman and Taylor (1973) conclude that "there is no broad consensus regarding 'important' social needs and their means of satisfaction" (p. 34).

One of the most common factors that has been described as a source of individual needs is that of the interpersonal behavioral needs identified by Schutz (1960, 1966; see Appendix A). He described the concept of interpersonal needs in terms of the "existence of conditions of an individual the non-realization of which leads to undesirable consequences" (1966, p. 15). These needs are viewed as interpersonal needs, the satisfaction of which is produced in the context of interacting with other individuals. Schutz postulates three basic interpersonal needs.

The interpersonal need for inclusion is concerned with, the individual's desire to maintain a satisfactory relationship with people with respect to interaction and association. Schutz (1966) has stated that the need for inclusion is primarily concerned with initiating a relationship. Patton and Giffin (1974) have proposed that "as involvement increases, the other two dimensions become important: control and affection" (p. 56). The need for control is concerned with establishing and maintaining satisfactory relationships with others in terms of a mutual respect for the competence and responsibilities of others. The dimension of affection is concerned with establishing and maintaining satisfactory relationships with others with respect to love and affection.

The Effects of the Satisfaction of Interpersonal Behavioral Needs on Individual's Perceptions. Schutz (1966) postulated that there exists two different perspectives from which to view interpersonal behavior what one expresses

toward others and what one wants from others. The notion of "compatibility" refers to the amount of satisfaction that is gained from interaction with another individual. The greater the correlation between what two individuals want from each other and what they express toward each other, the greater their compatibility.

Schutz advances a "theorem of compatibility" whereby: "if the compatibility of one dyad, y<sub>1</sub> is greater than the compatibility of another, y<sub>2</sub>, then the members of y<sub>1</sub> are more likely to prefer each other for continued personal contact" (1966, p. 120). The evidence to support this theorem is minimal. Schutz (1966) reports one study by Alexander, Gonzales, Herminhaus, Marwell, and Wheelless (1957) which studied the effects of the satisfaction of individuals' needs on their perceptions of their interaction with other individuals. Subjects were members of a fraternity at the Massachusetts Institute of Technology. They filled out a questionnaire which assessed their true feelings toward the other members of the fraternity, covering a broad range of likes and dislikes of members and also their choice of leaders. Compatibility measures were taken of three aspects of interpersonal relationships: (1) reciprocal compatibility - the desire for an optimal relation between individuals in each need area, (2) originator compatibility - the development of members' preferred behavior regarding originating and receiving relations; and (3) interchange compatibility - the mutual expression of a given need area. For each need and each person, a distribution of the scores of every other members

was obtained; all those above the median of these scores were considered compatible with that members on the particular compatibility measure; everyone below the median was considered incompatible.

Compatibility was an accurate predictor of sociometric choice. However, a more interesting finding was that the effects of the particular type of compatibility (in terms of inclusion, control, and affection) varied with the kind of sociometric choice being made. Thus for choice of roommate compatibility on the affection dimension was most important; for choice of traveling companion, compatibility on the control dimension was most important; for choice of fraternity offices, compatibility on the inclusion dimension was most important. Thus the study confirmed the notion that compatibility with others will affect one's preferred interaction, it also points out that situational factors influence the kind of compatibility that is most important for one's preferred interactions.

There appears to be some supporting evidence which demonstrates that the satisfaction of the interpersonal behavioral needs, or the positive correlation between what one wants and what one gets from a particular interaction with another individual, will have significant effects upon an individual's perceptions with respect to preferred interactions with others. However, empirical research directed toward understanding the effects of the satisfaction of interpersonal behavioral needs upon members' perceptions of the group interactions and the effects upon the group characteristics (i.e. task activities) has been lacking. The present study is an attempt to determine these effects.

The Effects of the Satisfaction of Interpersonal Behavioral Need on Group Processes. Investigations of the effects of the satisfaction of interpersonal behavioral needs have focused on two interrelated aspects of group processes: group cohesiveness and group productivity. In terms of the cohesiveness of a group, Schutz (1966) has stated that, "If the compatibility of one group, h, is greater than the compatibility of another group, m, then h will be more cohesive than m" (p. 134, Author's italics). It does appear that some groups possess a certain atmosphere of "closeness" or commonness of purpose that is lacking in other groups. The concept of group cohesiveness refers to many different things and there have been some problems in defining the construct. Lott (1961) states that cohesiveness is the condition defined as "that group property which is inferred from the number and strengths of mutual positive attitudes among the members of a group" (p. 279). Shaw (1971) has researched the concept of group cohesiveness from the perspective of the degree to which the members of a group are attracted to one another, or the degree to which the group coheres or "hangs together". Perhaps the most useful definition of group cohesiveness has been provided by Festinger (1950) who has stated that it is "the resultant of all the forces acting on the members to remain in the group" (p. 274).

Granted that there are differences between groups in terms of the level of cohesiveness, how is this cohesiveness achieved? Patton and Giffin (1973) have suggested that "the attractiveness of the group for its members depends basically

upon the extent to which it satisfied their individual needs" (p. 82). Davis (1969) has suggested that "there are a number of variables that increase the attractiveness of a group, but all of them have the feature that they increase the satisfaction of the individual's needs through association with the group" (p. 78). There has been some research to suggest that any kind of satisfaction can lead to increased cohesiveness and that group cohesion is dependent upon member satisfaction. Members of cohesive groups are generally better satisfied with the group than are members of noncohesive groups. Van Zelst (1952) found that members of groups formed on the basis of sociometric choice had significantly higher job satisfaction than members of control groups. Other findings (Marquis, Guetzkow and Heyns, 1951; Gross, 1954, and Exline, 1957) attest to a positive relationship between member satisfaction and group cohesiveness. Shaw (1971) concludes that "the general findings with respect to group cohesiveness and group process are therefore reasonably consistent, despite the many inadequacies in the operationalizing of cohesiveness" (p. 205). Thus the satisfaction of group members' needs appears to be intricately related to the concept of group cohesiveness.

It should be clear from the preceding discussion that highly cohesive groups are composed of members who are compatible; hence, group cohesiveness is one form of group compatibility. A number of theorists and researchers have been interested in the consequences of compatibility per se. Schutz (1966) reports the study by Gross (1957) in which subjects were formed into five-man groups performing a series

of experimental tasks and discussions. A cohesiveness scale was constructed and each group member was scored on this eight-point (seven-item) scale. The group was then given a score equal to the sum of the individual members' scores on cohesiveness. The nine groups that were involved were ranked from 1 to 9 on cohesiveness. An early edition of the FIRO-B instrument was given to subjects and compatibility scores for all dyads were combined to give a group compatibility score, and the groups were ranked according to this criterion. The results show that the correlation between total compatibility and cohesiveness is statistically significant. Thus compatibility appears to be a significant variable associated with the development of group cohesiveness, but more research needs to be conducted before a final conclusion can be drawn about the relationship between these two variables. This study is an attempt to discover the reliability of the findings that have been presented above.

The effects of the satisfaction of group members' needs on the level of group productivity have been investigated from the perspective of both the effects of group cohesiveness on group productivity and the effects of need-compatibility on group productivity. Schutz (1966) has formulated the following basic hypothesis, "If the compatibility of one group, h, is greater than that of another group, m, than the goal achievement of h will exceed that of m" (p. 105, Author's italics). In the investigations of the effects of the satisfaction of interpersonal needs upon the level of group productivity, Fiedler (1967) has stated that interpersonal relationships with a group and task accomplishment are intricately related. Davis (1969) has stated

that "since cohesive groups are composed of persons motivated to be together, we would expect group performance to benefit from cohesiveness through general motivation alone" (p. 78). The concept of cohesiveness has been shown to have important implications to all functional groups. Research suggests that group members who are attracted to the group work harder to achieve the goals of the group and that one consequence of this is higher productivity by more cohesive groups.

Shaw (1971) reports that "relatively few laboratory studies have been designed for the primary purpose of examining the relationship between cohesiveness and productivity, although there is some evidence on this issue from studies designed for other purposes" (p. 201). Some acceptable evidence for this hypothesized relationship between group cohesiveness and productivity derives from field studies and field experiments. Goodacre (1951), Hemphill and Sechrest (1952), and Strapp and Hausman (1953) report a positive and significant relationship between the two variables in field studies involving army personnel. Evidence from studies in the industrial setting are also generally in accord with the positive relationship expected between group cohesiveness and group productivity. Van Zelst (1952a, 1952b), and Speroff and Kerr (1952) report a positive and significant correlation between the two variables as applied to work patterns in the industrial setting. Finally, there is evidence that cohesiveness is related to group effectiveness in the classroom, as reported in a study by Shaw and Shaw (1962).

The research directed toward establishing the relationship between compatibility of needs and group productivity has generally established positive relationships between these two variables. Klein (1956) has indicated that compatibility of members and similarity of characteristics between individuals lead to a more effective collaboration and performance. Positive results supporting the hypothesis of a positive relationship between compatibility and productivity were also reported by Moos and Speisman (1962). The most conclusive results of a positive relationship between the two variables come from the work cited by Schutz (1966). Schutz reports an experiment, entitled "The Harvard Compatibility Experiment", which involved the construction of compatible and incompatible five-man groups based on an early edition of the FIRO-B instrument, and predicted that the compatibles would be more productive. The results showed significant differences (at the .02 level) between compatibles and incompatibles in the expected direction. In another study, Schutz reports that although the correlation between compatibility and group productivity was not significant, it was in the right direction and that the lack of significance was due to the small number of groups that were involved in the study. Thus there appears to be strong evidence to support the notion that the satisfaction of members' needs will influence the level of group productivity.

There appears to be a firm basis for the hypothesis that the satisfaction of members' interpersonal needs (or compatibility) is related to both group members' perceptions

of the interactions that occur in the group and the actual behaviors in which the group engages. It would appear that the satisfaction of the interpersonal behavioral needs is a powerful indicator of some significant group interactions and group members' perceptions of those interactions. The present experimental study is an attempt to investigate the relationships that have been found in the previous research as well as to extend the knowledge about the effects of the satisfaction of group members' interpersonal needs into new and relevant areas of concern that may provide fruitful knowledge of such effects in the small group setting.

#### Research Hypotheses and Relevant Research

The initial conceptual scheme of the study called for an experimental design that would be capable of demonstrating the effects that the satisfaction of interpersonal behavioral needs identified above had on the group members' perceptions of the group as well as the effects on both the level of group cohesiveness and group productivity. However, the concept of group cohesiveness has remained a clouded issue in most of the theoretical and empirical research to date. One of the problems that is encountered in the literature is an appropriate operational definition of the construct. There was a need in this study to relate the satisfaction of interpersonal behavioral needs to a specific form of group behavior and members' perceptions that would have a strong relationship to group cohesiveness. Perhaps the best variables that would appear to accomplish this purpose is that of "interpersonal

trust", and this was used as a measure of the effects of the satisfaction of the interpersonal behavioral needs. In order to understand the usefulness of this construct, it is necessary to explain what is meant by the concept of interpersonal trust in terms of an operational definition, to understand the relationships between interpersonal trust and group cohesiveness and productivity, and to incorporate the use of this construct into the research hypotheses.

The word "trust" is used in a wide range of contexts. We speak about "trusting" many different kinds of things, but getting a concrete handle on the term appears to be very difficult. After numerous research efforts into this area, Giffin (1968a) concludes that there appear to be three primary considerations involved in interpersonal trust: expertness, intent, and reliability. Giffin (1968b) states that, "Expertness is concerned with the speaker's perceived intellect or ability; intent with the speaker's goodwill toward the listener, and reliability with the speaker's perceived ability to actually carry out the act" (p. 4). In later research, Giffin has changed the names of these factors to be expressed as: expertness, dynamism, and character. The first factor is analagous to both the intent, or goodwill, of the trusted person and the reliability of the trusted person. The second factor, dynamism, is concerned with the degree of activeness or passiveness which the trusted person displays. There appears to be a firm conceptual basis for defining the construct of interpersonal trust as the result of the three factors discussed above and empirical research, although limited, does tend to verify these three dimensions.

The development of the Giffin Trust Differential (see Appendix E) has allowed the concept of interpersonal trust to be operationalized effectively and thus allows the construct to be used as a measure of the nature of members' perceptions of the interpersonal trust that exists with a particular group.

The formation of interpersonal trust appears to be intricately related to the satisfaction of an individual's needs. Golembiewski and McConkie (1975) argue that trust is critical in personal growth and development and that it implies the satisfaction of an individual's needs. Giffin and Barnes (1976) suggest that "trust refers to the reliance upon the communication of the other fitting the previously held anticipation of effects" (p. 8). In analyzing McGregor's (1960) two theories of management, Blake and Mouton (1975) suggest that the development of trust is essentially based on the assumption that rewards have been obtained by individuals which satisfy their ego and social needs. Throughout the available literature, the expectation about the outcomes is related to the development of trust, such that the more compatible the outcome is with the initial expectation, the higher the evaluation of the trusted person or group. It would appear that the satisfaction of members' interpersonal behavioral needs and the formation of individual perception of trust are intricately related. The present study is an attempt to link these two variables and to observe the effects of such a procedure.

There has never been a systematic attempt to link the factors of the interpersonal behavioral needs (inclusion,

control, and affection) with those factors of interpersonal trust (expertness, dynamism, and character) that have been discussed above. The following hypotheses represent such an attempt:

1. There will be a positive relationship between the satisfaction of an individual group member's inclusion need and the individual's trust in the dynamism of the group.
2. There will be a positive relationship between the satisfaction of an individual group member's control need and the individual's trust in the expertness of the group.
3. There will be a positive relationship between the satisfaction of an individual group member's affection need and the individual's trust in the character of the group.

Giffin and Barnes (1976) have stated that a "person needs others in order to be himself" (p. 34) and it would seem reasonable to infer from this that a person needs others in order to satisfy himself and his needs. There are some theoretical arguments to suggest the possible effects of trust on particular personal needs, and these arguments provide the basis for the formation of the research hypotheses above. In terms of the satisfaction of the inclusion need, it has been observed that trust is crucial for satisfaction of the "interpersonal imperative", or the need for validation, which is achieved through being included by others and by forming reciprocal, inclusive relationships. These responses to the need for validation come in the form of feedback and are often called "strokes" by Transactional Analysts (Berne, 1964, 1972; and Harris, 1967). Berne (1964) states that "'stroking' may be

employed colloquially to denote any act implying recognition of another's presense" (p. 15). Research in small group communication has suggested that groups which are involved in improving interpersonal relationships (such as T-groups) and have developed a climate of trust have beneficial effects on persons who are afraid to interact with others (Giffin and Barnes, 1976). Through the development of what Gibb (1961) labels a "supportive climate", Carl Rogers (1961) has suggested that this atmosphere provides "psychological safety" for its members, thus allowing them to interact with others. Gibb (1964) identifies acceptance as the primary concern of people within groups that are in the process of formation, and points out that it is a need that is satisfied only when people exercise trust. Zand (1972) concurs and writes that, "trust facilitates interpersonal acceptance" (p. 229). Gibb (1964) further states that "The acceptance concern has to do with the formation of trust and acceptance of self and others, the reduction of fear of self and of others, and the consequent growth of confidence. This concern becomes differentiated into concern about degree of membership in the various groups of which the person is a part" (p. 280). It would appear then that the need to be included by others, and particularly in the small group setting because of the emphasis on interpersonal relationships and interdependencies, is positively correlated with trust, such that the greater the satisfaction of an individual's inclusion need, the greater his/her trust in the group.

It would appear that the need to be included is the first essential problem faced by group members and Gibb (1964) states that acceptance is the first "primary modal concern" and that the "derivative modal concern", stemming from the need for acceptance, is the need for membership in the group. Schutz (1966) has stated in his "Postulate of Group Development" that groups progress through the same sequence of developmental stages starting with a concern for inclusion, moving to a concern for control, and finally progressing to a concern for affection. If this is the case, we would expect the rate and the degree of satisfaction of this acceptance, or inclusion, need to be positively correlated with the degree of trust. Therefore, since the factor of dynamism is concerned with the activeness versus passiveness of a group, it would appear that this would correspond with the rate of development of the satisfaction of the inclusion need, and hence we would expect them to be positively correlated. Thus the hypothesis has been advanced that the satisfaction of an individual group member's inclusion need will be positively correlated with his/her trust in the group's dynamism.

Control behavior refers to the decision-making process between people. The need for control manifests itself as the desire for power, authority, and control over others. At the other end is the need to be controlled, to have responsibility taken away. In terms of the general relationship between interpersonal trust and control behaviors, Giffin (1967) suggests that the following variables tend to increase as

trust increases: acceptance of influence of others, acceptance of motives of others, and seeking control over the process rather than over the people involved. In respect to small group research, Gibb (1964) identifies a primary modal concern of control which is involved with efficient decision-making abilities, productivity levels, and overall organization of the group. He states that the resolution of these issues will allow for creative work, interdependence, and role distributions which are conducive to group productivity. Mills (1967) has suggested that members of the group are generally concerned with control issues in terms of the development of a normative system and power structures within the group, and that the successful resolution of this stage allows the group to progress to the stage of collective goal pursuit. Thus control appears to be intricately related to the decision-making abilities of the group, and as such, the satisfaction of the control need would be expected to be positively correlated with overall trust in the group, and specifically with perceptions of the group's ability to handle and solve problems involved in group task accomplishment.

In their discussion of the interpersonal trust dimension of expertness, Giffin and Barnes (1976) list knowledge, intelligence, experience, education, training, being informed and logical, and excellence in judgments, as criteria contributing to this factor. It would appear that the trust in the expertness dimension of a group is essentially concerned with the ability of the group to meet and solve its problems. As such, control is the essential function of the group's ability to

meet its task accomplishment problems, because of its inherent relationship to decision-making abilities. A positive relationship would therefore be expected between the successful resolution of the control issues and the members' evaluation of the level of trust in the group's expertness dimension. In this respect, the hypothesis is advanced that there should be a positive correlation between the satisfaction of the interpersonal behavioral need of control and the individual group member's trust in the expertness of the group.

In general, affection behavior refers to close personal emotional feelings between people. Schutz (1966) maintains that affection is a dyadic relation, it can occur between pairs of people at any one time. Nevertheless, it would appear that we have general feelings about the kinds of affections, at least in terms of the relative degree of closeness or distance, that we would like to receive from a group of people, even though we may primarily want that affection from a particular person in the group. Horney (1945) has suggested that each person has a need for moving toward others which ranges from mild attraction to love, and which includes relative degrees of closeness or distance, or relative degrees of affectionate behaviors. Thus, although affection may be primarily a concern between members of a dyad, there can be little doubt that we have general feelings about the degree of affection that we would want to give and receive from a group of people, and Schutz's (1966) instrument - the FIRO-B - is capable of measuring exactly that. There is surely a difference in the type of affection that we expect to give and receive in a

T-group, on a football team, and as a member of an organizational task force, and the instrument is a generalized form of the need for affection.

In terms of the relationship between affection and trust, Giffin (1967) has stated that increases in trust is positively correlated with increases in positive affect, or liking for an individual or a group of people. It would also be expected that there are differences in the particular needs that individuals have concerning their need for affection and that the successful satisfaction of those needs, whatever they may be, will be positively correlated with increased trust in the person or group. Because of the relationship between affection behaviors and emotional feelings, affection plays an important role in terms of the desire on the part of an individual for consistent behavior, that is, there is a tendency within people to want their affectionate relationships to be relatively stable. This is due to the fact that affection behaviors require a great deal of investment on the part of the individual in terms of giving emotional feedback to others and receiving such feedback from others, the result being that the individual seeks consistent affection behaviors once he/she has formed an impression of what they expect to give and receive in a relationship. The factor of character in the interpersonal trust scale is concerned with dependability, predictability, or favorable intents of the trusted person (Giffin and Barnes, 1976) and appears to be related to the overall judgment of consistency within the other person being judged. This would seem to be positively correlated with the satisfaction of the

interpersonal need of affection, such that the greater the satisfaction, the greater the trust in the character of the group. Because of this proposed relationship between the factor of character and the notion of consistency, or dependability, it is expected that there will be a positive correlation between the satisfaction of an individual group member's affection need and trust in the character of the group.

Interpersonal trust is primarily a perceptual event, in that we measure and conceive of interpersonal trust as not what is actually there but what is perceived to be there. Thus interpersonal trust is a perception made by an individual toward another individual or group of people, which may or may not be based on actual reality. This would lead us to believe that there may be a relationship between interpersonal trust and other perceptions of an individual or group of people. Given that we have our interpersonal needs satisfied and that we have formed a perception of the degree of our interpersonal trust of a group of people, what other perceptions might be positively correlated with these two features? The following hypotheses are attempts to delineate possible relationships from such a perspective

4. There will be a positive relationship between the satisfaction of an individual group member's interpersonal needs and the individual's evaluation of the group's problem-solving abilities.
  - 4A. There will be a positive relationship between the satisfaction of an individual group member's control need and the individual's evaluation of the group's problem-solving abilities.

These hypotheses suggest a relationship between the satisfaction of the interpersonal behavioral needs, the formation of interpersonal trust, and the evaluation of the group's problem-solving abilities. The satisfaction of interpersonal needs is positively correlated with the overall trust in the group, as outlined in the previous pages, which is also proposed to be positively correlated with an individual's perceptions of the problem-solving abilities of the group. A relationship between the successful satisfaction of interpersonal needs in general and the evaluation of the problem-solving abilities of the group is expected because of the positive relationship between interpersonal relationships in groups and successful group accomplishment. The satisfaction of the interpersonal need for control would also be expected to be positively correlated with the evaluation of the problem-solving abilities of the group, such that the greater the satisfaction of the individual's need for control, the greater the evaluation of the group's problem-solving abilities by that individual. Since the control need is related to the decision-making abilities of the group, and because of the proposed relationship between the satisfaction of the control need and trust in the expertness dimension of the group, we would expect there to be a positive relationship between the two variables above.

There is also to be expected relationships between the satisfaction of the interpersonal needs, the formation of interpersonal trust in the group, the cohesiveness of the group, and the level of group productivity. The inclusion of the

perception of the group's problem-solving abilities from a group perspective, via the summation of individual member's scores, allows the contrast to be made between perceptions of problem-solving abilities and actual problem-solving abilities as measured through some form of actual task that the group must accomplish. The following hypothesis is advanced to reflect the proposed relationship between the satisfaction of interpersonal needs and group productivity:

5. There will be a positive relationship between the satisfaction of group members' interpersonal needs and the level of group productivity.

The relationship proposed in the above hypothesis attests to the belief that the satisfaction of group members' interpersonal needs is positively correlated with the formation of interpersonal trust between the members of the group, which aids the group's level of productivity because of the relationship between interpersonal trust and group cohesiveness. The relationship between group cohesiveness and group productivity has already been explored and if interpersonal trust can be linked with group cohesiveness, a useful bridge may have been formed for testing the basic postulates advanced by Schutz.

Golembiewski and McConkie (1975) begin their article on trust by stating that, "perhaps there is no single variable which so thoroughly influences interpersonal and group behavior as does trust ..." (p. 31). Gibb (1964) is convinced that the movement from fear to trust is the critical process in human growth. Briefly, Gibb (1964) argues that increases in trust lead to more timely feedback, more effective communication,

and constructive action. To adequately understand the effects of trust on the cohesiveness of the group, the relationship between interpersonal trust and cooperation must be analyzed. Thus Deutsch (1962) has argued that trust is the central prerequisite of cooperation, and numerous research efforts (Deutsch, 1960; Tedeschi, Hiester, and Gahagan, 1969; and Boyle and Bonachich, 1970) provide support for a positive relationship between trust and cooperation. Thus there appears to be sufficient linkages between a highly trusting group atmosphere and highly cohesive groups.

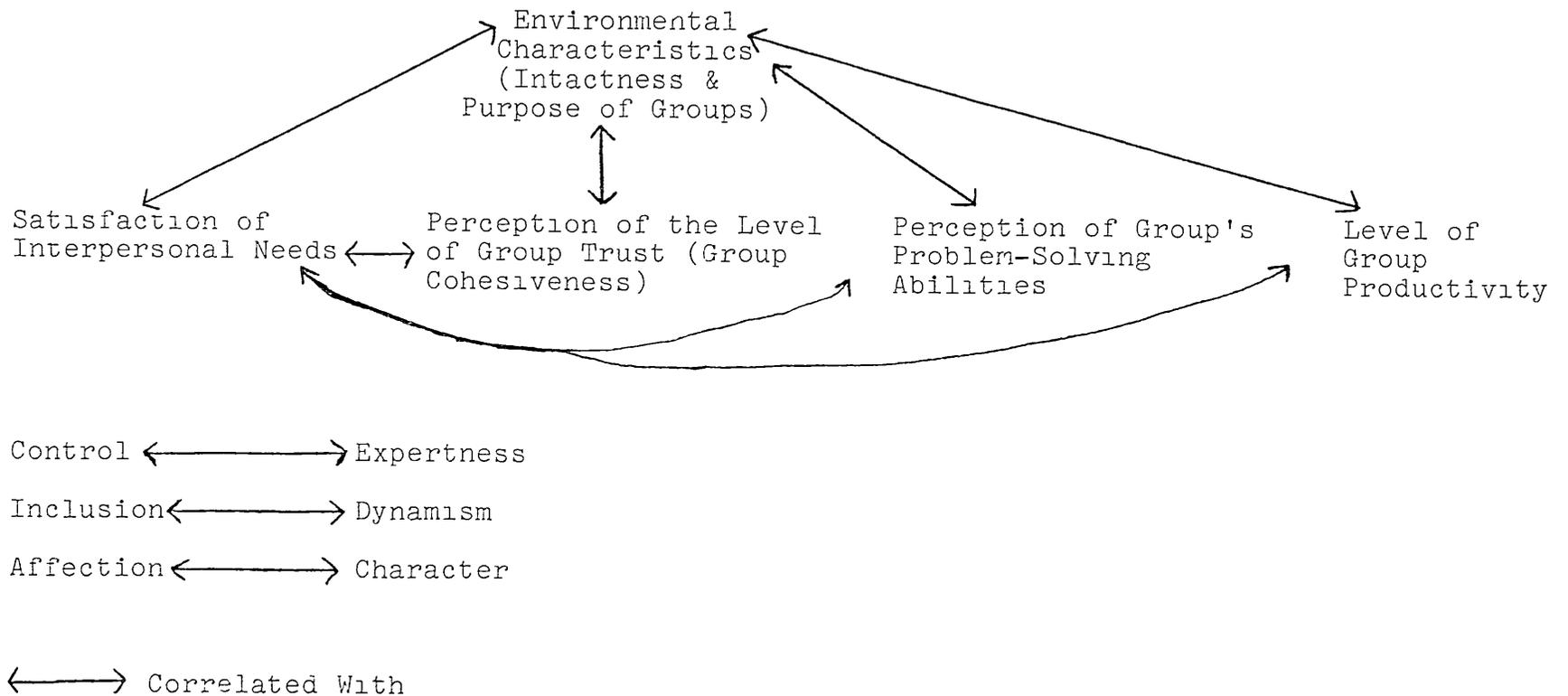
The relationship between group cohesiveness and group productivity has been explored in this paper, but there also appears to be sufficient justification for a positive relationship between group trust and group productivity. Zand (1972) noted that in low-trust groups, "interpersonal relationships interfere with and distort perceptions of the problem. Energy and creativity are diverted from finding comprehensive realistic solutions ..." (p. 238). Among the results obtained with high-trust groups the following features were observed to be related to enhanced problem-solving: more open exchange of relevant ideas and feelings, greater clarification of goals and problems, more extensive search for alternative courses of action, sharing influence more broadly among all participants, greater motivation to implement decisions, and greater feelings of interpersonal closeness, or team cohesiveness when group are involved (Golembiewski and McConkie, 1975). Thus there appears to be ample evidence to support the positive relationship between high levels of group trust and high levels of group

productivity. The hypothesis has thus been advanced that there is to be expected a positive correlation between the satisfaction of group members' needs and the level of group productivity.

The design of the hypotheses and their relative correlations between variables is presented in figure 1. It is noted that the environmental characteristics, or the specific situational characteristics of the group, influence the four major variables that have been identified. A pilot study suggested that the attendance of the members of a group, as well as the relative degree of attendance of the group itself, in terms of whether or not the members, or all the members, had been present for all sessions, was an important variable and had some important consequences for the dependent measures. Since the experimental study took place within the confines of a classroom environment, the groups had different orientations, or purposes, and this became a relevant factor in the study. These factors will be outlined below and the hypotheses corresponding to each factor will be explicated.

A full attending member was defined as a member who had attended all of the sessions, and intact groups were defined as those groups in which all members had been present for all sessions. Likewise, a partial attending member was defined as an individual who had missed at least one group session, and a non-intact group was defined as one in which at least one member had missed at least one group session. The following hypotheses were advanced for this independent variable.

FIGURE 1: Basic Design of the Hypotheses



6. Full attending members of intact groups should show significantly greater satisfaction of interpersonal needs in all areas than full attending members of non-intact groups.
7. There will be a positive relationship between (a) member attendance and interpersonal trust, and (b) group intactness and interpersonal trust.
8. There will be a positive relationship between (a) member attendance and evaluation of group's problem-solving abilities, and (b) group intactness and evaluation of group's problem-solving abilities.
9. There will be a positive relationship between group intactness and group productivity.

The majority of the research supporting these hypotheses comes from the industrial setting in which absenteeism from the job is correlated with job satisfaction. Numerous researchers (Katz and Kahn, 1966; Vroom, 1964; Weitz and Nichols, 1953; Giese and Ruter, 1949; and Fleishman, Harris, and Burtt, 1955) have found positive correlations between satisfaction and reduced absenteeism. The logical extension of these findings to the area of interpersonal need-satisfaction is that full attending members of intact groups should show significantly greater satisfaction of their interpersonal needs than full attending members of non-intact groups. This is believed to be the case because the high absentee rate in non-intact groups will affect the amount of satisfaction that can be obtained even for full attending members of those groups.

If the above relationship is true, then it follows that there should be a positive relationship between member

attendance and group intactness with trust in the group. If we assume that the satisfaction of needs is positively related with trust in the group, then the effects of attendance becomes obvious and the relationship between attendance and trust in the group becomes a positive one. Katz and Kahn (1966) have suggested that the formation of group cohesiveness leads to decreased turnover and absence rates. Given this perspective, we would expect a positive relationship between attendance and trust in the group, from both an individual and a group perspective.

The other hypotheses are concerned with the effects of attendance upon the perceptions of the group's problem-solving abilities and the actual level of group productivity. Many researchers (Katz and Kahn, 1966; Lickert, 1967) have found that group effectiveness and high productivity are positively correlated with low absence and turnover rates. It is hypothesized that member attendance and group intactness should be positively correlated with the evaluation of the group's problem-solving abilities. It is true that attendance is positively correlated with level of trust in a group, and if trust in the group is positively correlated with the evaluation of the group's problem-solving abilities, then it makes sense that member attendance and group intactness should be positively correlated with the evaluation of the problem-solving behavior. In addition, the hypothesis has been advanced that member attendance and group intactness will be positively correlated with actual group productivity, allowing the comparison between percep-

tions of an actual group productivity based on this independent variable.

The variable of group purpose, or group orientation, became a relevant variable because of the demand characteristics of the classroom environment. The use of five group orientations were involved: (1) Experimental groups; (2) Long-term work groups; (3) Short-term work groups; (4) Learning groups; and (5) T-groups. The hypotheses that were advanced were done so only for intact groups to limit the number of hypotheses to be tested. The following hypotheses were advanced:

10. Learning groups and T-groups should show a significantly greater satisfaction of the inclusion need than all other groups.
11. Long-term work groups and Short-term work groups should show a significantly greater satisfaction of the control need than all other groups.
12. T-groups should show a significantly greater satisfaction of the affection need than all other groups.
13. Long-term work groups and Short-term work groups should show a significantly greater trust in the expertness of the group than all other groups.
14. T-groups, Long-term work groups, and Short-term work groups should show a significantly greater trust in the dynamism of the group than all other groups.
15. T-groups should show a significantly greater trust in the character of the group than all other groups.
16. Long-term work groups and Short-term work groups should show a significantly greater evaluation of the group's problem-solving abilities than all other groups.

17. Long-term work groups and short-term work groups should show significantly greater levels of group productivity than all other groups.

In terms of the satisfaction of interpersonal behavioral needs, it would appear that given the relative ambiguity of the T-groups and the Learning groups, the latter having as their purpose the formation of either a work group or a social group or both, inclusion would be of primary importance. Before the ambiguity of the groups can be resolved in terms of the adequate development of group goals, it is first necessary to fulfill the individual group members' need for inclusion. It would also be expected that the ambiguity of the situation would demand that the groups resolve their need for inclusion, and hence the hypothesis above has been advanced accordingly. With the emphasis of the work groups on the decision-making process, it would be expected that the satisfaction of their members' control need would be significantly greater than any of the other groups. Given the nature of T-groups, researchers have noted a high degree of affection being exchanged among members, and thus it is posited that T-groups will have their members' affection need met significantly more than any of the other groups.

In terms of the dimensions of trust, we can observe some relationships between the satisfaction of interpersonal needs and the type of group trust as mediated by the purposes of the group. In terms of the dimension of expertness, we would expect that the Long-term and the Short-term work groups to have a greater trust in this dimension. It would also be expected that they would have a greater trust in the

dynamism of the group, since given that the groups have a problem to solve, it would be expected that the groups would progress along this line, and hence exhibit a higher trust in the dynamism of the group than the other groups. In terms of character, the T-groups are concerned with the establishment and maintenance of relationships based primarily upon the exchange of affectionate behaviors, and it would be expected that these groups would show a significantly greater trust in the character of the group than all other groups. Thus with the exception of two types of groups (the Learning groups' relationship with the inclusion need and the work groups' relationship with trust in the dynamism of their group) we observe that the groups which are hypothesized to have their inclusion need met significantly more than other groups are also the ones hypothesized to have a greater level of trust in the dynamism of the group, the groups which are thought to have their control need met significantly more than other groups are also thought to have a greater level of trust in the expertness of the group; and the groups which are believed to have their affection need met significantly more than other groups are the ones hypothesized to have a greater level of trust in the character of the group. Thus the study lends some interesting information to the proposed relationships between the satisfaction of interpersonal needs and the factors of interpersonal trust as mediated by the orientation of the group.

In terms of problem-solving behaviors, it is expected that with the emphasis of the Long-term and the Short-term work groups on decision-making processes, that these groups

would show significantly greater evaluation of their groups' problem-solving abilities and greater levels of group productivity. This is based directly on the type of orientation that they possess, the nature of problem-solving, and therefore these groups are seen to be significantly higher on these two dependent variables than all other groups.

#### Review of Subsequent Chapters

Chapter 1 has outlined the basic assumptions, previous literature, and the present study's hypotheses. The hypotheses, the relevant variables, and the research literature have been given detailed consideration in this section so as to provide the reader with an understanding of this experimental study. Chapter 2 will outline the procedures and the methodology that was used in the experimental design of the study. Chapter 3 will present the statistical results that correspond to the hypotheses that have been advanced in this study, and Chapter 4 will attempt to interpret and discuss the statistical results in terms of their implications for the hypothesized relationships.

CHAPTER TWO  
PROCEDURES AND METHODOLOGY

Introduction

The design of the experiment called for specific procedures which were capable of investigating the relationship between the satisfaction of individual's interpersonal needs and their perceptions of group characteristics and processes. A pilot study had been conducted in the summer of 1975 to determine the feasibility of the basic assumptions of this project as well as to refine the actual design of the experiment. It was found in the pilot study that those subjects whose needs had been satisfied (determined through the correlation of pre-post measurements) were generally more satisfied with the progress of the group, as measured by a five-point scale of satisfaction developed by this researcher. In subsequent post-hoc analyses of the pilot study, through the use of informal interviews, it was found that those members who had attended all of the group sessions seemed to be better satisfied with the progress of the group than those members who had missed at least one session. Thus, member attendance and group intactness became important research variables and a full attending member and an intact group were operationally defined as those members or groups in which attendance has been evidenced at all of the sessions. On the basis of further suggestions from colleagues as well as the nature of the subject pool, it was decided that the

inclusion of group orientations as an independent variable might shed some light on the relationship between predetermined group goals and analysis of group interactions. In the current study, this was linked with group intactness in order to observe the interaction effects upon: (1) the perceptions of individual group members summated, and (2) the actual group behaviors, as measured through some form of productivity measure. Thus, through the findings of the pilot study, the investigation of the individuals' perceptions of the group focused on two important characteristics of members' interactions with the group: (1) the effects of the satisfaction of interpersonal behavioral needs on the dependent variables, and (2) the effects of member attendance on the dependent variables.

#### Selection of Subjects

One of the purposes of this study was to investigate the development of the satisfaction of group member's interpersonal behavioral needs in a "natural" group, defined operationally through the selection of subjects from classes that participated in some form of group behavior as part of the course. Table 1 presents the characteristics of the subject pool that were used in this study. In all, five instructors were selected and three different types of classes were involved. Four of the instructors taught a basic speech course designed for freshmen and sophomores, while the fifth instructor taught an advanced undergraduate course on group dynamics. Instructor A taught Speech 130:

Fundamentals of Speech - Speaker-Audience Communication; Instructor B, C and D taught Speech 140: Fundamentals of Speech - Interpersonal Communication; and Instructor E taught Speech 540: Human Relations in Group Interaction I. Table 1 presents the number of subjects participating in each class, the number of classes, and the number of "casualties". A "casualty" was defined as an individual who was deleted from the experiment due to a particular problem (i.e. illness, disenrollment, etc.). Thus the study eventually consisted of five instructors, eleven classes, two hundred and sixteen subjects and twenty-six casualties.

#### Instruments Employed in the Study

The instruments employed in the study are summarized in Table II. A more detailed explanation of each follows:

#### Schutz's Fundamental Interpersonal Relations Orientation - Behavior (FIRO-B) - Revised Form (Frey)

Schutz's Fundamental Interpersonal Relations Orientation measure (see Appendix A) expresses the basic notion that every individual orients himself/herself in characteristic ways toward other individuals and that knowledge of these orientations allow for considerable understanding of individual behavior and interaction of people. Schutz (1960) has stated that:

The primary purposes for developing FIRO-B are (1) to construct a measure of how an individual acts in interpersonal situations, and (2) to construct a measure that will lead to prediction of interaction between people, based on data from the measuring instrument alone. In this second regard, FIRO-B is somewhat unique among personality tests. It is designed not only to

TABLE I. Nature of Subject Pool

<u>Instructor</u>	<u>Nature of Class</u>	<u>Number of Classes</u>	<u>Number of Subjects</u>	<u>Number of Casualties</u>
A	Speech 130	2	26	6
B	Speech 140	2	51	3
C	Speech 140	3	65	7
D	Speech 140	2	48	5
E	Speech 540	2	26	5
TOTALS		11	216	26

TABLE II: Instruments Employed in Study

- I. Individual Data Measurements
  - A. Schutz's (1960) Fundamental Interpersonal Relations Orientation - Behavior (FIRO-B) - Revised Form (Frey)
  - B. Giffin's (1968) Trust Differential (GTD - From E)
  - C. Giffin and Patton's (1973) Evaluation of Problem-Solving Behavior Form (PSB)
  - D. Member Attendance
- II. Group Data Measurements
  - A. Group Intactness
  - B. Group Intactness X Group Orientation
  - C. Group Productivity Measure - NASA - National Aeronautics & Space Administration Form

measure individual characteristics but to measure specifically characteristics that may be combined in particular ways... to predict relations between people (p. 58).

This measure yields six scores. expressed inclusion behavior ( $e^I$ ); wanted inclusion behavior ( $w^I$ ); expressed control behavior ( $e^C$ ); wanted control behavior ( $w^C$ ), expressed affection behavior ( $e^A$ ); and wanted affection behavior ( $w^A$ ). The test includes nine items for the measurement of each of these six variables. The items are scored according to the Guttman method of cumulative scale analysis. In the technique of Guttman scale analysis, scales comprised of items regularly decreasing in popularity are constructed and individuals will thus accept items sequentially to a given point and then reject the remainder. Items for each variable are scattered throughout the questionnaire and the sorting for each variable is done through the use of a code sheet (see Appendix D). Schutz (1960) has stated that the nine-item scale has the virtues of:

(a) providing sufficient length for acceptable reliability (stability) of the scale, (b) providing sufficient categories for dividing respondents into as many classes as desired, (c) keeping the questionnaire reasonably short (fifty-four items) and brief, (d) keeping scoring uniform among scales and in single digits for computational ease (p. 60).

The Fundamental Interpersonal Relations Orientation measure (FIRO-B) is thus an important and useful instrument for the measurement of the basic level of need a satisfaction for individuals in the major dimensions of interpersonal behavior defined by the theory of the instrument.

Schutz (1960) has described methods whereby it is possible to ascertain the individual's needs within particular social situations and this is operationally defined through the substitution of specific words in the questions that the instrument uses. In this study, the pretest (see Appendix B) was comprised of items that were oriented toward the perception of the future behavior that the individual group member wished to express and receive from his/her particular group. The items were transformed from their original nature through the use of substituting verbs with future tenses ("I will try", "I will let", etc.) for the present tense verbs used in the instrument designed by Schutz (1960). The posttest (see Appendix C) consisted of items that were oriented toward the perception of the behaviors that had occurred as a result of interactions within the group. The items were transformed through the substitution of past tense verbs ("I have tried", "I have let", etc.) for the present tense verbs of the FIRO-B instrument. The method of scoring the revised instruments was the same as that used to score the original FIRO-B instrument, as explicated by Schutz (1960). Thus the revised forms were used as a measure of the initial perceptions of future behavior within the group and as a measure of the perceived behaviors that had occurred as a result of the interactions within the group.

Giffin's (1968) Trust Differential (GTD - Form E)

The Giffin Trust Differential (see Appendix E) and the scoring key for the instrument (see Appendix F) were developed

to measure the three salient areas of interpersonal trust that have been researched and developed by Giffin (1968): expertness, dynamism, and character. The instrument is a twenty-seven item semantic differential test, constructed of seven-point bi-polar rating scales. Each of the dimensions of the measure of interpersonal trust are composed of nine items that purport to measure individuals' perceptions of other individuals or groups of people, and the instructions for the completion of the questionnaire and the scoring of it remain constant regardless of the attitudinal object in question. The instrument was thus an ideal one for use in the present experimental study because: (a) it is a reliable measure of the three salient areas of interpersonal trust, (b) it is applicable to the study of individual's perceptions of a group, and (c) it provides a relatively efficient and uniform measure of orientations toward interpersonal trust.

Giffin and Patton's (1973) Evaluation of Problem-Solving Behavior Form (PSB)

The problem-solving behavior form developed by Giffin and Patton (1973) is an instrument which emphasizes the self-perceived evaluation of the ability of a group to solve the problems, the tasks, with which it is faced. The instrument (see Appendix G) is a sixteen item measure constructed of five-point bi-polar rating scales that are additive by nature and produces an overall score of an individual's perceptions of his/her group's problem-solving abilities. The instrument was important for the purposes of this study for two reasons:

(a) it provides a measure of important task and interpersonal variables that contribute to a group's problem-solving abilities, and (b) it is a self-perception instrument which, when contrasted with an actual measure of group problem-solving ability, may show the relationship between an individual's perception of a group's problem-solving abilities and the group's actual problem-solving behaviors.

#### Member Attendance and Group Intactness

The pilot study has shown that one of the problems with the design of the experiment was the tendency for there to be a lack of full information (a lack of full responses on all of the measurement instruments) for some individuals because of their absenteeism from the group on the days that the pre and/or post measurements were administered. This lack of full information made it impossible to correlate the pre and post measures of the revised FIRO-B forms and thus threatened the analysis of the results of this experiment. To compensate for this tendency, it was decided that there needed to be some method whereby individuals could be measured with respect to whether or not they had attended all of the sessions. Full attending members were operationally defined as those members who had been at all of the group sessions, and partial attending members were defined as those individuals who had missed one or more of the group sessions. Consequently, intact groups were defined as those groups in which all members had attended all group sessions, and non-intact groups were defined as one in which at least one member had missed at least one session. Instructor E's groups, Speech 540 groups,

were not included in the analyses of the intact versus non-intact variables because of the nature of these particular groups, specifically the size of the groups were too large (20). This procedure proved to provide an appropriate means of handling the problems identified in the pilot study, all one hundred and ninety subjects were able to complete all of the measurement instruments. The breakdown for full versus partial attending subjects was one hundred and fifty-nine to thirty-one, respectively; intact versus non-intact groups was thirteen to twenty-six, respectively.

#### Group Intactness X Group Orientation

The groups were initially broken into five different kinds of group orientations and were defined and differentiated with respect to their purpose for formation. Each instructor chose the kind of group orientation that their particular classes would use based on the purposes of the classroom situation and the instructor's individual needs. There were five group orientations under five different instructors, each with its own purpose and group goals. The relevant characteristics for these five group orientations are presented in Table III and the nature of the group orientations are explicated below.

Instructor A - Experimental Group Orientation. Instructor A informed the group members that they were to be part of an experiment that was designed to discover the differences between group orientations and that they would serve in some way as control groups to be matched against other orientations. These groups were allowed to meet and discuss any items that

TABLE III: Group Orientation Characteristics

<u>Instructor</u>	<u>Group Orientation</u>	<u>Total Number of Groups</u>	<u>Number-Size of Non-Intact Groups</u>	<u>Number-Size of Intact Groups</u>
A	Experimental	6	2 - 3	2 - 5
B	Long-Term Work	10	3 - 4 3 - 6	3 - 5 1 - 6
C	Short-Term Work	13	4 - 4 3 - 5 4 - 6	2 - 5
D	Learning	10	4 - 4 2 - 5 1 - 6	2 - 5 1 - 6
E	T-group	2		

were deemed important by the group with no directions given by the instructor.

Instructor B - Long-Term Work Group Orientation. These groups were formed with their purpose being a presentation of a group project at the end of the semester, and that the grade that each group received would be applied to each individual member of the group, thus making their members interdependent. The members of these groups were oriented toward accomplishing a task through problem-solving processes, the groups were small in size (usually 5-6 members each), and had some form of psychological membership with interdependent role and norms, the four attributes Cole (1970) and Williams (1970) maintain characterizes a task group.

Instructor C - Short-Term Work Group Orientation. These groups were formed for the purpose of being study groups which would meet together for three weeks to prepare for an examination that was part of the basic speech course. There was no type of group project formally assigned, but the emphasis was placed upon utilizing the time together to study for the examination through the differentiation of roles and work loads, so that members could exchange useful information with one another.

Instructor D - Learning Group Orientation. These groups were allowed to decide for themselves the particular direction, or orientation, that they would have, and were labelled "learning groups" by the instructor because of the need for the groups themselves to reach a decision on what would be their goals. In this regard, the groups had the opportunity

of deciding whether to be a work group, a social group, or some combination of the two.

Instructor E - T-group Orientation. The members of these groups were instructed that they were part of a group designed to discover how they relate to other human beings, for the purpose of changing their behavior, if so desired, to fit their own perception of ideal personal behavior. Egan (1973) states that the T-group orientation is "a particular kind of laboratory training and learning in which the personal and interpersonal issues are the direct focus of the group" (p. 10). Thus these groups were given initial instructions as to the nature of the groups and were then allowed to develop their own procedures for the successful attainment of the group goals.

The five groups exhibited large degrees of differences in their purposes, or orientations, while remaining fairly consistent with respect to size and experimental manipulations. The variable of "Group Intactness" was linked with the variable of "Group Orientation" for two specific reasons: (1) as a method of analyzing and describing the groups for classification purposes, and (2) for the purpose of allowing the testing of the hypotheses that had been formulated for this particular study. The hypotheses corresponding to the group orientations were outlined only for intact groups because of the relative number of hypotheses that were allowed to be formulated and that were testable. Therefore it became important to look at the interaction effects between the variable "Group Intactness" and the variable "Group Orientation" on the dependent measures.

Group Productivity Measure: NASA - National Aeronautics &  
Space Administration Form

The National Aeronautics & Space Administration exercise - NASA - (See Appendix H) is designed to allow for the investigation of the ability of a group to solve a particular problem within a given time period through a structured group activity. The exercise is a fifteen item instrument which must be rank-ordered by the group into mutually exclusive categories in terms of the relative importance of each item on the instrument and the group must reach a consensus through the acceptance by all members of the group on the rank-orderings. Voting behavior or extreme forms of leadership behavior are not allowed, as each and every member of the group must agree on the proper rank-orderings of the items on the instrument. The National Aeronautics & Space Administration has developed a scoring key (see Appendix I) that includes the rationale for each of the rank-ordered items, and thus represents an acceptable form of analyzing group productivity. The instrument is ideally suited for observing the interactions that are evidenced in the group's problem-solving procedures, and Pfeiffer and Jones (1969) have suggested that these types of rank-ordering tasks teaches effective consensus-seeking behaviors in task groups. To the extent that the achievement of a consensus within the group may be related to the cohesiveness of the group, this instrument appears to provide a sufficient measure of group productivity for the purposes of this study.

### Methodology of the Study

The design of the experimental study was a four-stage developmental sequence of group interactions and experimental manipulations, and the design of the experiment is presented in Figure II. The study was initiated during the end of the first week and the beginning of the second week of classes at the University of Kansas during the Spring Semester of 1976. The beginning of the semester was chosen as the most appropriate time in which to conduct the study because of the belief that students had not become familiar with the instructors' modes of teaching, and hence this would produce minimal effects concerned with instructor style. The stages of the experimental design are presented below.

First Session - In all classes, students were randomly assigned into five-member groups. Whenever this was not possible, six-member groups were formed. The rationale for this procedure is found in the difference between four-member and six-member groups. Shaw (1971) has suggested that four-person groups are more susceptible to the "assembly effect" and develop particular group interaction patterns that differ from larger groups. Indik (1965) has suggested that larger groups show the following characteristics, each of which might be expected to reduce member satisfaction. "(a) more difficulty in achieving adequate communication among members, (b) a higher degree of task specialization, (c) greater reliance upon impersonal forms of control, and (d) more severe problems of coordination that tend to be handled by inflexible rules and regulations" (p. 103, Cartwright and Zander, 1968).

FIGURE II: Experimental Design of Study

	<u>Formation of Experimental Groups</u>	<u>"Natural" Group Interaction</u>	<u>Group Interaction and Group Task</u>	<u>Measurements</u>
TIME	1	2	3	4
MEASUREMENTS	Revised FIRO-B (Frey) Pretest			Revised FIRO-B (Frey) Posttest  Evaluation of Problem-Solving Ability  Giffin Trust Differential  NASA Problem- Solving Task

Thus, although smaller groups tend to enable members to meet their own particular needs, the basis of this research study lay in discovering how members of groups cooperate together to meet their interpersonal behavioral needs as well as the demands of their task environment. Thus six-member groups were formed whenever five-member groups were not possible.

The groups were then allowed to meet on their own for thirty minutes to discuss the nature of their small groups and the interactions that would take place in subsequent group meetings. At the end of the allotted thirty minutes, the revised FIRO-B pretest was administered to all subjects. The groups and the classes were then dismissed.

Second Session - The second session allowed the groups to meet "naturally" for thirty minutes to discuss their own agendas. This allowed the groups to have additional time spent together to investigate the nature of their small groups. At the end of this time, the groups and classes were dismissed.

Third Session - The first half of this session was spent by the groups discussing their own agenda. The second half of the session consisted of all groups attempting to solve a task problem as a group. The problems ranged from a rank-ordering of a Racial Awareness exercise (Experimental groups), to discussing sample essay questions and deciding their relative strengths (Short-term work groups), to writing a report of the groups' activities up to this point discussing both strengths and weaknesses of the groups' interactions (Learning Groups) to engaging in a nonverbal group exercise

(Long-term work groups). The T-groups were the only groups which did not participate in this activity because the nature of the T-group experience is concerned with decision-making behavior at every session by the members and the instructor provides as little direction as possible. At the end of these group task interactions, the groups and the classes were dismissed.

Fourth Session - The fourth session consisted of administering the dependent measures to all subjects and allowing the groups to work on the NASA exercise. The revised FIRO-B posttest was administered first to all subjects, followed by the Giffin and Patton (1973) Evaluation of Problem-Solving Behavior Form, followed by the Giffin (1968) Trust Differential. The instructions for all group members asked them to orient their answers toward their specific groups. The NASA exercise was then administered to all groups and they were allotted twenty minutes for the completion of this task. All groups completed the task within this given time period and the times for completion of the exercise was recorded for all groups. The pilot study had found that some groups appeared to do better than others on this task because of their previous knowledge of the demand characteristics of the task itself. To compensate for this tendency, information cards were constructed which provided the members of the groups with information that was useful to the solution of the task and that was known by most people. These information cards (see Appendix J) were randomly given to each member of the groups and they were instructed not to

show these cards to any of the other group members. The members were also told that some members had received false information, although in reality each member had received accurate information. After members read the cards, they were collected by the researcher and the groups were allowed to proceed with the task. The reading of the cards was not included in the time allotted for the completion of the task by the groups. The rationale for this procedure of using information cards lay not only in the findings of the pilot study but also in the desire to produce a group situation that would demand the integration of useful information. To the extent that the groups were able to integrate and use the various information that was provided to them, they may be said to have developed interaction patterns that allow for the development of group cohesiveness. All groups followed this basic procedure for the fourth session with the exception of the T-groups.

Comments on the Experimental Design - A number of significant points must be discussed in reference to the fact that there were some minor differences in the actual methodology that was employed in this study. The factor of time, in terms of the length of classes and the length of the experiment, are important differences. All groups met for three days a week for forty-five minutes each, with the exception of nine of the Short-term work groups and the T-groups which met for three hours once a week. Although the time that the groups met differed, the timing of the experimental manipulations was held constant. Each of the

four stages of the experimental design, in terms of the time allotted, were held constant. All of the groups met in the classroom environment with the exception of the Learning groups which met outside of the classroom for the second meeting. This was to provide them with an opportunity to decide the nature of their group outside of the classroom environment.

The inclusion of the T-group in the experimental design represented an attempt to perceive the differences in the satisfaction of interpersonal needs, the evaluation of their problem-solving behavior, and their level of trust in the group when compared to other groups. There were no hypotheses included concerning the actual nature of productivity in these groups. The T-groups did not engage in the NASA task exercise and there was no means of comparing their productivity level with any of the other group orientations. Thus the T-groups did not serve as a variable on this particular dimension but instead were used as a comparison with the other dependent variables outlined above.

These differences between groups and conditions were of necessity because of the nature of working within the requirements of the university setting. Given the complexities involved in using groups from this environment, this experimental study appeared to adequately meet the particular demands of the situation and used them to the best advantage for conducting the experiment based on its original conception. Therefore, the design of this experiment seems to have been adequately efficient and sufficient for investigating the effects that were at the heart of this study.

### Data Treatment

The analysis of the data was broadly limited to those procedures encompassed by the Statistical Package for the Social Sciences (Nie, et al., 1975). Scores for individual members of the groups were transformed from the original data instruments to a forty-three column coding sheet, and then to a forty-three column computer card. The appropriate analyses were then done using those computer cards. The data was analyzed according to individual or group measurements and the following procedures were utilized.

Individual Data Treatment - The independent variables that were of concern in this study were fourfold: satisfaction of interpersonal needs, interpersonal trust, perceptions of problem-solving abilities of the groups, and member attendance. The satisfaction of the interpersonal needs was derived through an analysis of the absolute differences between the pretest and the posttest measures of the revised FIRO-B instruments. This was done for all six measures of the instrument, as well as three additional measures: total inclusion needs, total control needs, and total affection needs. These measures were the result of the combination of the expressed and the wanted dimensions of each need area on the pretest and the posttest and the absolute difference became the measure of the satisfaction of a total interpersonal need dimension. This combination of the expressed and the wanted dimensions of the instrument was done for the interpersonal behavioral needs of inclusion and affection. The total control dimension was expressed as the difference between

the expressed and wanted dimensions, and the latter was subtracted from the former and the absolute value was taken as a measure of total control. This procedure is in accordance with Schutz (1966) who has suggested that while expressed and wanted dimensions of the inclusion and affection needs are conducive to summation processes, the expressed and wanted dimensions of the control need are negatively correlated, and thus must be subtracted from one another. This procedure of using the absolute difference between the pretest and the posttest is possible because of the dimensions of compatibility discussed by Schutz (1966). There is no direct mention of a measure of actual self-perceived compatibility of behaviors that are met by a group or another individual by Schutz, and this is a unique contribution of this particular study - the development of a methodology capable of demonstrating compatibility in terms of the absolute difference between self-perceived future needs and self-perceived past behaviors. Schutz (1966) does refer to interchange compatibility which is concerned with the mutual expression of the "commodity" of a given need area. Schutz (1966) has stated that "with regard to the interchange axis, two individuals' scores should be similar for maximum compatibility, since interchange, like atmosphere, is something that must be mutually shared in order to satisfy the members of the dyad" (p. 111). He goes on to state in operational terms, that if an individual has a high need to receive inclusion behaviors, then another individual who expressed high inclusion behaviors toward

him should produce a compatible interaction partner. In this respect, compatibility on an intrapersonal level should be the result of what a person expects to express and receive and what is actually expressed and received, and the closer the two scores, the more compatible the need, or the more satisfaction of that need area. Thus the satisfaction of the interpersonal behavioral needs has been operationalized in this experimental study and was conducive to testing the hypotheses that have been formulated. These measures of the satisfaction of the interpersonal behavioral needs were correlated with the dependent measures of the Giffin Trust Differential and the Giffin and Patton Evaluation of Problem-Solving Behavior Form through the use of Pearson Correlation Coefficients.

Members of the groups were defined as full or partial attending members and were used to compare the differences between these two groups on the dependent measures of the Giffin Trust Differential and the Giffin and Patton Evaluation of Problem-Solving Behavior Form. In addition, the two groups were compared through the use of the t-test procedure on the satisfaction of each of the interpersonal need areas that have been outlined above. In all cases, an F-ratio was computed, which was transformed into an appropriate t-value through the use of pooled variance estimates (using  $n-1$  as the degrees of freedom), and a one-tailed test was used to discover the probability associated with each of the t-values.

Group Data Treatment - The variables of group intactness

and group intactness X group orientation were of interest to this experimental study. Groups had been defined in terms of intact and non-intact groups and t-tests were used to compare the differences between these two groups on the dependent measures of the Giffin Trust Differential, the Giffin and Patton Evaluation of Problem-Solving Behavior Form, and the NASA exercise, within each of the group orientations. This last dependent variable - NASA - was operationalized through three different procedures: (1) through an analysis of the overall time in seconds to complete the exercise; (2) through an overall group correctness score, and (3) through an overall unweighted group ratio. This last procedure involved dividing the score that the groups had received on the task by the time in seconds that the groups took to complete the task. This allowed for three important ways in which to analyze the level of productivity for the different groups. In all cases, an F-ratio was computed, which was transformed into an appropriate t-value through the use of pooled variance estimates and a one-tailed test was used to discover the probability associated with each of the t-values.

Groups had been defined on the basis of their purpose for formation, or orientation, and intact groups had been selected within this variable to observe the effects on the dependent variables of the satisfaction of interpersonal behavioral needs, the Giffin Trust Differential, the Giffin and Patton Evaluation of Problem-Solving Behavior Form, and the three measures of group productivity associated with the

NASA task discussed above. In all cases, an analysis of variance was computed which produced an appropriate F-value. The significant F-values were then analyzed through the use of the Tukey (b) test (Winer, 1962). Although the Tukey (b) test is usually an a posteriori test, it may be used to analyze analysis of variance results when the hypotheses formulated have specified specific relationships within the significant F-values, and thus was ideally suited for the purposes of this experimental study.

## CHAPTER III

### RESULTS

This chapter presents the results of this experimental study with respect to the hypotheses that have been formulated. The influence of each independent variable is discussed in terms of the effects upon the dependent variables. A .01 significance level was used as the basis for either accepting or rejecting the null hypotheses. The appropriate null hypotheses and an analysis of their significance as reflected in the data is presented below.

#### Hypotheses for Individual Group Members

Satisfaction of Interpersonal Behavioral Needs and Dependent Variables. The hypotheses corresponding to this independent variable were based on the assumption that the satisfaction of specific interpersonal needs would be correlated with certain dependent variables. An analysis of the effects of the satisfaction of the interpersonal behavioral needs was possible only for full attending group members, those who had completed both the pretest and the posttest of the revised FIRO-B instrument. Pearson Correlation Coefficients were found for each relationship hypothesized to exist. The results for these hypotheses are presented in Table IVA and a discussion of each follow.

Hypothesis 1 - There will be a positive relationship between the satisfaction of an individual group member's inclusion need and the individual's trust in the dynamism of the group.

It will be noted in Table IVA that the significance levels for each of the three dimensions of inclusion behavior do not approach the significance level needed to reject the null hypothesis. While the satisfaction of the expressed inclusion need is negatively correlated with trust in the dynamism of the group, it does not reach the .01 significance level. Therefore, the null hypothesis can not be rejected as there appears to be no positive and significant correlation, or relationship, between the satisfaction of an individual group member's interpersonal need for inclusion and his/her trust in the dynamism of the group.

Hypothesis 2 - There will be a positive relationship between the satisfaction of an individual group member's control need and the individual's trust in the expertness of the group.

An analysis of Table IVA reveals that there is no significant relationship between the satisfaction of an individual's interpersonal behavioral need of control and an individual's trust in the expertness of the group. Therefore, the null hypothesis can not be rejected as there does not appear to be a positive and significant relationship between these two variables. However, a further inspection of Table IVA reveals that there is a significant relationship between the satisfaction of an individual's control need and an individual's trust in the dynamism of the group. It is noted that the negative correlation between the satisfaction of the wanted control need and an individual's trust in the dynamism of the group is statistically signifi-

TABLE IVA

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SATISFACTION OF INDIVIDUAL GROUP MEMBERS'  
INTERPERSONAL BEHAVIORAL NEEDS AND DEPENDENT VARIABLES

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	EVALUATION OF GROUP'S PROBLEM- SOLVING ABILITIES	TRUST - EXPERTNESS	TRUST - CHARACTER	TRUST - DYNAMISM
EXPRESSED INCLUSION	-0.1032	0.0202	0.0405	-0.1571*
WANTED INCLUSION	0.0732	0.1088	0.0767	-0.0944
TOTAL INCLUSION	-0.0054	0.0759	0.0910	-0.1194
EXPRESSED CONTROL	-0.0219	0.0291	-0.0518	-0.0889
WANTED CONTROL	-0.0821	-0.0353	-0.0916	-0.1649*
TOTAL CONTROL	0.0440	-0.0783	-0.0513	-0.1956**
EXPRESSED AFFECTION	-0.0518	-0.0789	0.0781	-0.1007
WANTED AFFECTION	0.0129	0.0019	0.0648	-0.0696
TOTAL AFFECTION	0.0125	-0.0317	0.0833	-0.1337*

---

(Pearson Correlation Coefficients) (All Cases = 159)

\*  $p < .05$

\*\*  $p < .01$

cant at less than a .05 probability level. The relationship between the satisfaction of the total control need and an individual's trust in the dynamism of the group is significant at less than a .01 probability level. In both cases, the findings are in the predicted direction, a negative correlation between the two variables. Since the study dealt with the absolute value of the satisfaction of interpersonal needs (determined by the absolute difference between the pretest and the posttest scores) it would be expected that a negative correlation would exist between the two variables. This negative correlation suggests a positive relationship between them, such that the greater the satisfaction of certain dimensions of the control need, the greater the individual's trust in the dynamism of the group. This appears to be true with respect to the wanted and the total dimensions of the interpersonal behavioral need of control.

Hypothesis 3 - There will be a positive relationship between the satisfaction of an individual group member's affection need and the individual's trust in the character of the group.

An analysis of Table IVA shows that the null hypothesis can not be rejected, for there is no positive and significant correlation between the satisfaction of a particular dimension of an individual's interpersonal behavior need for affection and an individual's trust in the character of the group.

Hypothesis 4 - There will be a positive relationship between the satisfaction of an individual group member's interpersonal needs and the individual's evaluation of the group's problem-solving abilities.

Hypothesis 4a - There will be a positive relationship between the satisfaction of an individual group member's control need and the individual's evaluation of the group's problem-solving abilities.

An analysis of Table IVA reveals that there is no significant correlation between an individual's satisfaction of any particular dimension of the interpersonal behavioral needs and his/her evaluation of the group's problem-solving abilities. Hence, the null hypothesis can not be rejected as there does not appear to be a positive and significant relationship between these two variables.

Hypothesis 5 - There will be a positive relationship between the satisfaction of group members' interpersonal needs and the level of group productivity.

This hypothesis called for an analysis of the relationship between the satisfaction of a group's interpersonal behavioral needs and the level of group productivity. The measure of group productivity consists of three separate factors: time, correctness, and a group ratio. An analysis of Table IVB reveals that there are no significant relationships between the satisfaction of a particular dimension of a group's interpersonal behavioral needs and a group's level of productivity. Hence, the null hypothesis can not be rejected as there does not appear to be a significant and positive relationship between these two variables.

Member Attendance and Dependent Variables. The hypotheses corresponding to this independent variable were based on the assumption that there would be differences between members who

TABLE IVB

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SATISFACTION OF GROUP MEMBERS' INTERPERSONAL BEHAVIORAL  
NEEDS WITH RESPECT TO GROUP PRODUCTIVITY MEASURES

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	TIME	CORRECTNESS	RATIO
EXPRESSED INCLUSION	-0.1788	-0.3122	-0.2383
WANTED INCLUSION	0.0502	0.2079	0.0560
TOTAL INCLUSION	-0.0392	-0.0373	-0.1031
EXPRESSED CONTROL	-0.0318	0.0650	-0.0309
WANTED CONTROL	-0.0407	-0.0119	-0.1260
TOTAL CONTROL	0.0840	-0.2594	-0.3919
EXPRESSED AFFECTION	-0.1400	-0.4209	-0.3423
WANTED AFFECTION	0.0617	-0.0525	-0.1552
TOTAL AFFECTION	-0.2430	-0.2805	-0.1202

---

(Pearson Correlation Coefficients) (All cases = 13)

\*  $p < .05$   
 \*\*  $p < .01$

had attended all sessions and members who had missed at least one session on the relevant dependent variables. The results for these hypotheses are presented below.

Hypothesis 6 - Full attending members of intact groups should show significantly greater satisfaction of interpersonal needs in all areas than full attending members of non-intact groups.

An analysis of Table V reveals that there were no significant differences between full attending members of intact groups and full attending members of non-intact groups with respect to the dependent variable, the satisfaction of the interpersonal behavioral needs. Thus the null hypothesis can not be rejected as there does not appear to be a positive and significant relationship between the interaction of member attendance and group intactness with respect to the satisfaction of interpersonal needs.

Hypothesis 7a - There will be a positive relationship between member attendance and level of interpersonal trust.

An analysis of Table VI reveals that there is no significant relationship between member attendance and trust in a particular dimension of the group. Trust in the dynamism of the group is greater for full attending than partial attending members, but this is not significant at the .01 level. Thus the null hypothesis can not be rejected as there appears to be no positive and significant relationships between these two variables.'

Hypothesis 8a - There will be a positive relationship between member attendance and evaluation of the group's problem-solving abilities.

TABLE V

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STATISTICAL DIFFERENCES BETWEEN FULL ATTENDING MEMBERS OF  
INTACT GROUPS AND FULL ATTENDING MEMBERS OF NON-INTACT  
GROUPS ON THE SATISFACTION OF INTERPERSONAL NEEDS

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		<u>NUMBER OF CASES</u>	<u>MEAN</u>	<u>T-VALUE</u>
EXPRESSED INCLUSION	Group 1 Group 2	69 90	1.8406 2.0556	-0.76
WANTED INCLUSION	Group 1 Group 2	69 90	1.6957 1.6667	0.08
TOTAL INCLUSION	Group 1 Group 2	69 90	2.9275 3.1667	-0.45
EXPRESSED CONTROL	Group 1 Group 2	69 90	1.2609 1.2889	-0.13
WANTED CONTROL	Group 1 Group 2	69 90	1.5942 1.4000	0.88
TOTAL CONTROL	Group 1 Group 2	69 90	1.4638 1.4222	0.19
EXPRESSED AFFECTION	Group 1 Group 2	69 90	1.0725 1.2444	-0.75
WANTED AFFECTION	Group 1 Group 2	69 90	1.7246 1.6778	0.18
TOTAL AFFECTION	Group 1 Group 2	69 90	2.4203 2.4333	-0.03

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Group 1 = Intact Member-Intact Group

Group 2 = Intact Member-Non-Intact Group

TABLE VI

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STATISTICAL DIFFERENCES BETWEEN FULL ATTENDING AND  
PARTIAL ATTENDING GROUP MEMBERS ON INTERPERSONAL  
TRUST AND EVALUATION OF GROUP'S PROBLEM-SOLVING ABILITIES

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		<u>NUMBER OF CASES</u>	<u>MEAN</u>	<u>T-VALUE</u>
TRUST - EXPERTNESS	Group 1	159	44.2956	1.26
	Group 2	31	42.2258	
TRUST - CHARACTER	Group 1	159	48.8307	0.16
	Group 2	31	48.5806	
TRUST - DYNAMISM	Group 1	159	41.5472	1.98*
	Group 2	31	38.1935	
EVALUATION OF GROUP'S PROBLEM- SOLVING ABILITIES	Group 1	159	49.7358	2.88**
	Group 2	31	43.0968	

---

Group 1 = Intact Members  
Group 2 = Non-Intact Members

\* =  $p < .05$   
\*\* =  $p < .01$

An analysis of Table VI reveals that there is a significant difference between full attending and partial attending members in the predicted direction, with full attending members evaluating the group problem-solving abilities as being greater than partial attending members. Therefore, the null hypothesis can be rejected as there appears to be a positive and significant relationship between member attendance and their evaluation of the group's problem-solving abilities.

### Group Hypotheses

Group Intactness and Dependent Variables. The hypotheses corresponding to this independent variable were based on the assumption that the intactness of a group would have significant effects upon the dependent variables that were of importance to this experimental study. The analyses of the effects of group intactness on the dependent variables were divided according to the particular group orientation, and thus statistical differences between intact and non-intact groups were analyzed within particular group orientations. The appropriate hypotheses and their statistical significance are presented below.

Hypothesis 7b - There will be a positive relationship between group intactness and interpersonal trust.

An analysis of Table VII reveals that there are no significant relationships between group intactness and trust in a particular dimension of interpersonal trust. There is a positive relationship between group intactness and trust in the expertness of the group for Long-term work groups, but this is not significant at the accepted .01 level. Therefore, the

TABLE VII

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 STATISTICAL DIFFERENCES BETWEEN INTACT AND NON-INTACT GROUPS ON  
 INTERPERSONAL TRUST WITH RESPECT TO GROUP ORIENTATIONS
 

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			<u>NUMBER OF CASES</u>	<u>MEAN</u>	<u>T-VALUE</u>
Long-Term Work Groups	Trust - Expertness	Group 1	4	50.55	-2.327*
		Group 2	6	42.10	
	Trust - Dynamism	Group 1	4	45.96	-1.323
		Group 2	6	40.50	
	Trust - Character	Group 1	4	52.43	-1.367
		Group 2	6	47.76	
Short-Term Work Groups	Trust - Expertness	Group 1	2	41.12	-0.937
		Group 2	11	42.06	
	Trust - Dynamism	Group 1	2	36.47	0.424
		Group 2	11	37.61	
	Trust - Character	Group 1	2	47.57	0.712
		Group 2	11	49.84	

TABLE VII  
(Continued)

STATISTICAL DIFFERENCES BETWEEN INTACT AND NON-INTACT GROUPS ON  
INTERPERSONAL TRUST WITH RESPECT TO GROUP ORIENTATIONS

			NUMBER OF CASES	MEAN	T-VALUE
Learning Groups	Trust - Expertness	Group 1	3	44.55	-0.071
		Group 2	7	44.32	
	Trust - Dynamism	Group 1	3	40.86	0.185
		Group 2	7	40.17	
	Trust - Character	Group 1	3	45.66	0.836
		Group 2	7	49.32	
Experimental Groups	Trust - Expertness	Group 1	3	44.77	0.041
		Group 2	3	42.83	
	Trust - Dynamism	Group 1	3	46.34	-0.221
		Group 2	3	46.72	
	Trust - Character	Group 1	3	46.63	-0.279
		Group 2	3	48.44	

Group 1 = Intact Groups  
Group 2 = Non-Intact Groups

\* =  $p < .05$

null hypothesis can not be rejected as there appears to be no significant relationship between these two variables within any particular group orientation.

Hypothesis 8b - There will be a positive relationship between group intactness and the evaluation of the group's problem-solving abilities.

An analysis of Table VIII reveals that there is no significant relationship between group intactness and evaluation of the group's problem-solving abilities, within any particular group orientation. Therefore, the null hypothesis can not be rejected as there does not appear to be a significant relationship between these two variables.

Hypothesis 9 - There will be a positive relationship between group intactness and group productivity.

An analysis of Table IX reveals that there are no positive relationships between group intactness and a particular measure of productivity within any specific group orientation. While there is a positive relationship between group intactness and productivity, as measured by the ratio characteristic, for Short-term work groups, this finding is not significant at the accepted .01 level. Therefore, the null hypothesis can not be rejected as there appears to be no significant relationship between group intactness and the level of group productivity.

Group Orientation and Dependent Variables. The hypotheses corresponding to this independent variable were based on the assumption that the group orientation, or the purpose of the group, would have significant effects upon the relevant dependent variables. The effects of group orientations on the

TABLE VIII

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STATISTICAL DIFFERENCES BETWEEN INTACT AND NON-INTACT  
GROUPS ON EVALUATION OF GROUP'S PROBLEM-SOLVING  
ABILITIES WITH RESPECT TO GROUP ORIENTATIONS

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		<u>NUMBER OF CASES</u>	<u>MEAN</u>	<u>T-VALUE</u>
Long-Term Work Groups	Group 1	4	52.51	-0.930
	Group 2	6	50.68	
Short-Term Work Groups	Group 1	2	49.00	-0.924
	Group 2	11	43.01	
Learning Groups	Group 1	3	48.85	1.261
	Group 2	7	55.27	
Experimental Groups	Group 1	3	50.90	0.035
	Group 2	3	50.72	

---

Group 1 = Intact Groups  
Group 2 = Non-Intact Groups

TABLE IX

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 STATISTICAL DIFFERENCES BETWEEN INTACT AND NON-INTACT GROUPS OF PRODUCTIVITY  
 MEASURES WITH RESPECT TO GROUP ORIENTATIONS
 

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			<u>NUMBER OF CASES</u>	<u>MEAN</u>	<u>T-VALUE</u>
Long-Term Work Groups	Time	Group 1	4	641	0.447
		Group 2	6	674.33	
	Correctness	Group 1	4	23.75	-0.335
		Group 2	6	22.16	
	Ratio	Group 1	4	.0369	-0.271
		Group 2	6	.0342	
Short-Term Work Groups	Time	Group 1	2	960	-1.355
		Group 2	11	730.9	
	Correctness	Group 1	2	22	0.662
		Group 2	11	25.55	
	Ratio	Group 1	2	.1532	-2.526*
		Group 2	11	.0375	

TABLE IX  
(Continued)

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STATISTICAL DIFFERENCES BETWEEN INTACT AND NON-INTACT GROUPS OF PRODUCTIVITY  
MEASURES WITH RESPECT TO GROUP ORIENTATIONS

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			<u>NUMBER OF CASES</u>	<u>MEAN</u>	<u>T-VALUE</u>
Learning Groups	Time	Group 1	3	855	
		Group 2	7	854.3	-0.004
	Correctness	Group 1	3	30.66	
		Group 2	7	26.42	-1.048
	Ratio	Group 1	3	.0361	
		Group 2	7	.0348	-0.1331
Experimental Groups	Time	Group 1	3	850	
		Group 2	3	860	-0.034
	Correctness	Group 1	3	31.33	
		Group 2	3	40.66	-1.565
	Ratio	Group 1	3	.0416	
		Group 2	3	.0570	-0.693

Group 1 = Intact Groups  
Group 2 = Non-Intact Groups

\* =  $p < .05$

dependent variables were hypothesized only for intact groups so as to allow the minimum number of relevant hypotheses to be tested, and hence the results for this independent variable reflect the influence of the group intactness variable. A Oneway Analysis of Variance was performed on each of the hypothesized relationships. Those findings that were statistically significant at the critical rejection level were subjected to a Tukey (b) procedure which analyzes the significant differences between subsets of the groups used in the experimental study. The relevant hypotheses and an analysis of the statistical results for each are presented below.

Hypothesis 10 - Learning groups and T-groups should show a significantly greater satisfaction of the inclusion need than all other groups.

An analysis of Table X reveals that there is no significant relationship between group orientations and the satisfaction of the group's expressed inclusion mean. Table X does reveal that there is a significant relationship between the group orientations and the satisfaction of the wanted and the total group inclusion need. In terms of the satisfaction of the wanted inclusion need for the groups, the overall  $F$ -ratio is significant at the .01 critical rejection level. A Tukey (b) multiple range test was performed on this significant result and an analysis of Table XI reveals that the Learning groups had their wanted inclusion need met significantly less than any of the other groups. In addition, the Short-term work groups and the Experimental groups had their wanted inclusion need met significantly more than any of the other groups.

TABLE X

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SUMMARY OF ANALYSIS OF VARIANCE · PURPOSE OF GROUPS  
WITH RESPECT TO THE SATISFACTION OF GROUP INCLUSION NEEDED

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VARIABLE	<u>GROUP EXPRESSED INCLUSION MEAN</u>			
	D.F	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	3.4639	9.8660	1.376
WITHIN GROUPS	10	6.2943	0.6294	
BETWEEN GROUPS	14	9.7482		

VARIABLE	<u>GROUP WANTED INCLUSION MEAN</u>			
	D.F	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	22.0932	5.5233	5.650**
WITHIN GROUPS	10	9.7765	0.9776	
BETWEEN GROUPS	14	31.8697		

VARIABLE	<u>GROUP TOTAL INCLUSION MEAN</u>			
	D.F	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	43.3563	10.8391	4.444*
WITHIN GROUPS	10	24.3890	2.4389	
BETWEEN GROUPS	14	67.7453		

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\*  $p < .05$   
\*\*  $p < .01$

TABLE XI

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MULTIPLE RANGE TEST: TUKEY (b) PROCEDURE WITH RESPECT  
TO THE SATISFACTION OF GROUP INCLUSION NEED

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VARIABLE	<u>GROUP WANTED INCLUSION MEAN</u>			
SUBSET 1				
GROUP MEAN	EXP GRPS 0.3553	STW GRPS 1.0777	LTW GRPS 1.5500	T-GROUPS 2.8756
-----				
SUBSET 2				
GROUP MEAN	LTW GRPS 1.5500	T-GROUPS 2.8765	LRN GRPS 3.7767	
-----				

VARIABLE	<u>GROUP TOTAL INCLUSION MEAN</u>			
SUBSET 1				
GROUP MEAN	EXP GRPS 1.4747	STW GRPS 2.7443	LTW GRPS 3.4000	T-GROUPS 5.2760
-----				
SUBSET 2				
GROUP MEAN	STW GRPS 2.7443	LTW GRPS 3.4000	T-GROUPS 5.2760	LRN GRPS 6.3100
-----				

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RANGES FOR THE .050 LEVEL = 3.91    4.26    4.49    4.65

HOMOGENEOUS SUBSETS (Subsets of Groups, no pair of which have means that differ by more than the shortest significant range for a subset of that size)

LTW GRPS = LONG TERM WORK GROUPS      EXP GRPS = EXPERIMENTAL GROUPS  
STW GRPS - SHORT TERM WORK GROUPS      LRN GRPS = LEARNING GROUPS

In terms of the satisfaction of the total inclusion need, the finding is not significant at the critical rejection level but is in the right direction. Table XI reveals that the Learning groups had their total inclusion need met significantly less than any of the other groups, while the Experimental groups had their total inclusion need met significantly more than any of the other groups. Based on these findings, the null hypothesis can not be rejected as it does not appear that the Learning Groups and the T-groups have their inclusion need met significantly more than any of the other groups.

Hypothesis 11 - Long-term Work groups and Short-term work groups should show a significantly greater satisfaction of the control need than all other groups.

An analysis of Table XII reveals that there are no significant relationships between the group orientations and the satisfaction of any particular dimension of this interpersonal behavioral need for control. Hence the null hypothesis can not be rejected as there does not appear to be a positive and significant relationship between the Long-Term work groups and the Short-term Work groups and the satisfaction of the control need in comparison to the other group orientations. Furthermore, there does not appear to be a positive and significant relationship between any type of group orientation and greater satisfaction of the interpersonal behavioral need of control.

Hypothesis 12 - T-groups should show a significantly greater satisfaction of the affection need than all other groups.

TABLE XII

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SUMMARY OF ANALYSIS OF VARIANCE: PURPOSE OF GROUPS  
WITH RESPECT TO THE SATISFACTION OF GROUP CONTROL NEED

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VARIABLE	<u>GROUP EXPRESSED CONTROL MEAN</u>			
	D.F	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	4.0164	1.0041	3.379
WITHIN GROUPS	10	2.9713	0.2971	
BETWEEN GROUPS	14	6.9877		

VARIABLE	<u>GROUP WANTED CONTROL MEAN</u>			
	D.F	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	2.5100	0.6275	2.123
WITHIN GROUPS	10	2.9552	0.2955	
BETWEEN GROUPS	14	5.4651		

VARIABLE	<u>GROUP TOTAL INCLUSION MEAN</u>			
	D.F	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	1.9103	0.4776	2.401
WITHIN GROUPS	10	1.9888	0.1989	
BETWEEN GROUPS	14	3.8991		

---

\* =  $p < .05$   
 \*\* =  $p < .01$

An analysis of Table XIII reveals that the relationship between the group orientations and the satisfaction of the group's affection need is statistically significant at the .01 critical rejection level for each of the dimensions of the affection need. In terms of the satisfaction of the group's expressed affection need, an analysis of Table XIV reveals that the Short-term work groups and the T-groups have the lowest satisfaction of the expressed affection need while the Experimental groups have this particular need met significantly more than all other groups. In terms of the satisfaction of the wanted affection need, an analysis of Table XIV reveals that the Learning groups have the lowest satisfaction of this need while the Experimental and the Long-term work groups have this need met significantly more than all other groups. Finally, in terms of the satisfaction of the group's total affection need, an analysis of Table XIV reveals that the Learning groups and the T-groups have the lowest satisfaction of this need while the Experimental groups have their total affection need met significantly more than all other groups. Thus the null hypothesis can not be rejected since the T-groups do not have their affection need met significantly more than all other groups. Nevertheless, there remains important statistically significant differences between group orientations with respect to the satisfaction of the affection need.

Hypothesis 13 - Long-term work groups and Short-term work groups should show a significantly greater trust in the expertness of the group than all other groups.

TABLE XIII

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SUMMARY OF ANALYSIS OF VARIANCE: PURPOSE OF GROUPS  
WITH RESPECT TO THE SATISFACTION OF GROUP AFFECTION NEED

---

VARIABLE	<u>GROUP EXPRESSED AFFECTION MEAN</u>			
	D.F	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	3.4734	0.8683	12.074**
WITHIN GROUPS	10	0.7192	0.0719	
BETWEEN GROUPS	14	4.1926		

VARIABLE	<u>GROUP WANTED AFFECTION MEAN</u>			
	D.F	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	5.4315	1.3579	5.688**
WITHIN GROUPS	10	2.3871	0.2387	
BETWEEN GROUPS	14	7.8185		

VARIABLE	<u>GROUP TOTAL AFFECTION MEAN</u>			
	D.F	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	17.6585	4.4146	5.144**
WITHIN GROUPS	10	8.5813	0.8581	
BETWEEN GROUPS	14	26.2399		

---

\* =  $p < .05$

\*\* =  $p < .01$

TABLE XIV

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MULTIPLE RANGE TEST: TUKEY(b) PROCEDURE WITH  
RESPECT TO THE SATISFACTION OF GROUP AFFECTION NEED

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VARIABLE                      GROUP EXPRESSED AFFECTION MEAN

SUBSET 1

	EXP GRPS
GROUP MEAN	0.3777

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SUBSET 2

	LRN GRPS	LTW GRPS	STW GRPS
GROUP MEAN	1.1887	1.2833	1.3667

-----

SUBSET 3

	STW GRPS	T-GROUPS
GROUP MEAN	1.3667	2.0165

-----

VARIABLE                      GROUP WANTED AFFECTION MEAN

SUBSET 1

	EXP GRPS	LTW GRPS	STW GRPS	T-GROUPS
GROUP MEAN	0.9767	1.1583	1.6443	2.2440

-----

SUBSET 2

	STW GRPS	T-GROUPS	LRN GRPS
GROUP MEAN	1.6443	2.2440	2.5443

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TABLE XIV  
(Continued)

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MULTIPLE RANGE TEST: TUKEY(b) PROCEDURE WITH  
RESPECT TO THE SATISFACTION OF GROUP AFFECTION NEED

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VARIABLE	<u>GROUP TOTAL AFFECTION MEAN</u>			
SUBSET 1				
	EXP GRPS	STW GRPS	LTW GRPS	
GROUP MEAN	1.3553	3.0110	3.1332	
-----				
SUBSET 2				
	STW GRPS	LTW GRPS	LRN GRPS	T-GROUPS
GROUP MEAN	3.0110	3.1332	3.8667	4.9385
-----				

---

RANGES FOR THE .050 LEVEL = 3.91    4.26    4.49    4.65

HOMOGENEOUS SUBSETS (Subsets of groups, no pair of which  
have means that differ by more than  
the shortest significant range for  
a subset of that size)

LTW GRPS = LONG TERM WORK GROUPS  
STW GRPS = SHORT TERM WORK GROUPS

EXP GRPS = EXPERIMENTAL GROUPS  
LRN GRPS - LEARNING GROUPS

An analysis of Table XV reveals that there is no significant relationship between a particular group orientation and trust in the expertness factor of the interpersonal trust measurement. Hence the null hypothesis can not be rejected as there does not appear to be a statistically significant difference between Long-term work groups and Short-term work groups with respect to the level of trust in the expertness of the group when compared with the other group orientations.

Hypothesis 14 - T-groups, Long-term work groups, and short-term work groups should show a significantly greater trust in the dynamism of the group than all other groups.

An analysis of Table XV reveals that there is no significant relationship between a particular group orientation and trust in the dynamism of the group. Hence the null hypothesis can not be rejected as there does not appear to be a statistically significant difference between T-groups, Long-term and Short-term work groups with respect to the level of trust in the dynamism of the group when compared to other group orientations.

Hypothesis 15 - T-groups should show a significantly greater trust in the character of the group than all other groups.

An analysis of Table XV reveals that there is no significant relationship between a particular group orientation and trust in the character factor of the interpersonal trust measure. Hence the null hypothesis can not be rejected as there does not appear to be a statistically significant difference between the T-group orientation and other group orientations with respect to the level of trust in the character of the group.

TABLE XV

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SUMMARY OF ANALYSIS OF VARIANCE: PURPOSE OF GROUPS  
WITH RESPECT TO THE LEVEL OF INTERPERSONAL TRUST

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VARIABLE	<u>GROUP EXPERTNESS MEAN</u>			
	D.F.	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	107.0110	26.7527	1.364
WITHIN GROUPS	10	196.1580	19.6158	
BETWEEN GROUPS	14	303.1689		

VARIABLE	<u>GROUP CHARACTER MEAN</u>			
	D.F.	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	180.0789	45.0200	1.179
WITHIN GROUPS	10	381.7107	38.1711	
BETWEEN GROUPS	14	561.7905		

VARIABLE	<u>GROUP DYNAMISM MEAN</u>			
	D.F.	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	815.7156	203.9289	1.461
WITHIN GROUPS	10	1395.4724	139.5472	
BETWEEN GROUPS	14	2211.1880		

---

\* =  $p < .05$   
 \*\* =  $p < .01$

Hypothesis 16 - Long-term work groups and Short-term work groups should show a significantly greater evaluation of the group's problem-solving abilities than all other groups.

An analysis of Table XVI reveals that there is no significant relationship between a particular group orientation and the evaluation of the group's problem-solving abilities. Therefore, the null hypothesis can not be rejected as Long-term and Short-term work groups do not appear to evaluate their group's problem-solving abilities significantly greater than the other group orientations.

Hypothesis 17 - Long-term work groups and Short-term work groups should show significantly greater levels of group productivity than all other groups.

An analysis of Table XVII reveals that there are no significant relationships between a particular group orientation and any of the factors of the group productivity measure. Therefore, the null hypothesis can not be rejected as it does not appear that the Long-term and Short-term groups are more productive than any of the other group orientations. It appears that there is no significant relationship between a group orientation and any of the measures of group productivity that were used in this study.

### Summary of Results

This experimental study sought to investigate the effects of a number of independent variables for individuals and for groups upon the relevant dependent variables. In terms of the effects of the independent variables corresponding to individuals, no significant results were found for the hypotheses corresponding to the proposed relationships between the satisfac-

TABLE XVI

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SUMMARY OF ANALYSIS OF VARIANCE · PURPOSE OF GROUPS  
WITH RESPECT TO THE EVALUATION OF THE  
GROUP'S PROBLEM-SOLVING ABILITIES

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	D.F.	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	105.6245	26.4061	0.902
WITHIN GROUPS	10	292.6909	29.2691	
BETWEEN GROUPS	14	398.3154		

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\*  $p < .05$   
\*\*  $p < .01$

TABLE XVII

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SUMMARY OF ANALYSIS OF VARIANCE    PURPOSE OF GROUPS  
WITH RESPECT TO THE LEVEL OF GROUP PRODUCTIVITY

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VARIABLE	<u>GROUP TIME IN SECONDS</u>			
	D.F.	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	113658.8750	37886.2915	0.813
WITHIN GROUPS	10	419162.0000	46573.5557	
BETWEEN GROUPS	14	532820.8750		

VARIABLE	<u>GROUP CORRECTNESS SCORE</u>			
	D.F.	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	254.2369	84.7756	1.600
WITHIN GROUPS	10	476.7500	52.9722	
BETWEEN GROUPS	14	731.0769		

VARIABLE	<u>GROUP PRODUCTIVITY RATIO</u>			
	D.F.	SUM OF SQUARES	MEAN SQUARE	F RATIO
SOURCE	4	0.0130	0.0043	0.818
WITHIN GROUPS	10	0.0479	0.0053	
BETWEEN GROUPS	14	0.0609		

---

\* =  $p < .05$   
\*\* =  $p < .01$

tion of an individual's interpersonal behavioral needs and the individual's trust in a particular dimension of the group. A significant finding was discovered between the satisfaction of an individual's wanted and total control need and his/her trust in the dynamism of the group, such that the greater the satisfaction of an individual's control need, the greater the individual's trust in the dynamism of the group. In addition, no significant relationship was found between the satisfaction of an individual's interpersonal behavioral needs and his/her evaluation of the group's problem-solving abilities.

The independent variable of member attendance had significant effects upon the dependent variables. The hypotheses proposed a positive and significant relationship between member attendance and both trust in the group and evaluation of the group's problem-solving abilities. The results confirm these hypotheses, such that full attending members hold a greater trust in the dynamism of the group and evaluate their group's problem-solving abilities significantly higher than partial attending members.

The hypotheses corresponding to the effects of group intactness upon the relevant dependent variables were not confirmed. A trend was noted of a positive relationship between group intactness and trust in the expertness of the group, such that intact groups have a greater trust in the expertness of the group than non-intact groups, but the result is not statistically significant at the critical rejection level of .01.

The findings with respect to the effects of group orientations, or purposes, upon the dependent variables do not confirm the initial hypotheses. Nevertheless, important statistically significant results were reported between the group orientations and the satisfaction of the interpersonal behavioral needs for inclusion and affection, such that certain groups have these needs met significantly more than other group orientations. Although the results do not confirm the hypothesized relationships proposed, they are statistically significant and hence are important findings for this study.

CHAPTER IV  
DISCUSSION AND CONCLUSIONS

The discussion of results presented in this chapter is organized in terms of the four independent variables: (1) the satisfaction of interpersonal behavioral needs, (2) member attendance, (3) group intactness, and (4) group orientation. The correlations between these research variables and the dependent variables will be discussed below. The closing section of this chapter will present suggestions for future research efforts.

Satisfaction of Interpersonal Needs

As noted in Chapter III the satisfaction of group members' interpersonal behavioral needs was not significantly related to the dependent measures in the hypothesized directions. There is no positive relationship between the satisfaction of an individual group member's inclusion need and the individual's trust in the dynamism of the group. Furthermore, there is no positive relationship between the satisfaction of group members' control needs and trust in the expertness of the group. Finally, there is no positive relationship between the satisfaction of group members' affection needs and trust in the character of the group.

There was a significant relationship between the satisfaction of group members' wanted and total control needs and trust in the dynamism of the group. Those members whose control needs were satisfied exhibited a higher trust in the dynamism

of the group than those members whose control needs were not satisfied. This suggests that the most important aspect of the group experience for members is the perception of the degree of activeness-passiveness of their groups. Given a situation where groups have started to form and work on their problems and tasks, the perception of whether the group is progressing at all would appear to be the crucial variable operating in the situation. That is, groups which are actively progressing toward their goals appear to have their members' control need satisfied more than passive groups. Thus the satisfaction of group members' control needs is significantly correlated with perceptions of the degree of dynamism in the group.

No significant relationship was found between the satisfaction of group members' interpersonal behavioral needs and members' evaluation of their groups' problem-solving abilities. In addition, no significant relationship was discovered between the satisfaction of members' interpersonal behavioral needs and the level of group productivity. This suggests that although some group members have their interpersonal needs met significantly more than other members, neither the perceptions of the group's problem-solving abilities nor the actual level of group productivity is affected by the degree of member need-satisfaction.

In summary, the satisfaction of the interpersonal behavioral needs did not correlate with the dependent variables in the predicted directions. This suggests that the satisfaction of group members' interpersonal needs is not significantly related

to either perceptions of interpersonal trust, perceptions of a group's problem-solving abilities, or to the level of group productivity. It can thus be concluded that the satisfaction of group members' interpersonal behavioral needs do not significantly affect the research variables that were of importance to this experimental study.

#### Member Attendance

As noted in Chapter III member attendance had significant effects upon the dependent variables. There were no significant differences between full attending members of intact groups and full attending members of non-intact groups with respect to the satisfaction of group members' interpersonal behavioral needs. This suggests that members are able to attain satisfaction of their interpersonal needs from a group of people regardless of the relative degree of attendance by the other members of the group. There were no significant differences between intact and non-intact groups for full attending members in terms of the satisfaction of their interpersonal needs.

There was a significant difference between full attending members and partial attending members with respect to perceptions of interpersonal trust. Full attending members differed significantly from partial attending members with respect to perceptions of trust in the dynamism of the group, with full attending members rating their groups significantly higher on the dynamism dimension of the interpersonal trust scale than partial attending members. This suggests that dynamism is again a key variable operating in the early development of

groups. In this respect, those members who attended all group sessions perceived their groups as being more active than those members who had missed at least one session. This suggests that those members who attended all sessions believe their groups to be progressing more actively toward their goals than those members who did miss a session. Again dynamism, or the degree of activeness-passiveness of the group, is shown to be an important variable in the early formation of group work.

Full attending members also rated the evaluation of their groups' problem-solving abilities as being significantly higher than partial attending members. This would appear to be in accordance with the finding above with respect to differences in perceptions of dynamism, such that members who attended all group sessions perceive their groups to be moving actively toward the accomplishment of their goals and thus evaluate their groups' problem-solving abilities as significantly higher than those members who missed at least one session. Thus, these findings suggest that full attending members perceive their groups to be better able to meet the task demands of the environment significantly more than those members who only partially attended the group sessions.

In summary, member attendance was shown to have important implications with respect to the dependent variables. Member attendance was shown to be significantly related to perceptions of trust in the group and to members' evaluation of their groups' problem-solving abilities in the predicted direction. Thus, the variable of member intactness has important effects

upon the research variables that were part of this study.

#### Group Intactness

As noted in Chapter III group intactness was not significantly related to the dependent variables of this study. Intact groups did not differ significantly in terms of perceptions of interpersonal trust from non-intact groups. There was a significant difference between intact and non-intact groups with respect to perceptions of the expertness dimension of the interpersonal trust scale for Long-term work groups in the predicted direction, but this finding was not evident for any of the other group orientations. Intact groups did rate their groups as being significantly higher in perceptions of trust in the expertness dimension of their groups, but the lack of congruence between this finding and the results for the other group orientations suggests that this finding may be a spurious one. Therefore, there appears to be no significant and positive relationship between group intactness and perceptions of interpersonal trust.

There were no significant differences between intact and non-intact groups with respect to perceptions of groups' problem-solving abilities. This finding suggests that group intactness does not significantly affect the perception of group problem-solving abilities. Both intact and non-intact groups tended to rate their groups as being able to solve their groups' problems adequately. Thus, group intactness is not significantly related to this dependent variable.

There were no significant differences between intact and non-intact groups with respect to the level of group productivity.

Intact groups did better in terms of the ratio measure for Short-term work groups than non-intact groups but the lack of congruence between this finding and the results for the other group orientations suggests that there are no significant differences between intact and non-intact groups with respect to their level of group productivity.

In summary, the variable of group intactness did not correlate significantly with the dependent variables that were of importance to this study. While the variable of member attendance did have significant relationships with the dependent variable, the nature of the groups' attendance did not correlate significantly with those variables.

#### Group Orientation

As noted in Chapter III there were no significant differences between group orientations with respect to the dependent variables in the hypothesized directions. Nevertheless, there were some important statistical differences between group orientations with respect to the dependent variables.

In terms of the satisfaction of the interpersonal need for inclusion, the Experimental and the Short-term work groups had their inclusion need met significantly more than any of the other group orientations. This suggests that the Experimental groups, which had been told that they were part of an experimental study, felt included in the designs of the research project, such that they had an "insiders" viewpoint. The Short-term work groups, with their emphasis upon presenting a final project in a relatively short period of time, were able to meet their inclusion needs in order to

effectively work on their tasks. Subsequent interviews with the members of these groups found that the work load had been distributed efficiently, thus including all the members in the tasks that the group faced. In this respect, these two group orientations had their inclusion needs met significantly more than any other group orientations.

There were no significant differences between group orientations with respect to the satisfaction of the interpersonal behavioral need for control. However, there were significant differences between group orientations with respect to the satisfaction of the affection needs. Experimental groups had this need met significantly more than any of the other group orientations for the expressed affection dimension. In terms of the wanted affection need, Experimental and the Long-term work groups had this need met significantly more than all other group orientations. Finally, Experimental groups had their total affection need met significantly more than any of the other group orientations. Thus the Experimental groups seem to have their affection needs met significantly more than all other group orientations. The reasons for this are not clear but additional research should be able to probe into the nature of the differences between group orientations.

There were no significant differences between group orientations with respect to perceptions of interpersonal trust. Thus it appears that the nature of the group orientations do not affect the group members' perceptions of trust for their particular groups. There is no significant relationship between group orientations and perceptions of interpersonal trust.

Finally, there were no significant differences between group orientations with respect to either perceptions of the groups' problem-solving abilities or the levels of group productivity. This suggests that there is no inherent relationship between a particular group orientation and these two dependent measures.

In summary, the variable of group orientation was shown to have important effects upon the dependent variables. Although these results were not in the predicted directions, they represent important statistical differences between group orientations. Thus the nature of group orientations is such to orient their members toward certain effects, and this study was revealed some of those effects.

#### Concluding Summary

The results cast doubts upon the original hypotheses and the relationships that were proposed to exist. The satisfaction of the interpersonal behavioral needs was not significantly related to the dependent variables in the predicted directions. Second, the variable of member attendance did prove to have important effects upon the dependent variables in the predicted directions. This lends support to the belief that absenteeism has important effects upon members' perceptions of group interactions and events. Third, the variable of group intactness was shown to have no significant relationship to the dependent variable. Thus while the member attendance variable was important to the results of this study, the effects of this variable for groups was not. Finally, the variable of group orientations was

shown to have important effects upon the dependent variables. Although these results was not in the proposed directions, they do show important statistical differences between the group orientations. Thus, this study found that while the major hypotheses corresponding to the satisfaction of interpersonal needs were not confirmed, the important environmental variables of member attendance and group orientations did significantly affect the results of this study. In conclusion, the study shows the inadequacy of some of the original hypotheses while pointing out that there are important statistical findings which need to be explored in future research attempts.

#### Future Research Suggestions

The results of this study suggest several different approaches or improvements that could be made in future studies. First, the next step in developing any sort of practical theoretical position would be to test the variables used in this study in actual ongoing groups. The groups that were used in this experiment came from the university environment in which the groups were formed for the purposes of the course work. Research needs to be directed toward how the satisfaction of the interpersonal behavioral needs affects the dependent variables in "natural" groups which have been formed on their own volition. This should enable future research efforts to analyze how the satisfaction of interpersonal needs affects actual groups that operate.

Second, the present study used different populations to test the effects of the independent variables. Thus, three

different types of classes were used, and different subjects may enroll in the different courses. This suggests that future research must be careful to use similar populations for the testing of the effects of the independent variables, such that the results become more clear and more consistent within subject populations. There may be inherent differences between students who take the three courses and this effect should be minimized in future research efforts.

Third, the present study confounded the influence of the instructor variable with the group orientation variable. Thus five different instructors were used in the present study. Although the groups were formed at the beginning of the semester to minimize the effects of the instructor variable, it may have played a part in the results and may have confounded the effects of the group orientation variable. Future research efforts need to make sure that there are no confounding variables present in the research project. By working with ongoing groups which have formed voluntarily, this should enable future researchers to minimize effects of the instructor variable.

Fourth, additional time is needed for the groups to develop as the present research project tended to use a relatively small period of time in which the groups were allowed to meet. Thus the question becomes, "How much of a chance did the groups have to develop and meet their interpersonal needs?" Since the present study allowed only four group meetings, it is questionable how much time the groups did have to meet and satisfy their needs. The influence of

the dynamism variable would seem to imply that the groups had not gone past the initial stages of development; that is, a concern with whether the group was progressing actively or not. Future research efforts must be focused upon allowing the groups a significant amount of time to develop and meet in order to observe the effects desired.

In general, future research efforts should be conducted which increases our understanding of how group members have their interpersonal needs satisfied with the effects that this has upon relevant dependent variables. While the present study does indicate some areas that appear to be involved in these effects future research should continue to pinpoint these areas of concern.

APPENDIX A

Schutz's (1966) Fundamental Interpersonal  
Relations Orientation - Behavior Form (FIRO-B)

Introduction to  
Schutz's Fundamental Interpersonal Relations  
Orientation - Behavior (FIRO-B)

"FIRO" stands for "Fundamental Interpersonal Relations Orientation." It signifies the basic idea that every person orients himself in characteristic ways toward other people, and that knowledge of these orientations allows for considerable understanding of individual behavior and the interaction of people.

Work leading toward the theory began in 1952 at the Naval Research Laboratory in Washington, D.C., with the Systems Coordination Division on the performance of a Combat Information Center aboard ship. From this beginning the work moved to the Systems Analysis Department of Tufts College and later to the Social Relations Department at Harvard.

The major premise of the theory is that people need people--and each person, from childhood on, develops a fundamental interpersonal relations orientation. Schutz posited three fundamental dimensions of interpersonal behavior--inclusion, control, and affection. His analysis of the results of a large number of research studies--parental, clinical, small group--shows convergence in their discovery of the importance of these three areas, and demonstrates how a measure of these three variables can be used both to test a wide variety of hypotheses about interpersonal relations and to understand and predict interpersonal behavior.

Each of these three areas can be divided into two parts--the behavior characteristic of each need which the individual actively expressed toward others, and the degree to which he

wishes such behavior to be directed toward him.

Inclusion concerns the entrance into associations with others. The need for inclusion involves being able to be interested in other people to a sufficient degree and feeling that others are satisfactorily interested in oneself. Behavior aimed at gaining inclusion is seen as an attempt to attract attention and interest.

The need to control is felt in interactions involving control and power. It includes a need to be able to respect the competence of others and to be respected by other people. It is the need to feel adequate and reliable. Control behavior implies decision making, and is implied in such terms as "Authority," "influence," "Dominance," "Submissive," and "leader."

Affection, unlike inclusion and control, occurs primarily between two people (at a time). It includes the need to love and be loved, and to feel lovable. It is implied in the terms "positive feelings," "caring," "cool," "hate," and "emotionally involved."

In order to have satisfactory interpersonal relationships, according to Schutz, the individual must establish in each of these three areas a balance between the amount of behavior he actively expresses and the amount he receives (or desires to receive) from others.

FIRO-B was designed to measure the individual's expressed behavior toward others (e) and the behavior he wants from others (w) in the three areas of interpersonal need. It has, therefore, six scales: expressed inclusion (eI), wanted

inclusion (wI), expressed control (eC), wanted control (wC), expressed affection (eA), and wanted affection (wA). The test includes nine items for the measurement of each of these six variables. The items are scored according to the Guttman method of cumulative scale analysis. For each variable the respondent is assigned a score equal to the number of items accepted (marked on the accepting side of the midpoint on the scale e.g., in item #2, either "usually," "often," or "sometimes.") Items for each variable are scattered throughout the questionnaire; sorting of items for each variable must be done by use of the following code sheet. A complete matrix of relevant interpersonal data according to the FIRO-B system is presented in an additional page.

In his book (Schutz (1958) Fundamental Interpersonal Relations Orientators) he presents considerable supporting evidence on the reliability and validity of this scale (pp. 66-80).

## FIRO-B

Name \_\_\_\_\_  
Date \_\_\_\_\_

For each statement below, decide which of the following answers best applies to you. Place the number of the answer in the box at the left of the statement. Please be as honest as you can. 1) usually, 2) often, 3) sometimes, 4) occasionally, 5) rarely, 6) never.

- \_\_\_ 1. I try to be with people.
- \_\_\_ 2. I let other people decide what to do.
- \_\_\_ 3. I join social groups.
- \_\_\_ 4. I try to have close relationships with people.
- \_\_\_ 5. I tend to join social organizations when I have an opportunity.
- \_\_\_ 6. I let other people strongly influence my actions.
- \_\_\_ 7. I try to be included in informal social activities.
- \_\_\_ 8. I try to have close, personal relationships with people.
- \_\_\_ 9. I try to include other people in my plans.
- \_\_\_ 10. I let other people control my actions.
- \_\_\_ 11. I try to have people around me.
- \_\_\_ 12. I try to get close and personal with people.
- \_\_\_ 13. When people are doing things together I tend to join them.
- \_\_\_ 14. I am easily led by people.
- \_\_\_ 15. I try to avoid being alone.
- \_\_\_ 16. I try to participate in group activities.

For each of the next group of statements, choose one of the following answers. 1) most people, 2) many people, 3) some people, 4) a few people, 5) one or two people, 6) nobody.

- \_\_\_ 17. I try to be friendly to people.
- \_\_\_ 18. I let other people decide what to do.
- \_\_\_ 19. My personal relations with people are cool and distant.
- \_\_\_ 20. I let other people take charge of things.

- \_\_\_21. I try to have close relationships with people.
- \_\_\_22. I let other people strongly influence my actions.
- \_\_\_23. I try to get close and personal with people.
- \_\_\_24. I let other people control my actions.
- \_\_\_25. I act cool and distant with people.
- \_\_\_26. I am easily led by people.
- \_\_\_27. I try to have close, personal relationships with people.

For each of the next group of statements, choose one of the following answers: 1) most people, 2) many people, 3) some people, 4) a few people, 5) one or two people, 6) nobody.

- \_\_\_28. I like people to invite me to things.
- \_\_\_29. I like people to act close and personal with me.
- \_\_\_30. I try to influence strongly other people's actions.
- \_\_\_31. I like people to invite me to join them in their activities.
- \_\_\_32. I like people to act close toward me.
- \_\_\_33. I try to take charge of things when I am with people.
- \_\_\_34. I like people to include me in their activities.
- \_\_\_35. I like people to act cool and distant toward me.
- \_\_\_36. I try to have other people do things the way I want them done.
- \_\_\_37. I like people to ask me to participate in their activities.
- \_\_\_38. I like people to act friendly toward me.
- \_\_\_39. I like people to invite me to participate in their activities.
- \_\_\_40. I like people to act distant toward me.

For each of the next group of statements, choose one of the following answers: 1) usually, 2) often, 3) sometimes, 4) occasionally, 5) rarely, 6) never.

- \_\_\_41. I try to be the dominant person when I am with people.

- \_\_\_42. I like people to invite me to things.
- \_\_\_43. I like people to act close toward me.
- \_\_\_44. I try to have other people do things I want done.
- \_\_\_45. I like people to invite me to join their activities.
- \_\_\_46. I like people to act cool and distant toward me.
- \_\_\_47. I try to influence strongly other people's actions.
- \_\_\_48. I like people to include me in their activities.
- \_\_\_49. I like people to act close and personal with me.
- \_\_\_50. I try to take charge of things when I'm with people.
- \_\_\_51. I like people to invite me to participate in their activities.
- \_\_\_52. I like people to act distant toward me.
- \_\_\_53. I try to have other people do things the way I want them done.
- \_\_\_54. I take charge of things when I'm with people.

APPENDIX B  
Revised FIRO-B Pretest

Name \_\_\_\_\_  
Date \_\_\_\_\_

For each statement below, decide which of the following answers best applies to you. Place the number of the answer in the box at the left of the statement. Please be as honest as you can. 1) Usually, 2) Often, 3) Sometimes, 4) Occasionally, 5) Rarely, or 6) Never.

- \_\_\_ 1. I will try to be with people from this group.
- \_\_\_ 2. I will let other people in this group decide what to do.
- \_\_\_ 3. I will join social groups formed from this group.
- \_\_\_ 4. I will try to have close relationships with people in this group.
- \_\_\_ 5. I will tend to join social organizations formed from this group when I have an opportunity.
- \_\_\_ 6. I will let other people in this group strongly influence my actions.
- \_\_\_ 7. I will try to be included in this group's informal social activities.
- \_\_\_ 8. I will try to have close, personal relationships with people in this group.
- \_\_\_ 9. I will try to include other people in this group in my plans.
- \_\_\_ 10. I will let other people in this group control my actions.
- \_\_\_ 11. I will try to have people from this group around me.
- \_\_\_ 12. I will try to get close and personal with people in this group.
- \_\_\_ 13. When people in this group are doing things together I will tend to join them.
- \_\_\_ 14. I will be easily led by people in this group.
- \_\_\_ 15. I will try to avoid being alone in this group.
- \_\_\_ 16. I will try to participate in this group's activities.

For each of the next group of statements, choose one of the following answers: 1) Most people, 2) Many people, 3) Some people, 4) A few people, 5) one or two people or 6) Nobody.

- \_\_\_ 17. I will try to be friendly with people in this group.

- \_\_\_18. I will let other people in this group decide what to do.
- \_\_\_19. My personal relations with people in this group will be cool and distant.
- \_\_\_20. I will let other people in this group take charge of things.
- \_\_\_21. I will try to have close relationships with people in this group.
- \_\_\_22. I will let other people in this group strongly influence my actions.
- \_\_\_23. I will try to get close and personal with people in this group.
- \_\_\_24. I will let other people in this group control my actions.
- \_\_\_25. I will act cool and distant with people in this group.
- \_\_\_26. I will be easily led by people in this group.
- \_\_\_27. I will try to have close, personal relationships with people in this group.

For each of the next group of statements, choose one of the following answers: 1) Most people, 2) Many people, 3) Some people, 4) A few people, 5) one or two people, or 6) Nobody.

- \_\_\_28. I will like people in this group to invite me to things.
- \_\_\_29. I will like people in this group to act close and personal with me.
- \_\_\_30. I will try to influence strongly other group member's actions.
- \_\_\_31. I will like people in this group to invite me to join them in their activities.
- \_\_\_32. I will like people in this group to act close toward me.
- \_\_\_33. I will try to take charge of things when I am with people in this group.
- \_\_\_34. I will like people in this group to include me in their activities.
- \_\_\_35. I will like people to act cool and distant toward me.. (people in this group)

- \_\_\_36. I will try to have other people in this group do things the way I want them done.
- \_\_\_37. I will like people in this group to ask me to participate in their activities.
- \_\_\_38. I will like people in this group to act friendly toward me.
- \_\_\_39. I will like people in this group to invite me to participate in their activities.
- \_\_\_40. I will like people in this group to act distant toward me.

For each of the next group of statements, choose one of the following answers: 1) Usually, 2) Often, 3) Sometimes, 4) Occasionally, 5) Rarely, or 6) Never.

- \_\_\_41. I will try to be the dominant person when I am with people in this group.
- \_\_\_42. I will like people in this group to invite me to things.
- \_\_\_43. I will like people in this group to act close toward me.
- \_\_\_44. I will try to have other people in this group do things I want done.
- \_\_\_45. I will like people in this group to invite me to join in their activities.
- \_\_\_46. I will like people in this group to act cool and distant toward me.
- \_\_\_47. I will try to influence strongly other people's actions in this group.
- \_\_\_48. I will like people in this group to include me in their activities.
- \_\_\_49. I will like people in this group to act close and personal with me.
- \_\_\_50. I will try to take charge of things when I am with people in this group.
- \_\_\_51. I will like people in this group to invite me to participate in their activities.
- \_\_\_52. I will like people in this group to act distant toward me.

- \_\_\_53. I will try to have other people in this group do things the way I want them done.
- \_\_\_54. I will take charge of things when I am with people in this group.

APPENDIX C  
Revised FIRO-B Posttest

Name \_\_\_\_\_  
 Group \_\_\_\_\_

For each of the statements below, decide which of the following answers best applies to you. Place the number of the answer in the box at the left of the statement. Please be as honest as you can. 1) Usually, 2) Often, 3) Sometimes, 4) Occasionally, 5) Rarely, or 6) Never.

- \_\_\_ 1. I have tried to be with people from this group.
- \_\_\_ 2. I have let other people in this group decide what to do.
- \_\_\_ 3. I have joined social groups formed from this group.
- \_\_\_ 4. I have tried to have close relationships with people in this group.
- \_\_\_ 5. I tended to join social organizations formed from this group when I had an opportunity.
- \_\_\_ 6. I have let other people in this group strongly influence my actions.
- \_\_\_ 7. I have tried to be included in this group's informal social activities.
- \_\_\_ 8. I have tried to have close, personal relationships with people in this group.
- \_\_\_ 9. I have tried to include other people in this group in my plans.
- \_\_\_ 10. I have let other people in this group control my actions.
- \_\_\_ 11. I have tried to have people from this group around me.
- \_\_\_ 12. I have tried to get close and personal with people in this group.
- \_\_\_ 13. When people in this group were doing things together I have tended to join them.
- \_\_\_ 14. I have been easily led by people in this group.
- \_\_\_ 15. I have tried to avoid being alone in this group.
- \_\_\_ 16. I have tried to participate in this group's activities.

For each of the next group of statements, choose one of the following answers: 1) Most people, 2) Many people, 3) Some people, 4) A few people, 5) One or two people, or 6) Nobody.

- \_\_\_17. I have tried to be friendly with people in this group.
- \_\_\_18. I have let other people in this group decide what to do.
- \_\_\_19. My personal relations with people in this group have been cool and distant.
- \_\_\_20. I have let other people in this group take charge of things.
- \_\_\_21. I have tried to have close relationships with people in this group.
- \_\_\_22. I have let other people in this group strongly influence my actions.
- \_\_\_23. I have tried to get close and personal with people in this group.
- \_\_\_24. I have let other people in this group control my actions.
- \_\_\_25. I have acted cool and distant with people in this group.
- \_\_\_26. I have been easily led by people in this group.
- \_\_\_27. I have tried to have close, personal relationships with people in this group.

For each of the next group of statements, choose one of the following answers. 1) Most people, 2) many people, 3) Some people, 4) A few people, 5) One or two people, or 6) Nobody.

- \_\_\_28. I have liked people in this group to invite me to things.
- \_\_\_29. I have liked people in this group to act close and personal with me.
- \_\_\_30. I have tried to influence strongly other group member's actions.
- \_\_\_31. I have liked people in this group to invite me to join them in their activities.
- \_\_\_32. I have liked people in this group to act close toward me.
- \_\_\_33. I have tried to take charge of things when I was with people in this group.
- \_\_\_34. I have liked people in this group to include me in their activities.

- \_\_\_35. I have liked people in this group to act cool and distant toward me.
- \_\_\_36. I have tried to have other people in this group do things the way I want them done.
- \_\_\_37. I have liked people to ask me to participate in their activities (People in this group).
- \_\_\_38. I have liked people in this group to act friendly toward me.
- \_\_\_39. I have liked people in this group to invite me to participate in their activities.
- \_\_\_40. I have liked people in this group to act distant toward me.

For each of the next group of statements, choose one of the following answers: 1) Usually, 2) Often, 3) Sometimes, 4) Occasionally, 5) Rarely, 6) Never

- \_\_\_41. I have tried to be the dominant person when I have been with people in this group.
- \_\_\_42. I have liked people in this group to invite me to things.
- \_\_\_43. I have liked people in this group to act close toward me.
- \_\_\_44. I have tried to have other people in this group do things I wanted done.
- \_\_\_45. I have liked people in this group to invite me to join in their activities.
- \_\_\_46. I have liked people in this group to act cool and distant toward me.
- \_\_\_47. I have tried to influence strongly other people's actions in this group.
- \_\_\_48. I have liked people in this group to include me in their activities.
- \_\_\_49. I have liked people in this group to act close and personal with me.
- \_\_\_50. I have tried to take charge of things when I have been with people in this group.
- \_\_\_51. I have liked people in this group to invite me to participate in their activities.

- \_\_\_52. I have liked people to act distant toward me in this group.
- \_\_\_53. I have tried to have other people do things the way I have wanted them done in this group.
- \_\_\_54. I have taken charge of things when I have been with people in this group.

APPENDIX D  
SCORING KEY FOR FIRO-B FORMS

FIRO-B  
SCORING SHEET

Instructions: Put an "x" in front of each item scored as indicated. For each column add the X's to obtain scores for FT, FC, FA, WT, WC, WA.

	<u>Inclusion</u>		<u>Control</u>		<u>Affection</u>	
	Item	Scores	Item	Scores	Item	Scores
E	1.	1,2,3	30.	1,2,3	4.	1,2
X	3.	1,2,3,4	33.	1,2,3	8.	1,2
P	5.	1,2,3,4	44.	1,2,3	17.	1,2
R	7.	1,2,3	47.	1,2,3	21.	1,2
E	9.	1,2	41.	1,2,3,4	23.	1,2
S	11.	1,2	36.	1,2	27.	1,2
S	13.	1,2	50.	1,2	19.	4,5,6
E	15.	1	53.	1,2	25.	4,5,6
S	16.	1	54.	1,2	12.	1

	<u>Inclusion</u>		<u>Control</u>		<u>Affection</u>	
	Item	Scores	Item	Scores	Item	Scores
W	28.	1,2	2.	1,2,3,4	29.	1,2
A	31.	1,2	6.	1,2,3,4	32.	1,2
N	34.	1,2	22.	1,2,3,4	28.	1,2
T	42.	1,2	18.	1,2,3,4	43.	1
S	45.	1,2	20.	1,2,3,4	46.	5,6
	48.	1,2	10.	1,2,3	35.	5,6
	51.	1,2	14.	1,2,3	40.	5,6
	37.	1	24.	1,2,3	52.	5,6
	39.	1	26.	1,2,3	49.	1,2

HIGH = 7-9  
MEDIUM = 3-6  
LOW = 0-2

APPENDIX E  
Giffin's (1968) Trust Differential  
(GTD - Form E)

## GTD--Form E (For Individuals or Groups)

The purpose of this questionnaire is to determine your attitude toward a specific other person or the members of a specified group. Fill out all of the following items with this one person or group in mind (as instructed by the person in charge).

On the following pages you will find a series of bipolar scales. You are to describe the person (or group) in terms of intervals on these scales. Please make your responses in terms of what these scales mean to you.

Here is how you are to use these scales:

If you feel that the person (or group) you are describing is very closely related to one end of the scale, you should place your check mark as follows:

fair: x : \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ . \_\_\_ . unfair

If you feel that this person (or group) seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check as follows:

strong: \_\_\_ : x : \_\_\_ : \_\_\_ . \_\_\_ : \_\_\_ : \_\_\_ : weak

If this person (or group) seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check as follows:

active: \_\_\_ : \_\_\_ : \_\_\_ : \_\_\_ : x : \_\_\_ : \_\_\_ . passive

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the person (or group) you're judging. If you consider the person (or group) to be neutral on the scale, both sides of the scale equally associated with the concept, then you should place your check mark in the middle interval.

safe. \_\_\_ : \_\_\_ : \_\_\_ . x . \_\_\_ : \_\_\_ . \_\_\_ . dangerous

IMPORTANT: (1) Place your check marks in the middle of spaces, not on the boundaries

this    not this  
\_\_\_ : \_\_\_ : \_\_\_ : x . x : \_\_\_ : \_\_\_ .

- (2) Be sure you check every scale--do not omit any.  
(3) Never put more than one check mark on a single scale.

Work at fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impression, the immediate "feelings" about the items, that we want. On the other hand, please do not be careless, because we want your true impressions.

SCHOLARLY	___:___:___:___:___:___:___:	UNSCHOLARLY
DISRESPECTFUL	___:___:___:___:___:___:___:	RESPECTFUL
UNKNOWLEDGEABLE	___:___:___:___:___:___:___:	KNOWLEDGEABLE
KIND	___:___:___:___:___:___:___:	CRUEL
EMPHATIC	___:___:___:___:___:___:___:	HESITANT
PASSIVE	___:___:___:___:___:___:___:	ACTIVE
FAST	___:___:___:___:___:___:___:	SLOW
MEEK	___:___:___:___:___:___:___:	AGGRESSIVE
EXPERT	___:___:___:___:___:___:___:	IGNORANT
BOLD	___:___:___:___:___:___:___:	TIMID
DISHONEST	___:___:___:___:___:___:___:	HONEST
AGGRESSIVE	___:___:___:___:___:___:___:	UNAGGRESSIVE
UNINFORMED	___:___:___:___:___:___:___:	INFORMED
TRAINED	___:___:___:___:___:___:___:	UNTRAINED
GOOD	___:___:___:___:___:___:___:	BAD
INEXPERIENCED	___:___:___:___:___:___:___:	EXPERIENCED
EDUCATED	___:___:___:___:___:___:___:	UNEDUCATED
INTROVERTED	___:___:___:___:___:___:___:	EXTROVERTED
ENERGETIC	___:___:___:___:___:___:___:	TIRED
SELFISH	___:___:___:___:___:___:___:	UNSELFISH
SINCERE	___:___:___:___:___:___:___:	INSINCERE
IMMORAL	___:___:___:___:___:___:___:	MORAL
PATIENT	___:___:___:___:___:___:___:	IMPATIENT
INTELLIGENT	___:___:___:___:___:___:___:	UNINTELLIGENT
ILLOGICAL	___:___:___:___:___:___:___:	LOGICAL
AWFUL	___:___:___:___:___:___:___:	NICE
RESERVED	___:___:___:___:___:___:___:	FRANK

APPENDIX F  
Scoring Key for Giffin Trust Differential  
(GTD-Form E)

SCORING KEY FOR  
GIFFIN TRUST DIFFERENTIAL (GTD-Form E)

The following nine items are collected to score the factor of expertness and are tallied as indicated:

1. Scholarly - Unscholarly (7,6,5,4,3,2,1).
3. Unknowledgeable - Knowledgeable (1,2,3,4,5,6,7).
9. Expert - Ignorant (7,6,5,4,3,2,1).
13. Uninformed - Informed (1,2,3,4,5,6,7).
14. Trained - Untrained (7,6,5,4,3,2,1).
16. Inexperienced - Experienced (1,2,3,4,5,6,7).
17. Educated - Uneducated (7,6,5,4,3,2,1).
24. Intelligent - Unintelligent (7,6,5,4,3,2,1).
25. Illogical - Logical (1,2,3,4,5,6,7).

The following nine items are collected to score the factor of character (reliability plus intentions) and are tallied as indicated:

2. Disrespectful - Respectful (1,2,3,4,5,6,7).
4. Kind - Cruel (7,6,5,4,3,2,1).
11. Dishonest - Honest (1,2,3,4,5,6,7).
15. Good - Bad (7,6,5,4,3,2,1).
20. Selfish - Unselfish (1,2,3,4,5,6,7).
21. Sincere - Insincere (7,6,5,4,3,2,1).
22. Immoral - Moral (1,2,3,4,5,6,7).
23. Patient - Impatient (7,6,5,4,3,2,1).
26. Awful - Nice (1,2,3,4,5,6,7).

The following nine items are collected to score the factor of dynamism (activeness and frankness) and are tallied as indicated:

5. Emphatic - Hesitant (7,6,5,4,3,2,1).
6. Passive - Active (1,2,3,4,5,6,7).
7. Fast - Slow (7,6,5,4,3,2,1).
8. Meek - Aggressive (1,2,3,4,5,6,7).
10. Bold - Timid (7,6,5,4,3,2,1).
12. Aggressive - Unaggressive (7,6,5,4,3,2,1).
18. Introverted - Extroverted (1,2,3,4,5,6,7).
19. Energetic - Tired (7,6,5,4,3,2,1).
27. Reserved - Frank (1,2,3,4,5,6,7).

APPENDIX G

Giffin and Patton's (1973)

Evaluation of Problem-Solving Behavior Form

## A Rating Scale of Problem Solving Behavior

Instructions: On each bipolar scale indicate the degree to which your group (as you see it) accomplishes each identified behavior. Use this scale as a conceptual system for evaluation:

Poor	Fair	Average	Good	Excellent
1	2	3	4	5

Circle the appropriate evaluative code-number in front of each item of behavior. For example, if you believed that the appropriate response to item #1 should be "poor" or "2", it should be circled as this example:

1 ② 3 4 5 (1) We are careful to identify mutual concerns of members.

Please respond to all of the following items:

- 1 2 3 4 5 (2) This concern is identified before the problem is analyzed.
- 1 2 3 4 5 (3) If members differ in degree of concern, an effort is made to identify complementary concerns.
- 1 2 3 4 5 (4) If complementary concerns are not found, superordinate goals are sought.
- 1 2 3 4 5 (5) In problem analysis, existing conditions are carefully compared with the specific condition desired.
- 1 2 3 4 5 (6) Both impelling and constraining forces are carefully identified for an identified problem condition.
- 1 2 3 4 5 (7) The desired condition (goal) is carefully specified when a problem is analyzed.
- 1 2 3 4 5 (8) Relevant, valid information is secured when needed.
- 1 2 3 4 5 (9) Various possible solutions or approaches are carefully identified.
- 1 2 3 4 5 (10) Creativity is achieved in seeking to identify all possible approaches.
- 1 2 3 4 5 (11) Criteria for evaluating various proposed solutions are clearly identified.

- 1 2 3 4 5 (12) Reasonable predictions are made regarding the effectiveness of each proposed approach.
- 1 2 3 4 5 (13) Agreement on the most desirable solution to an identified problem is achieved.
- 1 2 3 4 5 (14) A detailed plan of action is developed once a problem-solution has been chosen.
- 1 2 3 4 5 (15) When resources not controlled by our group are required, the attitudes of persons controlling these resources are assessed.
- 1 2 3 4 5 (16) Members of our group effectively employ techniques of advocacy in mobilizing required resources controlled by persons outside of our group.

APPENDIX H  
National Aeronautics & Space  
Administration Exercise (NASA)

Name \_\_\_\_\_  
 Group \_\_\_\_\_

D E C I S I O N F O R M

Instructions: You are a space crew originally scheduled to rendezvous with a mother ship on the lighted surface of the moon. Due to mechanical difficulties, however, your ship was forced to land at a spot some 200 miles from the rendezvous point. During re-entry and landing, much of the equipment aboard was damaged and, since survival depends on reaching the mother ship, the most critical items available must be chosen for the 200 mile trip. Below are listed the 15 items left intact and undamaged after landing. Your task is to rank order them in terms of their importance in allowing your crew to reach the rendezvous point. Place the number 1 by the most important item, the number 2 by the second most important, and so on through 15, the least important.

- \_\_\_\_\_ Box of matches
- \_\_\_\_\_ Food concentrate
- \_\_\_\_\_ 50 feet of mylon rope
- \_\_\_\_\_ Parachute silk
- \_\_\_\_\_ Portable heating unit
- \_\_\_\_\_ Two .45 calibre pistols
- \_\_\_\_\_ One case of dehydrated Pet Milk
- \_\_\_\_\_ Two 100 lbs. tanks of oxygen
- \_\_\_\_\_ Stellar map (of the moon's constellation)
- \_\_\_\_\_ Life raft
- \_\_\_\_\_ Magnetic compass
- \_\_\_\_\_ 5 gallons of water
- \_\_\_\_\_ Signal flares
- \_\_\_\_\_ First aid kit containing injection needles
- \_\_\_\_\_ Solar-powered FM receiver-transmitter

APPENDIX I  
Scoring Key for  
National Aeronautics & Space  
Administration Exercise (NASA)

## K E Y

Instructions. You are a member of a space crew originally scheduled to rendezvous with a mother ship on the lighted surface of the moon. Due to mechanical difficulties, however, your ship was forced to land at a spot some 200 miles from the rendezvous point. During re-entry and landing, much of the equipment aboard was damaged and, since survival depends on reaching the mother ship, the most critical items available must be chosen for the 200 mile trip. Below are listed the 15 items left intact and undamaged after landing. Your task is to rank order them in terms of their importance for your crew in allowing them to reach the rendezvous point. Place the number 1 by the most important item, the number 2 by the second most important, and so on through number 15, the least important.

Little or no use on moon	<u>15</u>	Box of matches
Supply daily food required	<u>4</u>	Food concentrate
Useful in tying injured together, help in climbing	<u>6</u>	50 feet of nylon rope
Shelter against sun's rays	<u>8</u>	Parachute silk
Useful only if party landed on dark side	<u>13</u>	Portable heating unit
Self-propulsion devices could be made from them	<u>11</u>	Two .45 calibre pistols
Food, mixed with water for drinking	<u>12</u>	One case dehydrated Pet Milk
Fills respirations requirement	<u>1</u>	Two 100 lb. tanks of oxygen
One of principle means of finding directions	<u>3</u>	Stellar map (of the moon's constellation)
CO2 bottles for self-propulsion across chasms, etc.	<u>9</u>	Life raft
Probably no magnetized poles, thus useless	<u>14</u>	Magnetic compass
Replenishes loss by sweating, etc.	<u>2</u>	5 gallons of water
Distress call when line of sight possible	<u>10</u>	Signal Flares
Oral pills or injection medicine valuable	<u>7</u>	First aid kit containing injection needles
Distress signal transmitter, possible communication with mother ship	<u>5</u>	Solar-powered FM receiver-transmitter

APPENDIX J  
National Aeronautics Space  
Administration (NASA) Information Card

## CARD #1

The lighted side of the moon's surface is of such great heat that some form of protection may be needed against the sun's rays. The dark side of the moon is so cold that some form of heat may be needed to sustain life.

DO NOT SHOW THIS CARD TO ANY OTHER GROUP MEMBER.

SOME GROUP MEMBERS HAVE ALSO RECEIVED FALSE INFORMATION.

## CARD #2

Often times people get injured while traveling on the moon's surface and it is necessary to give them some form of aid. However, the equipment that astronauts use makes it very difficult to give much substantial aid, but there is still a need to make sure that some form of minimum aid is available.

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## CARD #3

Because the moon has no oxygen, it is impossible to use devices which require oxygen. However, the type of flares that are used by the astronauts are made to be able to be used on surfaces where there is no air, but these flares have a very limited range to them and are not able to be seen from very far away.

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## CARD #4

In order to travel on the moon, it may be necessary to use devices that are capable of propelling one through the air. The most useful device for accomplishing this goal appears to involve items that either create some form of explosion or some form of jet spray.

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## CARD #5

The nature of the moon is different from that of earth. In addition to having a lack of oxygen, there appears to be differences in the force field that exists on the moon. It is highly doubtful if there exists any kind of magnetized poles for the moon.

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## CARD #6 (Distributed in 6-member groups)

The lighted side of the moon's surface is of such great heat that some form of protection may be needed against the sun's rays. The dark side of the moon is so cold that some form of heat may be needed to sustain life.

DO NOT SHOW THIS CARD TO ANY OTHER GROUP MEMBER.

SOME GROUP MEMBERS HAVE ALSO RECEIVED FALSE INFORMATION.

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