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ABSTRACT

This paper provides information concerning black and white leaders use of the Bales categories in laboratory and field settings. Leaders' initiations were collapsed into four variables: positive social emotional, directive, non directive, and negative social emotional acts. These initiations then were recorded as being directed to the leaders themselves, all group members, or individual group members. Separate analyses were run for the laboratory and field phases of the study and then the analyses were compared to discern whether differences discovered in the laboratory setting also occurred within the field setting.

Results indicate that more differences arose within leader classifications than between leaders of different races. These differences occurred mainly in the leaders comments to individuals within their group rather than to themselves or the group en toto. These differences did not arise because leaders differentiated their comments to their group members based upon racial lines. Differences which occurred in the laboratory setting tended to persist in the field setting.

Recent research conducted with biracial groups indicates that previous stereotypes which depicted large attitudinal and behavioral differences between blacks and whites may have either overexaggerated these differences or been rendered less operative due to the vast changes which have occurred in our society in the last ten years. The impact of these changes have been especially strong on young blacks and whites. Many young whites have become increasingly aware of the inequities suffered by blacks and have taken some initial, although limited steps, to rectify them. Many young blacks, on the other hand, have acquired a growing sense of pride and an increased awareness of the opportunities for achievement which exist in our society. The combination of these two trends, coupled with an increased emphasis on the enforcement of equal opportunity legislation, may account for the fact that recent studies have shown few attitudinal and behavioral differences between blacks and whites especially when social class differences have been less evident (Hill, Fox, and Ruhe, 1972; Hill and Ruhe, 1972a; Hill and Ruhe, 1972b; and Fox, Sykes, and Graham, 1973). Although more research is necessary to substantiate this trend, it may be more realistic to operate with "no difference" rather than directional hypotheses in studying biracial attitudes and behaviors, especially among younger blacks and whites of comparable socioeconomic class.

Although Hill and Ruhe (1972b) have shown that there are no differences in the frequencies with which black and white leaders in ad hoc student groups used the various Bales Interaction Process Analysis (IPA) categories, previous research has not investigated the extent to which these comments have been differentially directed to group members of the same or opposite race. It is possible that racially mixed groups develop informal coalitions along racial lines and that leaders of both races treat members of their own race more favorably than members of the opposite race. Thus, leaders of one race may emit more positive social emotional comments and behave more in a nondirective manner toward group members of the same race while at the same time emit more negative social emotional comments and act more directively to members of

the opposite race.

The purpose of this paper is to test a series of "no difference" hypotheses concerning black and white leaders' usage of the positive social emotional, directive, nondirective, and negative social emotional categories of Bales' IPA when they are in charge of groups of varying size and racial composition performing structured and unstructured tasks in both laboratory and field settings. Since the possibility of coalitions forming and influencing member behavior in small groups has been well documented, this paper will begin by summarizing the coalition literature to set forth previously established bases for such alignments and to determine what part, if any, race has played in coalition formation. The methodology, method of analysis, results, and implications of this study will then be set forth.

LITERATURE REVIEW

Although the examination of coalition behavior has a rich tradition particularly in historical descriptions of European governmental processes (Duverger, 1954; Leites, 1959), most of the modern investigations have their origins either in the social psychological and sociological descriptions emanating largely from the work of Simmel (1908), or in the mathematical fields generally following the precepts of von Neumann and Morgenstern (1944). Actual studies of coalition behavior have their bases in descriptive field studies, small group experimentations, and various types of simulation exercises. They have focused on the study of coalition formation as an end product, the bargaining which occurs in the process of such formation, the actual distribution of payoffs in a completed coalition, coalition maintenance (Kelley, 1968), and the consequences of the resulting structure on social phenomena, such as the personalities of the members and the products of the group (Borgatta and Borgatta, 1963).

These studies have typically focused on one of the following areas: Domestic or foreign national politics (Downs, 1957; Groennings, Kelley, and Leiserson, 1970; Key, 1958; Luce and Rogow, 1956; Riker, 1962; Selznick, 1949; Truman, 1951), international behavior (Duetsch, 1954; Groennings, Kelley, and Leiserson, 1970; Guetzkow et al., 1963; Kaplan, 1957; Zinnes, 1966), economic market behavior (Loescher, 1970; Shubik, 1959), or small group behavior (Borgatta and Borgatta, 1963; Caplow, 1956, 1968; Chertkoff, 1966, 1967, 1971; Gamson, 1961a, 1961b; Kelley and Arrowood, 1960; Mills, 1953, 1954, Stryker and Psathas, 1960).

In addition, several organizational theorists have described complex organizational functioning in terms of coalitions (Barnard, 1938; Caplow, 1964; Cyert and March, 1963; Hill, 1969; March and Simon, 1958). Other authors have used a coalition framework to study the extension of parental perceptions by female delinquents onto adults (Worst, Van Sickle, and McDaniel, 1969), family decision-making

(Strodtbeck, 1954), and the symbolic environment as a parameter for coalition formation.

Experimental small group research has centered primarily on triadic groupings. Indeed, Caplow (1968) has stated that triads are the building blocks from which all social organizations are constructed and Hill (1967) has shown how this belief can be applied to complex organizations. Some studies also have utilized four-person (Shears, 1967; Willis, 1962), five-person (Burris and Frye, 1966; Gamson, 1961b) and even nine-person (Schubert, 1964) groups to study the coalition phenomenon.

COALITION DEFINED

The term coalition has been used in many ways: One usage centers around the mutuality of affective support (Mills, 1953; Bales, 1970); another involves action in accord with a common goal (Borgatta, 1961; Borgatta and Borgatta, 1963); and still others require two or more persons acting jointly to affect the outcome of a decision (Gamson, 1964; Thibaut and Kelley, 1959). Bales (1970) in his spatial model of group structure postulated that each person would like others to perceive, feel, think, act, and evaluate as he himself does.

A coalition has thus come to mean a kind of "collective actor" (Emerson, 1962). If one does not have sufficient power himself, to effect a desired outcome, then he may gain this power to some extent by attaching himself to someone else whose value orientations coincide in part with his own. Such members may be said to constitute, a coalition. It is assumed that an individual will desire to form a coalition with others as close to his value orientations as possible.

Coalitions can thus be viewed as originating through a series of events through which individuals join together to seek their personal aims when such objectives can not be achieved as effectively through unilateral action. Coalitions are omnipresent and thus can be found in places where conventional thinking would not lead one to expect them (Groennings, Kelley, and Leiserson, 1970).

PARTNER CHOICE AND BEHAVIOR

Although various theories have evolved, none has been universally successful in explaining all the empirical evidence gathered concerning partner choice and behavior. Earlier research revealed that the following factors affect the choice of coalition partners: the resources contributed to the coalition (Caplow, 1956; Curry, 1972; Riker, 1962; Gamson, 1961a, Kelley and Arrowood, 1960; Vinacke and Ackoff, 1957), the sex of the participants (Bond and Vinacke, 1961; Burris and Frye, 1966; Chaney and Vinacke, 1960), subjective probability of success (Chertkoff, 1966; Willis, 1962), perception of similarity (Trost, 1965), equality of resources (Willis, 1969), perceived support and upward mobility (Michener and Lyons, 1972), and talkativeness (Kalisch et al;, 1954). In addition to resource contribution, Curry (1972) has posited four other classes of variables as crucial to coalition formation: the legitimacy of coalescing, the characteristics of the partner, the communication of intent to coalesce, and the rewards-and-costs to the individual.

Factors affecting the dynamics of coalitional behavior include: the age of the participants (Vinacke and Gullickson, 1964), achievement and nurturance (Amidjaja and Vinacke, 1965; Chaney and Vinacke, 1960), psychological need (Phillips, Aronoff, and Messe, 1971), coalition strength (Michener and Lawler, 1971; Michener and Zeller, 1972), equity (Overstreet, 1972; Wahba, 1971), pre-coalition payoff negotiation (Kline, 1969) situational strategies (Caplow, 1959), and volume of communication and rate of socio-emotional support (Turk and Turk, 1962).

Vinacke (1969), drawing from experimental studies of gaming which concentrated on dyads rather than triads or larger groups mentioned the following variables as important for the understanding of gaming behavior.

Task variables - matrix variations, mode of presentation, length of run, threat, and power relationships.

Situational variables - strategy variations, instructions, feedback and communication, character of opponent, and reward.

Personality variables - general differences between subjects (sex, age, class, race, culture), family background, psychopathology, attitudes and traits, and motives.

Since Vinacke did not concentrate on coalitional behavior alone, we can only suggest that some of the variables may come into play in the coalition situation.

It is noteworthy that not one study could be found where the race of the subject was a variable investigated in a coalition situation. However, several studies involving two-person games were found which have dealt with race as a variable (Baxter, 1973; Harford and Cutter, 1966; Hatton, 1967; Rice and White, 1964; Sampson and Kardush, 1965). The results of these studies strongly suggest that race also would be a salient factor in coalition formation.

THEORETICAL APPROACH TO STUDYING COALITION SITUATIONS

The basis for claiming the existence of a coalition situation within small group research can be divided into two streams of thought. The more mathematically based approach is best captured by Gamson's (1961a) view of a "full-fledged coalition situation. He states that a full-fledged coalition situation is one in which the following conditions are present:

> (1) There is a decision to be made and there are more than two social units attempting to maximize their share of the payoffs.
>
> (2) No single alternative will maximize the payoff to all participants.
>
> (3) No participant has dictatorial powers, i.e., no one has initial resources sufficient to control the decision by himself.
>
> (4) No participant has veto power, i.e., no member must be included in every winning coalition.

Thus, a full-fledged coalition situation is an essential game (Luce and Raiffa, 1957). To predict who will join with whom in any specific instance, this approach

requires information on the initial distribution of relevant resources and the payoff for each coalition.

Work in this stream centers around game-theoretic approaches. For extensive information concerning use of experimental gaming in the study of social interaction see Vinacke (1969) and Guyer and Perkel (1972). The popularity of this approach lies in the fact that it provides a well-defined, highly structured laboratory task that gives the social scientist simple quantitative dependent variables with which to work. The assumption is that a systematic investigation of the factors affecting the model will aid in understanding the real-world processes.

The other stream of thought is explicated by Borgatta and Borgatta (1963), who feel that the decisions considered by Gamson's (1961a) statement of a full fledged coalition situation are not the individual's component social acts, but his global decisions, where payoffs are translated most generally into power and economic equivalences. These authors believe that it is possible to make the statement fit every unit of social interaction if one simple assumption is made: i.e., in each social act the actor has some concern with his position relative to the others, and that any such concern is properly conceived as an element of "payoff". They further believe that much of the "goal" orientation or payoff of social behavior is not clear cut and suggest that the field of study can profit from systematic observation as well as experimental manipulation. The definition of a coalition suggested by the Borgattas, and cited earlier in this paper, requires identification of action in accord with a "common goal" as well as identification of the unit of "action in accord". The judgment of whether a coalition exists over time depends either on persistent action in accord or the tendency for a given coalition to recur. While both streams of thought have made significant contributions to our understanding of the dynamics of small group behavior, and thus deserve careful consideration,

we suggest that what constitutes a coalition situation is equivocally defined and subject to a wide range of interpretation.

THE DECISIONAL EMPHASIS

Most of the experimental work in the area of coalitional behavior falls within a semi-mathematical framework which we choose to call the decisional emphasis. Almost all of our discussion in this section is based on Gamson's (1964) literature review.

Schelling (1958) classified two-person games of strategy into (1) pure coordination games (2) pure conflict (or zero-sum) games, and (3) mixed motive games. Pure coordination games are distinguished by the existence of an available solution which maximizes the return for all players. Pure conflict games are characterized by the fact that no player can gain more by forming a coalition than he can by playing the game by himself. Mixed-motive games, on the other hand, are distinguished by elements of both conflict and coordination since no outcome exists that will maximize the return to every player, and for at least two of the players, there exists a possible outcome where they will do better by combining resources than by acting individually. Gamson took Schelling's classification and translated it into situations involving more than two persons. On this basis, he then precisely defined a coalition as the joint use of resources to determine the outcome of a decision in a mixed-motive situation involving more than two units (persons). Within this definitional framework, Gamson has outlined various coalition formation theories and examined how well each is supported by empirical evidence. Since, in many cases, the theories would make different predictions, positive evidence for one must be interpreted as negative evidence for others.

THE MINIMUM RESOURCE THEORY

According to the minimum resource theory (Gamson, 1961a), a coalition will

form where the total resources are as small as possible while still being sufficient to determine the outcome of the decision. This is in keeping with Riker's (1962) "size principle". The minimum resource principle is applicable to groups of any size and it does not always predict defeat for the player strongest in initial resources. Caplow (1956, 1959) focused on several different types of resource distributions among triad members with the criterion of maximizing the number of people over whom one has a resource advantage. Although Caplow's predictions are not always the same as minimum resource theory, they are quite similar.

Vinacke and Ackoff (1957) used triads to test Caplow's (1956) predictions and found that the predicted coalitions occurred far more frequently than other coalitions. Gamson (1961b) provided additional evidence in a study of five-person groups in a simulated convention situation. Resources (votes) were distributed 25-25-17-17-17. Although the 17-17-17 coalition predicted by minimum resource theory should have occurred only one time in ten, it actually occurred 33 per cent of the time. Other investigations have also provided findings consistent with this theory (Chaney and Vinacke, 1960; Lieberman, 1962; Vinacke, 1959).

THE MINIMUM POWER THEORY

The origin of minimum power theory is attributed to game theory, and the evidence which supports it must be considered evidence against minimum resource theory (Gamson, 1964). Each person is expected to demand a share of the rewards proportional to his pivotal power rather than his resources, where a pivotal power is defined as the proportion of times a person can, through his resources, change a losing coalition into a winning one. This theory implies the formation of a minimum winning coalition where size is now defined by the total pivotal power of the coalition. Shaw (1971) provides an example. Suppose A controls 10 per cent, B controls 50 per cent, and C controls 40 per cent of the resources

relevant to a given decision which requires more than 50 per cent to control. There are three possible coalitions: A + B, A + C, and B + C. The A + C coalition cannot win; hence, both A and C have pivotal power in only one winning coalition, whereas B has pivotal power in two. In this instance, the two potentially winning coalitions each have a total of three units of pivotal power. The minimum power theory would predict that one of these would form, but it could not predict which one. Minimum resource theory, on the other hand, would predict an A + B coalition.

There is little direct support for this theory. In the Gamson (1961b) experiment all players were of equal pivotal power, thus, according to this theory, there was reason to expect that the coalitions would occur with equal frequency, but they did not. Kelley and Arrowood (1960) suggest that the failure to find support for the theory is due to a lack of understanding by group members of the true power relations. An experiment by Willis (1962) on tetrados gave some evidence in favor of minimum power theory.

THE ANTICOMPETITIVE THEORY

Vinacke and his associates using primarily female subjects, provide the background for this theory (Bond and Vinacke, 1961; Chaney and Vinacke, 1960; Mesuzi and Vinacke, 1963). According to this theory, coalitions are formed along the path of least resistance in bargaining. If players in minimum power theory are trying to get as much as they can and players in minimum resource theory are trying to get as much as they deserve, players in anticompetitive theory are focusing on maintaining the social relationships in the group (Gamson, 1964). Thus, as a coalition theory, anticompetitive theory emphasizes the minimization of the disruptive aspects of bargaining; it predicts that coalitions will form where the distribution of rewards is obvious and relatively equal. This implies that such a coalition occurs among players who are about equal in resources

and pivotal power. For example, if resources are distributed 3-3-2, a 3 + 3 coalition would be predicted.

Kalisch (1954) et al. found that despite an exhortation to be selfish and competitive, players frequently took a fairly cooperative attitude. They also found a tendency to prevent consistent losers. Stryker and Psathas (1960) report that in some instances players even advised their opponents of the best strategy, even though this appeared contrary to their best-interests. The females in the Vinacke studies repeatedly attempted to transform the mixed-motive situation into a pure coordination game, which led him to characterize feminine strategy as "accommodative" and masculine strategy as "exploitative". This suggests that females adopt an anticompetitive norm and males adopt a parity norm.

THE UTTER CONFUSION THEORY

According to this theory, coalition formation is best understood as an essentially random choice process determined by chance events. The result of utter confusion is that any two-person coalition is equally probable. Using young children as subjects, Vinacke and Gullickson (1963) found in a 4-3-2 game that all coalitions occurred with about equal frequency. Gamson (1964) explains this by saying that the children were probably too bewildered much of the time to do anything other than form alliances at random. In Willis' (1962) study, the distribution of two-man coalitions is quite close to what one would expect if players were choosing at random. Kalisch et al. (1954) observed that those subjects who rolled first and loudest made a difference in the outcome.

From the above review of studies characterized by a decisional emphasis, we see the prominence of a line of thought that is strictly rational. These studies emphasize task and situation variables, in contrast to theories based on studies which emphasize perceptual, cognitive, and motivational variables (Vinacke, 1969).

THE COMPONENT ACT EMPHASIS

Less rigorous but considerably more flexible in scope and methodology are the studies which we have chosen to call component act emphasis. Studies by Mills (1953, 1954), Strodtbeck (1954), Turk and Turk (1962), and Borgatta and Borgatta (1963) fall into this category. All used an interaction process analysis (IPA) to analyze group processes although the first three utilized Bales' (1950) system and the last, a personal revision of the Bales system (Borgatta, 1962).

In Mills' (1953) study, groups of three were asked to create, from three pictures selected from the Thematic Apperception Test series, a single dramatic story upon which they all agreed. Interaction between the group members was recorded and indices of support were calculated for each pair of subjects. In a second study (Mills, 1954), two players who were actually assisting the investigator met with a naive subject to serve as a hypothetical military review court sitting on the case of Billy Budd, the character created by Melville. They were given fifty minutes to reach a group decision, and told that a unanimous decision, though preferable, was not obligatory. Again, interaction was recorded and indices of support were calculated for each pair of participants. In the earlier study, Mills reported support for Simmel's proposition that the three person group tends to segregate into a pair and a third party. In the later study, Mills summarized the results by stating two revised propositions which assume that a number of other variables, such as issue being discussed, ego involvement, and others, are held constant. These propositions are:

(1) Members of the coalition being willing, the structure is most apt to dissolve when the isolate is of a relatively high social status and has a relatively low need for self-enhancement.

(2) The structure is most apt to persist, even becoming increasingly rigid, when the isolate has relatively high social status and a strong need for self-enhancement.

In the Strodtbeck (1954) study of family decision-making, triads composed of a father, mother, and son were asked to reconcile a series of previously established disagreements. Each pair was placed in opposition to the other member an equal number of times. Tape recordings of the sessions with the family groups were scored using Bales' system and indices of support were calculated in the same manner reported by Mills. Strodtbeck developed a system for forming a "power" score and computed a mean power score for the first, second, and third most frequently speaking participants for each of Mills' four group support types (i.e., solidary, contending, dominant, and conflicting). In three of the four support types the most frequently speaking person won the largest share of the decisions and in all cases the least-speaking person won the least share. Strodtbeck concluded that, "We do not find in families the regularities in the distribution of support which Mills reported, nor do we confirm the tendency for solidary high-participating members to dominate the decision-making which Mills anticipated would materialize. We do find in families, like many other groups, decision-making power is associated with high participation. We confirm Mills' finding that when the two most active members are cooperative in their relation to one another the stability of their rank participation is high, but we do not find that when the two most active members are in conflict, the stability is as low for families as he found it to be for ad hoc groups." Gamson (1964), in commenting on Strodtbeck's study, says that even without knowing the magnitude of the resources involved, participation on the same side of an argument is sufficient justification for asserting that a coalition has been formed because it enables us to establish the direction in which resources are used. Thus, joint participation tells us the existence but not the strength of a coalition.

According To Turk and Turk (1962), three-person interaction systems have been examined from two major perspectives. The first, which originated with

Simmel (1950) and was developed by Mills (1953), Caplow (1953, 1959), Vinacke (1957, 1959) and others (Kelley and Arrowood, 1960; Strodtbeck, 1954) considers the triad as an ecological system. Here the power play - the competitive strivings and symbiotic attachments among individuals has been viewed as a source of instability which is unique to the three-person situation. The second approach, one which has been pursued by Torrance (1955), Bales and his associates (1951, 1955), and Borgatta, Couch, and Bales (1954), considers the three- person set as a collectivity which is oriented towards a common task. In this case, relationships between power and the flow of interaction are seen as aspects of hierarchical organization which are characteristic of small groups in general. In the Turk and Turk study, daily conferences of three-person nursing teams were used as examples of triadic interaction within a bureaucratic setting. Bales' system of group process examination (IPA) was used and indices of support were calculated. The research confirmed Caplow's (1953) prediction that three-person systems will be free of coalitions if the power of one member is greater than that of the other two combined. It also confirmed predictions, felt to hold true for any small group, that both the volume of communication and the rate of positive socio-emotional support between any pair of members are a function of the combined power of the pair, with the higher-powered member communicating more to the other and supporting him more.

With the expectation that coalition structures will be likely to form along the lines of pre-assessed agreement and disagreement on the basic topic of discussion, Borgatta and Borgatta (1963) classified groups as unanimous (U) or forming a coalition and an isolate (CI). They define the situation of three persons acting in accord with a common goal as one of unanimity. Triads of male students participated in three discussions of 20 minutes each. Interaction profiles were recorded using Borgatta's (1962) revision of Bales' system. The authors develop

an interesting argument concerning the question of what differences should be expected for U and CI groups, since there appears to be competing hypotheses. On the one hand, they argue that it might be expected that the interaction rate would be higher in the unanimity group since, under the condition of agreement, one might expect a fluid communication system that allows free and active communication among the members. On the other hand, the coalition condition might also be one that is associated with high activity, since disagreement provides a motive for communication of one's position. Counter to each of these suggestions are the following: In the condition of unanimity, there may be no press for communication,and in fact a condition of conversational vacuum may develop that leads to tension and awkward pauses in a situation that demands conversation according to experimental instructions. In the coalition condition, tension may develop also, along with other factors that inhibit communication, such as withdrawal of one of the members, or relegation of one to an isolated position. Thus, comparison of the unanimity condition with that of the coalition and the isolate is not one that provides the opportunity for clear cut prediction of consequences, and no prior studies (as of 1963) in the literature report findings directly on this. The literature from 1963 to date also remains silent on this issue. The results indicate more variation among groups of a given type than between U and CI groups; the differences between U and CI groups were not statistically significant. U groups showed less solidarity in interaction behavior than CI groups, the reverse of what might be expected a priori. There were no differences evident between coalition members and isolates in quality of interaction. In a study which we have chosen to define as one of decisional emphasis, Willis (1969) found "irrational" behavior displayed by his subjects, where rationality was defined in terms of the experimenter imposed objective of earning as many points for oneself as possible in a game of chance utilizing like-sexed triads. During each game, players were allowed to form

coalitions, if desired, but the expected value of winnings was exactly equal to that for members playing individually. Contrary to predictions, coalitions were formed on 57 percent of all trials. Females were more "irrational" than males because they formed more coalitions than males, despite a greater deviation from the parity norm, and agreed upon many more 50-50 splits between partners of unequal strength. The author offers two possible motives for the "irrational" behavior: perhaps the subjects had other motives besides that of winning points, and, because the subjects were Filipino, coalescing may have derived from the higher social cost (compared to American society) of saying, "No." He concludes by stating that the most important general implication of his study is that the expected value of manifest rewards provides an inadequate basis for predicting absolute or relative frequencies of coalitions formed. "Hidden" rewards, as well as such manifest ones as points or money payoffs, must also be taken into account.

From the above studies we can conclude that perceptual, cognitive, and motivational variables do enter the coalition formation process. Although we do not know the relative importance of such variables vis-a-vis more quantifiable and/or economic ones, we have established their influence in coalition formation and subsequent behavior therein.

METHODOLOGY

The data used to test the hypotheses in this paper were drawn from two separate studies. The first study was carried out in a laboratory setting using students from a large southern university as subjects. The second study was conducted in a field setting using navy recruits as subjects. The methodology will be described in five separate sections: a) subjects b) physical environment of the study c) design of the study d) tasks e) procedure.

Subjects

The subjects in the laboratory study were, with a few exceptions, single male undergraduate students. An attempt was made to match the black and white students

in terms of age, intellectual capability, and social economic class. These students were asked to complete a biographical questionnaire before they were selected to participate in this study. This questionnaire was used both to check on student similarity and to establish credence for group compatibility (Katzell, et al.,1970). Despite a major attempt to match students on the above described characteristics, several differences existed between the black and white students (See figure I).

As a result of this screening process, a sample of 96 male undergraduate students, 48 black and 48 white, were hired to role play superiors and subordinates in this study. Each of 12 black and 12 white older students were randomly assigned to supervise three different racially mixed dyads of subordinates (one all black, one all white, and one with a black and white subordinate.) The remaining 72 students, half-black and half-white, were randomly assigned to one of the three different racially mixed dyads that participated once with a black supervisor and once with a white supervisor. All possible orders of supervisor and dyad combinations were represented twice to reduce the effect of order bias. Each participant was paid $3.00 per scheduled hour.

The subjects in the field study were drawn from naval recruits who were participating in a seven week basic training program at a naval training center located in the southeastern portion of the United States. Randomized selection of subjects was not possible due to the rigor of the training schedule as well as the uneven distribution and relative absence of blacks in some companies. Thirty training companies, representing approximately 2,150 men, were used to select the set of subjects. Since the basic format of a training company necessitated the previous interaction of subjects, sample selection was restricted to those companies engaged in the fifth day, fourth week and the first, second and fourth days of the fifth week of their training in order to reduce the variability in the length of time squad leaders and members had been in training and thus had been acquainted with each other.

The navy recruit subjects were selected in the following manner: A naval coordinator, designated by the base commander, contacted company commanders to ascertain

the availability and racial distribution of their squad leaders and members. The coordinator informed the company commander that squads were needed to participate in a study concerning problem solving effectiveness in small groups. If the company commanders indicated that their squads had available time and if the squad leaders and members met the required racial distribution, the coordinator asked the company commander to inform the squad leader that he was to participate in this study. The company commander also choose the particular squad members who were to participate with the squad leader in this study. Selection thus depended upon the personal availability of squad members. Although it is possible that biasing entered into the selection of the participants because company commanders were not told how to select them, the researchers became aware of no selection bias.

The subjects in the field study differed from those in the laboratory in three major ways. In the first place, the leaders were real leaders; that is, they had already been appointed and had performed in the position of squad leader. Secondly, the subordinates were, in fact, subordinates; that is, they were assigned to and actually functioned in the squads from which the leaders had been selected. Thus, they had actually worked under the squad leader for some period of time. It is possible that the relationship which they had already established with their squad leader effected their behavior in the tasks they performed. Lastly, there was perhaps more pressure to perform well among the naval recruits than among the students because of the fact that their performance during the task might effect their relationships with their squad leaders.

The naval recruits were also asked to complete a biographical questionnaire. Results derived from this questionnaire also indicated some differences in the black and white subjects social economic background. (See figure 2).

A total of 288 male recruits, 144 black and 144 white participated in the field study. This study involved 64 squad leaders, 32 black and 32 white, and 224 squad members as will be discussed under the design of the study. Some subordinates were

assigned to three men groups while others were assigned to five men groups. Although the tasks assigned were randomized to reduce order bias, each subject participated in only one group. Thus, it was not necessary to randomize their participation over group types. Once again, subjects were permitted to leave as soon as they had completed their task. Unlike the university subjects, there was no requirement to pay the naval recruits.

Physical Environment

Although these two studies occurred at different locations using different subjects, the physical environment for both studies were very identical. Essentially two rooms were used to perform the experiment; an observation room and an experimental room. The experimental rooms, the one in which the subjects actually performed the tasks, were equipped with the following:

1) A desk and a chair for the investigator and/or his assistants who provided instructions to the participant, timed and evaluated their performance.

2) A table and chairs for the participants.

3) Stop watches which were used by the investigator and/or his assistants to time various aspects of the experiment.

4) Links of rope which subjects used for the knot tying problem.

5) A microphone connected to an amplifier so that observers in the observation rooms could hear what the subjects said as well as observe their behaviors.

6) Pencils, papers and other forms needed to perform the tasks.

The observation rooms which were connected to the experiment rooms by a one way mirror contained the following:

1) IPA recording forms and clipboards for the observers to record the behaviors of the subjects.

2) A speaker amplifier system which the observers could manipulate to increase or decrease the sound of the subjects voices in the experiment rooms.

3) Seats for the observers who were watching the subjects behave through the one way mirrors.

Figure 1

SELECTED DIFFERENCES IN REPORTED ECONOMIC AND SOCIAL CHARACTERISTICS OF BLACK AND WHITE PARTICIPANTS

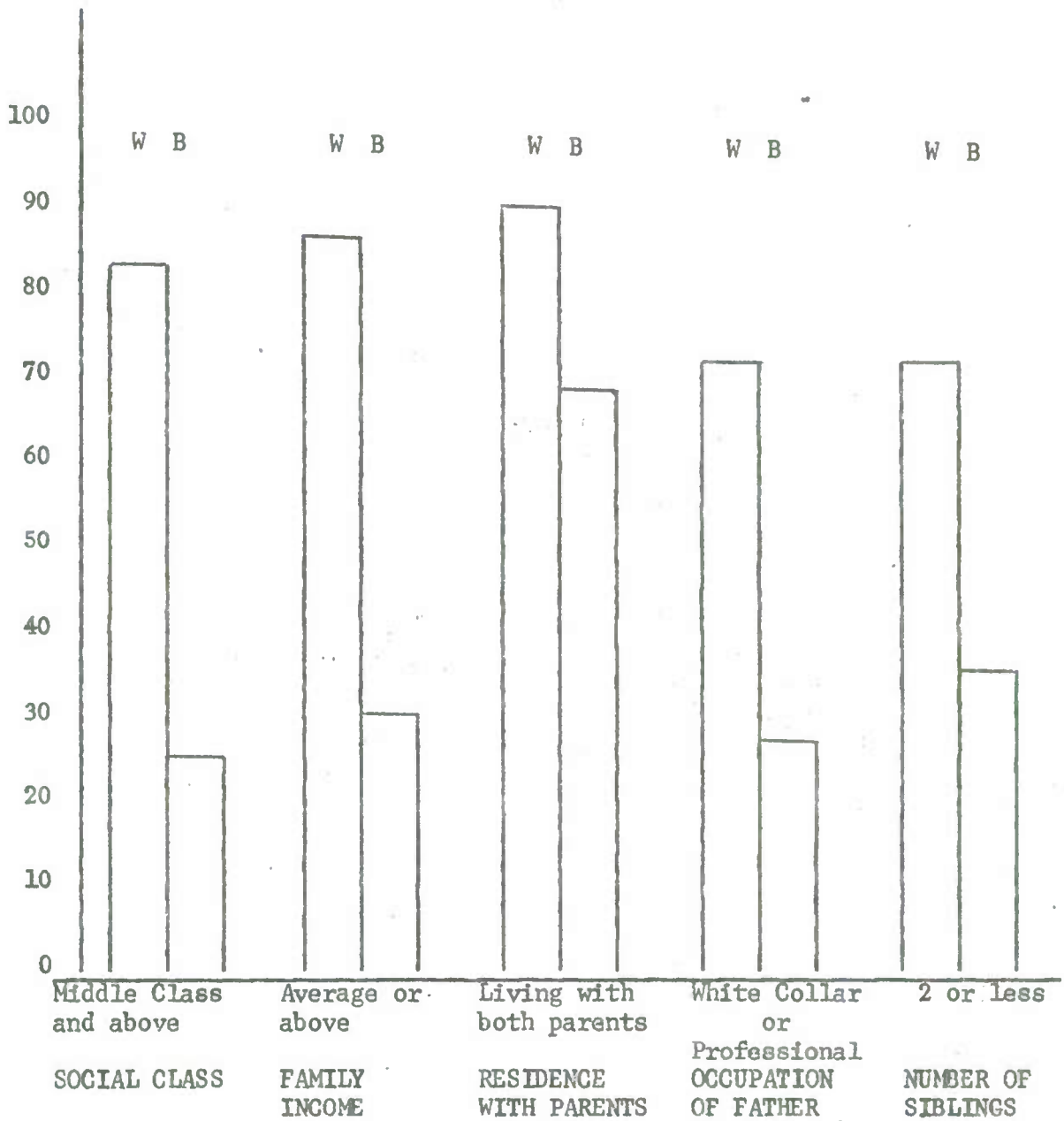
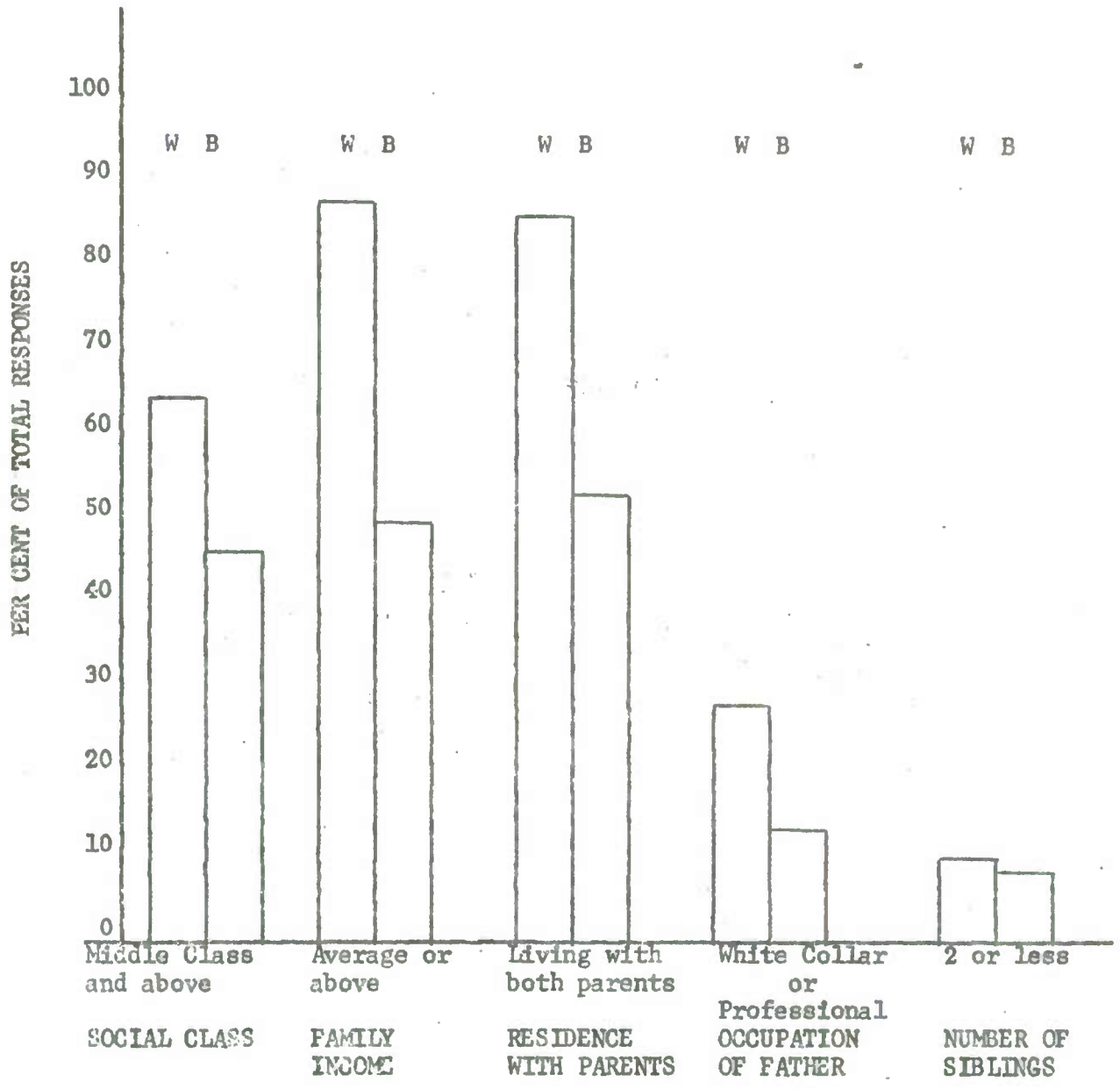


Figure 2

SELECTED DIFFERENCES IN REPORTED ECONOMIC AND SOCIAL CHARACTERISTICS OF BLACK AND WHITE PARTICIPANTS IN FIELD SETTING



Study Design

The basic design of the two studies also were quite similar. Each was part of a larger study in which racial composition in task groups was varied in order to assess the impact of leaders of different races on the group performance of different racially mixed groups.

The laboratory study was designed so that 12 black and 12 white leaders worked with all black, all white and racially mixed dyads of subordinates. Thus each leader, black and white, worked with three different dyads, one all black, one all white and one racially mixed. All possible orders of superior and dyad combinations were represented twice in order to reduce the effects of order bias. Likewise, each subordinate dyad, irregardless of its racial composition, performed the tasks once with a black leader and once with a white leader (See figure 3.1).

The design of a field study was slightly different. This study involved 64 subordinate groups: 16 groups consisted of two members, one black and one white; 16 groups consisted of four members, one black and three white; 16 subordinate groups consisted of four members, two black and two white; and 16 consisted of four members, three black and one white. Eight different black and eight different white leaders lead each of the four types of groups once, thus, 64 leaders participated in the study (See figure 3.2). The field study addressed itself to three variables: Leader race, group size, and group racial composition. Leader race was varied by having equal numbers of black and white squad leaders be in charge of the various groups. Group size was varied by holding racial composition constant at 50 percent and varying the number in the subordinate groups from two to four. Group racial composition was varied by holding subordinate group size constant at four and varying the number of members of each race from one to three (Thus, racial composition was 25%, 50%, and 75% black). The four member groups with half black and half white members were common to both the analysis of data with subordinate group size varying and the analysis of data with subordinate group racial composition varying. Otherwise, size

Figure 3.1

Design of Laboratory Study

	Group Type		
	0	1	2
Leader	B	B	B
Subordinates	BW	BB	WW
Number of Groups	12	12	12
Leader	W	W	W
Subordinates	BW	BB	WW
Number of Groups	12	12	12

B = Black Subject

W = White Subject

Figure 3.2

Design of Field Study

	Group Type			
	0	1	2	3
Leader	B	B	B	B
Subordinates	BW	BWWW	BBWW	BBBW
Number of Groups	8	8	8	8
Leader	W	W	W	W
Subordinates	BW	BWWW	BBWW	BBBW
Number of Groups	8	8	8	8

B = Black Subject

W = White Subject

and racial composition would be compounding variables. Basically, the design was a two by four factorial design.

The independent variable in both studies was the racial similarity and dissimilarity in the roles of the subordinates and supervisors in the groups.

Mediating Structure

The mediating structure of the two studies varied slightly. In the laboratory study leader position of the supervisor was operationalized by introducing him as being selected because of his training ability and interest in group members and group activities. Each supervisor received approximately one hour of instruction to familiarize him with the three tasks. Knot tying proficiency and job instructional techniques were emphasized. Each supervisor received a personal five foot piece of clothesline and knot diagram in order to practice the two unusual knots before the tasks began. The investigator further strengthened the leader's position by directing him to initiate and conclude all the tasks. For example, in the knot tying task, he was the instructor of the other two members. In the ship routing task, he served as a central communicator in solving the problem and reported the group solution by a signal of his hand. In the recruiting letter, his instructions were to solicit creative ideas from the group and record them on a note pad. Hollander and Julian (1970) used this approach to manipulate subordinates perceptions of the leaders' authority, confidence, and motivation. To further control the group relationship, perception of the compatibility of the group members was initially established as suggested by Katzell, et al., (1970). At the introduction of each group, all participants were advised that the biographical questionnaires they had completed earlier were used to match their backgrounds and assign them to compatible groups.

The purpose of the field study was explained as being concerned with the analysis of the problem solving effectiveness of groups (Katzell, et al., 1970). Subjects were told that in order to do this they would perform two tasks. No mention was

made of the compatibility of the groups. The importance of completing the tasks as rapidly as possible was stressed by telling the groups that they were in friendly competition with other squads. This phrase has special meaning to naval recruits. It means that they are in competition and should perform as best they can, but no special reward will be forthcoming. To further enhance their desire to perform effectively, they were told that the company commander would be informed as to how well they compared with all the squads participating in the study. The groups were told that their squad leader was selected to be in charge due to the way they were organized during recruit training. This was mentioned in an effort to enhance the leadership position of the squad leader and stressed the idea that the squad leader was the one to be in charge of the group during the accomplishment of the task. The same introduction was made to each group from a prepared script.

The participants in both studies were informed that two additional observers besides the investigator giving the instructions were necessary for the analysis, but they had to sit outside the observation room and listen by means of a microphone on the table because of the physical arrangement of the room.

Output Variables

Two major variables were used in each of the studies; a measure of group process and various productivity measures. The Bales Interaction Process Analysis(IPA) was used to operationalize the group processes (Bales, 1950; Bales and Slater, 1955; Lansberger, 1955; Zdep, 1969; Richards, 1970; and Katzell, et al., 1970). The 12 interaction variables were measured by trained observers who watched the tasks being performed through a one way mirror. Each session was observed by one black and one white observer to control for racial perceptual differences. Although an attempt was made to schedule each of the observers an equal number of times, the unique time demands of each of the observers resulted in some pairs of observers being used more frequently than other pairs. Thus, no particular sequence was followed except that all possible combinations of observers were used.

Both studies involved the performance of knot tying and ship routing tasks. The measure of productivity in each of these cases was the total amount of time lapsed from the beginning to the end of the task. This time was measured by the assistant within the observation room who started a stop watch when the task began and stopped the watch when the task was completed. In the laboratory studies, a third task, an unstructured one, required each group to develop a recruiting letter urging college students to join an all volunteer navy. The productivity of this unstructured task was measured by semantic differential ratings of the recruiting letter by 13 different judges. To control for order effects, each judge rated a randomly varied order of the 72 letters. After a short training period to develop an understanding of the four dimensions to be judged (style, form, persuasiveness, and originality), the students rated the letters in two, two hour time periods. Frequent breaks were allowed to reduce fatigue. The judges were also paid $3.00 per hour.

Tasks

Both studies involved the performance of two structured tasks: a ship routing problem and a knot tying problem. These problems were chosen because of their shared goal and verbal interaction orientation. The tasks differed largely in the degree to which verbal skills were required. In the ship routing problem, each group was asked to work together quickly in order to find the shortest route for a ship which had to touch five ports. This task was rated by Shaw (1963), to be high on cooperation requirements, decision verifiability, and intellectual-manipulative requirements. Each of the group members had only partial information sheets regarding the distances and availability of the routes between the different ports. To assure group verbal interaction, the group members were told not to show each other the information sheets which were randomly distributed to them. However, group members were encouraged to verbally communicate because the problem only could be solved by their working together as a group. All groups tried to identify several solutions before

reporting a group solution. If an incorrect solution was reported, the investigator asked the group to work again until they found the correct solution.

The second structured task required the members to perform the physical task of tying an unusual knot. Each member was provided with a piece of rope in order to minimize time delays during the task. To maximize the group effort and verbal interaction, the instructions preceding the task encouraged verbal but not physical help from group members who had completed tying the knot successfully. The investigator determined if the knot was tied correctly.

The procedure used differed slightly in the laboratory and field studies. In the former case, the student leaders were given advanced instructions in how to tie the knot as well as some training in job instructional techniques. In addition, each supervisor was given his own personal five foot piece of rope and a knot diagram so that he could practice making the unusual knot in his leisure time. This was done in order to further strengthen the student leadership position by giving him differential knowledge of the task. On the other hand, in the field study the leader was only given an instruction sheet, face down, which displayed how to tie the knot. It was the leader's responsibility to read and understand the instructions and then to pass this information on to his group.

An unstructured task was also performed by the laboratory subjects. Each group after completing the two structured tasks was asked to develop a recruiting letter urging college students to join an all volunteer navy. This letter, containing no more than 250 words, was to be completed in 30 minutes. The groups were told the letter would be judged on the basis of style, form, persuasiveness, and originality. Thus, one of the major differences between the two studies was that the laboratory group was asked to complete three tasks while the subjects in the field experiment were asked to complete only two tasks.

Procedure

The procedure used in the two studies varied slightly because of the fact that a different number of tasks was utilized and the composition as well as the size of

the subject groups varied.

In the laboratory study each dyad was scheduled for two, two hour group sessions. One supervisor was also scheduled to participate in the first two hour session, but after one session he was replaced with a supervisor from the opposite race and another two hour group session was held. Each subordinate dyad thus participated together in two, two hour sessions; one with a black supervisor and one with a white supervisor. Each supervisor returned at another time to lead two additional sessions of different racially mixed groups. These sessions were scheduled over eight weeks.

For each session the participants gathered at the experimental room at the appointed time with the investigator. The participants were instructed to sit at a table with the supervisor in the middle on a chair with rollers. Subjects were informed that the purpose of the study was the analysis of group problem solving effectiveness, but observation was a necessary part of this analysis. They were told that the two observers were placed behind a one way mirror in order not to distract the participants. A standard set of introductory remarks was read to each group. Group compatibility was established by the following statement: "A biographical questionnaire like the one you filled out the first time you met with me has been successfully used in determining the compatibility of groups in previous research. Your group was selected in a similar manner so you should enjoy the activity and perform it efficiently". The supervisor's leadership position was also established at this time by the investigator's introduction. Specific task instructions were then explained and questions answered to clear up misunderstandings before beginning each task.

For each dyad the two structured tasks were performed in random order. In all sessions, the unstructured task was presented last to avoid possible contamination if the participants held negative attitudes towards the military. After the investigator signaled the supervisor to begin the assigned task, the observers began to record the behaviors of the group members. When the tasks were completed, the assistant within the experimental room recorded the time so that the total productivity

of the task could be measured. After the three tasks were completed, the members were asked to fill out a few forms. They were then thanked for their participation and asked not to discuss details of the study with anyone, since advanced knowledge of the details would limit the value of the study. Subjects were told that the results of the study would be shared with them if they were interested. Payment arrangements were then discussed and the group thanked again.

Although the overall procedure of the field study closely paralleled that of the laboratory study, there were a few variations. Nearly all of the groups participating in the study had to be transported by private automobile from the recruit training command section of the naval training base to the conference facility, a distance of approximately one mile. The number, size and composition of the groups varied depending upon their availability. Although two groups could be studied at one time, there were occasions when a group had to wait before it could begin the tasks. These groups were escorted to an unused area of the building and not permitted to come within ear shot of the proceedings.

Upon arrival at the conference facility, the participants were escorted either to a study room or to the waiting area. As the groups entered the study room, they were greeted by the assistant. The squad leader was then asked to sit at the middle position of the table. The rest of the members were seated alphabetically in order to randomize the racial seating arrangement. Once again, the purpose of the study was explained as being concerned with the analysis of the problem solving effectiveness of groups. Participants were told that in order to do this, they would perform two tasks. No mention was made of the compatibility of the bi-racial groups. The participants were informed that two additional observers beside the assistant giving them instructions were necessary for the analysis, but that these observers were to sit outside and listen by means of a microphone on the table and to observe them through a one way window. The importance of completing the task as rapidly as posble was stressed by telling the groups that they were in friendly competition with

other squads. The groups were told that the squad leader was selected to be in charge due to the way that they were organized during recruit training. This was mentioned in an effort to enhance the leadership position of the squad leader and stressed the idea that the squad leader was the one in charge of the group during task accomplishment. These instructions were made from a prepared script.

Once again the two unstructured tasks were performed in random order. The group received instructions for accomplishing the first task and began when the assistant gave the signal. The assistant operated a stop watch so that the total time necessary for task completion could be recorded. After completing the first task, instructions were given for accomplishing the second task. Once again, the assistant kept a record of the time needed to complete the task with a stop watch.

Upon completion of the second task, the group was ushered from the study room to an unused area of the building. No conversing with waiting groups was allowed. Each subject was then given a series of questionnaires whose data were used in other parts of the study. When this data were collected the groups were thanked for participating in the study and cautioned not to discuss any details of the study with other recruits. The idea of friendly competition was again raised in an effort to solicit their cooperation in maintaining silence.

Since the number as well as the racial composition of the subjects in the task groups varied between the laboratory and field study, it was decided to report only the results of the leaders initiations to the two man, mixed groups in the field setting. This decision allows us to compare similar racial group results with only the setting of the study changing.

METHOD OF ANALYSIS

The description of the methods of analysis used in the two studies is divided into two sections: interrater reliability and statistical procedures.

Interrater Reliability

Since subjects' behaviors were recorded by two observers, one black and one white, it was necessary to measure the degree of agreement between their observations. The procedures used to train and evaluate the observers were similar in the laboratory and field studies.

An equal number of black and white students were hired and trained according to procedures set forth by Bales (1950). A pilot study of the tasks using paid participants was run to familiarize the observers with the activities in each of the tasks. Video tapes of the pilot study then were used for further training which was concluded when reliability between observers reached .80.

After the first and second weeks of the laboratory study, interrater reliability checks were run and no significant differences were found between the ratings of the observers. The final reliability comparisons of the black and white observer pairs over the twelve Bales categories over the different dyad types revealed Spearman Rank Correlations ranging from .507 to .978 with an average of .832 (Table 1).

After the first several groups had completed their tasks in the field study, reliability comparisons were computed for the black and white observer teams with no significant differences in their observations discovered. Final reliability comparisons between the observer pairs over the twelve Bales categories and group types revealed intraclass correlations ranging from .56 to .86 with an average of .69 (Table 2). Although these reliability coefficients were not as high as those observed in the laboratory, some of the differences probably resulted from the fact that a greater number of observers were employed in the field study because of the shorter duration of the study as well as the fact that the field

TABLE I

Spearman Rank Correlations of White and Black Observers on Interpersonal Behavior of White, Mixed, and Black Dyads

Bales' IPA Categories	White	Mixed	Black
1. Shows solidarity	.969	.966	.940
2. Shows Tension release	.978	.679	.775
3. Agrees, accepts	.828	.722	.596
4. Gives suggestion	.840	.789	.929
5. Gives opinion	.955	.871	.847
6. Gives information	.934	.807	,863
7. Asks for information	.847	.927	.822
8. Asks for opinion	.848	.624	.507
9. Asks for suggestion	.878	.888	.586
10. Disagrees	.901	.912	.873
11. Shows tension	.850	.965	.812
12. Shows antagonism	.888	.940	.595

TABLE 2

INTRA CLASS CORRELATIONS BETWEEN BLACK AND WHITE OBSERVERS ON INTERPERSONAL BEHAVIOR OF MIXED DYADS OF VARYING SIZE AND RACIAL COMPOSITION

	Knot-Tying Task Observer Team				Ship-Routing Task Observer Team			
Bales' IPA Categories	1	2	3	4	1	2	3	4
1. Shows solidarity	86	72	61	93	89	98	86	96
2. Shows tension release	86	55	54	64	75	84	51	79
3. Agrees	87	49	78	64	92	64	71	69
4. Gives suggestion	96	94	87	89	88	87	85	72
5. Gives opinion	87	64	45	74	78	75	68	82
6. Gives information	89	53	57	68	90	78	39	46
7. Asks for information	84	45	23	17	93	87	73	81
8. Asks for opinion	53	18	40	00	83	57	58	37
9. Asks for suggestion	87	29	31	50	85	36	68	57
10. Disagrees	85	76	55	66	92	85	68	30
11. Shows tension	60	78	74	66	87	81	58	79
12. Shows antagonism	74	73	78	23	85	86	84	81

study was run with larger groups. It is a well recognized phenomenon that rater reliability decreases with increases in the subjects to be observed.

Statistical Procedures

The manner in which the data in this paper was analyzed depended upon our definition of a coalition. As the reader observed during the review of the literature, there exists no common definition of what constitutes a coalition. The literature most relevant to our data, the Component Act Emphasis Literature, has relied upon such diverse measures as: an index of support (Mills, 1953), a power score (Strodtbeck, 1954), participation on the same side of the argument (Mills, 1953), and symbiotic attachments (Truk and Truk, 1962). Since no common definition emerged from the literature, the authors decided to rely on the Bales categories themselves for an indication of the operation of coalitions.

Since the original data contained a large number of zero responses, it was decided to combine adjacent Bales categories. Thus, the scores in categories one, two and three were added to obtain a new variable, positive social emotional acts. Similarly, three other variables were formed by adding the scores of categories four, five and six, categories seven, eight and nine, and categories ten, eleven and twelve. Since each of these new variables has a natural interpretation, positive social emotional, directive, non directive, and negative social emotional acts, respectively, there was little ambiguity caused by the combination of categories. However, these new variables were still essentially of the poisson type, being the number of initiations per unit of time. Thus, in order to satisfy the assumption of equal variances for the analysis of variance, the square root transformations were used following procedures suggested by Winer (1962).

Although the laboratory study involved the participation of 48 different groups divided equally into four generic types (black leaders of mixed racial groups, black leaders of groups consisting of members of the opposite race, white leaders of mixed racial groups, and white leaders of members of the opposite race),

data revealed some missing frequencies within one of these groups. In order to keep the number of groups in each category equal, a group was randomly eliminated from each of the other three group types. Thus, instead of twelve groups, the analysis was based upon eleven groups of each of the four generic types.

As we have previously discussed in the Methodology section, the data used in the analysis of this paper was restricted to black and white leaders interacting with mixed dyads. Thus, only two different types of groups were utilized in the field study (black leaders of racially mixed groups and white leaders of mixed racial groups). Eight of each of these groups were used in this analysis.

Although the leaders initiations were observed and recorded in the twelve individual Bales categories, they also were designated as being directed to the leaders themselves, both members of the group, or specific individuals within the group. This procedure was followed for each of the tasks. Since there were two judges observing behavior in each group, their recordings for each task were summed and divided by two in order to get an average usage for each category for each leader on each task. The separate Bales categories then were collapsed into the four behavioral variables: positive social emotional, directive, non directive, and negative social emotional acts. For each of these variables, the average number of each leader's initiations on each task - to themselves, both members, and individuals were converted to percentages by dividing the number of comments directed to a specific source by the total number of comments made in that category. For example, in the positive social emotional category, all relevant comments of the leaders on a particular task were recorded and divided on the basis of to whom they were directed. The totals in each of the "to whom" classes were divided by the total number of positive social emotional acts to obtain the percentage of these acts directed to the different classes. The percentages allocated by each leader to each class were then summed and divided by the number of leaders to obtain an average percentage of leaders of a particular type of group on a specific

task initiations to themselves, both members, and individuals within the group type. This procedure also was followed for the directive, non directive, and negative social emotional categories. When leader initiations were directed to individual members of their groups and when these groups were composed of both black and white members, the acts were further subdivided into those directed to black and those directed to white members using the same percentage procedure.

This method of subdividing leaders initiations masks the relative frequency with which the collapsed categories were used. Thus, the percentages exhibited in the tables which follow cannot consistently sum to 100 per cent nor can the reader conclude from these percentages alone that leaders of a particular group type emitted more or less comments of a specific category to themselves than to either the group as a whole or individual members within their groups.

The design of these two studies basically involved three variables: different groups, different tasks, and different Bales categories. Holding one of these variables constant and allowing the other two to vary resulted in three separate analyses: groups were compared within each task-category combination, tasks were compared within group and category types, and categories were compared within group and task types. The data was analyzed as a factorial experiment with the first factor, supervisor pairs, considered as a random effect. Standard analysis of variance procedures were used and the computations were carried out using the computer program BMD08V (Dixon, 1968). Each of the four separate Bales categories was analyzed separately under a standard mixed model. When the groups were compared within task-category combinations, a simple two s ample T test was employed to analyze the differences. Paired difference tests were utilized to evaluate the differences observed between tasks and between categories. The Tables used throughout this paper employ the convention of an asterisk (*) to designate differences found significant at the .05 or better level.

ANALYSIS

The analysis section of this paper is divided into three major parts: the laboratory study, the field study, and a comparison between the significant findings discovered in the two studies. Since there are three basic dimensions (task type, category type, and group type) which may influence leader behavior, three additional subdivisions were made by holding two of the dimensions constant and varying the other; i.e., between group types within task-category combinations, between tasks within group and category types, and between categories within group and task types. Finally, the analysis is again subdivided depending upon whether the leaders initiations were recorded as being directed to themselves, both members of their groups, or to specific individuals within their groups. When initiations were placed in the last category and when they occurred within a group of racially mixed subordinates, a comparison was made between the leaders initiations to a member of his own race and those to a member of the opposite race.

The Laboratory Study

These results will be reported in the following order: differences between groups, between tasks, and between categories.

Between Group Differences

In the laboratory study, leaders of both races supervised three different racially mixed dyads where subordinates consisted of members of the same, opposite, and both races. For the purposes of this paper, homogeneous racial groups were excluded from the analysis. Since this study involved black and white leaders and since its purpose was not to investigate racially homogeneous groups, it was possible to study both black and white leaders as they interacted with dyads consisting of either one black and one white or two members of the opposite race. Since our primary concern was to discover any initiation differences which existed when a black or white leader interacted with a mixed or opposite raced group or

how the leaders of one race differed when they related to a mixed versus an opposite racial group, comparisons were not made between a mixed group supervised by a leader of a specific color with an opposite group led by a leader of the other color. An analysis was made however of the aggregate behavior of black versus white leaders without concern for whether the group was mixed or opposite. Table 3 summarizes the significant differences between black and white leaders of different racially mixed groups initiations to themselves, all group members, and individuals within various task-category combinations. The raw per cent of black and white leaders of these groups initiations to themselves, both group members, and individuals in their groups are reported in Tables 6, 10, and 14 respectively while the actual comparison of F values between black and white leaders of different racially mixed groups initiations to themselves, both group members, and individuals are presented in Tables 7, 11, and 15 respectively. This discussion, like that of the field study and the comparison of the two studies, will focus only on the significant differences indicated in the summary shown in Table 3.

Differences in Initiations to Self - - -

Table 3 indicates that there were no significant differences in either black or white leaders initiations to themselves as measured by Bales categories when they supervised subordinates of the opposite race as compared to racially mixed subordinates (Groups 1 vs 2 and 3 vs 4 in Table 7). Neither were there any differences when either black and white leaders of mixed groups or leaders of mixed versus leaders of opposite racial member groups were compared. A significant difference was found between black and white leaders use of the directive category in both the ship routing and the letter writing tasks. Blacks exhibited more directive behavior than their white counterparts. This tendency held in the ship routing problem when black leaders of the two types of groups were compared with white leaders. It should be noted that 72 different tests were made between black and white leaders but only 3 significant differences were found and these, of course, may be due to chance.

TABLE 3

SUMMARY OF SIGNIFICANT DIFFERENCES BETWEEN BLACK AND WHITE LEADERS INITIATIONS TO THEMSELVES, ALL GROUP MEMBERS, AND INDIVIDUALS BETWEEN GROUPS AND WITHIN TASK-CATEGORY COMBINATIONS

Task-Category Combinations[2]	GROUPS[1]							
	Self		Both		Ind			
	G_2 vs G_4 (N=22)	G_{1+2} vs G_{3+4} (N=22)		G_1 vs G_2 (N=22)	G_1 vs G_3 (N=22)	G_2 vs G_4 (N=22)	G_3 vs G_4 (N=22)	G_{1+2} vs G_{3+4} (N=22)	G_{1+3} vs G_{2+4} (N=22)
A_1				2>1			4>3		2+4>1+3
A_2				2>1			4>3		2+4>1+3
A_3				2>1					2+4>1+3
A_4									
B_1						4>2	4>3	3+4>1+2	2+4>1+3
B_2	2>4	1+2>3+4		2>1			4>3		2+4>1+3
B_3				2>1			4>3		2+4>1+3
B_4				2>1					
C_1				2>1	1>3		4>3		2+4>1+3
C_2	2>4				1>3		4>3		2+4>1+3
C_3				2>1			4>3		2+4>1+3
C_4							4>3		2+4>1+3

[1] G_1 = Black-Mixed
G_2 = Black-Opposite
G_3 = White-Mixed
G_4 = White-Opposite

[2] A = Knot Tying
B = Ship Routing
C = Letter Writing

1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

Differences in Intiations to Both Members - - -

Table 3 indicates no significant differences between black and white leaders initiations based on group, task, or category subdivisions. As Table 11 shows, 72 comparisons were made but none were significant.

Differences in Initiations to Individuals - - -

Table 3 illustrates the significant differences that were found when black and white leaders of different racially mixed groups made initiations to individual members of their groups. Table 15 shows that 30 of the 72 comparisons turned out significant. It is noteworthy that all but four of these differences resulted from comparing how leaders of a specific race acted when the groups they supervised consisted of two members of the opposite race as distinguished from those in which they had one black and one white subordinate (groups 1 vs 3, 2 vs 4, 1 + 3 vs 2 + 4). Leaders consistently used more initiations when working with two members of the opposite race than when the group was mixed as the comparison between group 1 + 3 and 2 + 4 illustrates. Although the differences for blacks and whites were consistent in the positive social emotional category in the knot tying and letter writing assignments as well as in the directive category for the knot tying and ship routing problems and in the non directive category for the ship routing task, the differences do not seem to be patterned between leaders of the two races. There also appears to be a greater consistency in behavior among white leaders than among blacks. White leaders of opposite race groups emitted more positive social emotional and directive acts in all three tasks than did white leaders of mixed groups. This consistency did not appear among black leaders although black leaders of opposite race groups did emit more directive and non directive acts in the knot tying and ship routing tasks than did black leaders of racially mixed groups. It is interesting to note that white leaders of opposite race groups in the letter writing assignment did show more negative

social emotional comments than did white leaders of mixed groups. This was the only situation in all 18 comparisons between groups that a difference occurred in emission of negative social emotional comments.

Between Task Differences

Table 4 summarizes the significant differences which were found between black and white leaders of different racially mixed groups initiations to themselves, both group members, and individuals within various task-category combinations. The raw per cent of black and white leaders of these groups initiations to themselves, both group members and specific individuals are reported in Tables 6, 10, and 14 respectively while the actual comparison of F values are presented in Tables 8, 12, and 16 respectively.

Differences in Initiations to Self - - -

Table 4 indicates that there were no significant differences between black and white leaders initiations to themselves when they supervised subordinates of the opposite race as compared to racially mixed subordinates (group 1 vs 2 and 3 vs 4 in Table 8) nor were there differences in their overall pattern (groups 1+2 vs 3+4 in Table 8). Although no differences were found in black or white leaders initiations when they supervised mixed dyads, black leaders used more directive comments in the ship routing assignment than they did in the letter writing task and white leaders used more directive comments in the knot tying task than in either the ship routing or the letter writing problem. As Table 8 indicates only 3 of 72 comparisons were significant and none of these occurred between black and white leaders.

Differences in Initiations to Both Members - - -

Table 4 shows that 16 of the possible 48 comparisons within black and white led groups revealed significant differences between tasks within categories. Half of these differences occurred within the directive category and showed that leaders, irrespective of their race or the racial composition of their groups emitted more directive acts on the ship routing as compared to the knot tying

TABLE 4

SUMMARY OF SIGNIFICANT DIFFERENCES BETWEEN BLACK AND WHITE LEADERS INITIATIONS TO THEMSELVES, ALL GROUP MEMBERS, AND INDIVIDUALS BETWEEN TASKS AND WITHIN CATEGORY AND GROUP TYPES

	GROUPS									
	Self		Both				Individual			
Tasks Within Categories[1]	Black Opposite G_2 (N=11)	White Opposite G_4 (N=11)	Black Mixed G_1 (N=11)	Black Opposite G_2 (N=11)	White Mixed G_3 (N=11)	White Opposite G_4 (N=11)	Black Mixed G_1 (N=11)	Black Opposite G_2 (N=11)	White Mixed G_3 (N=11)	White Opposite G_4 (N=11)
A_1B_1								A B		
A_1C_1			C A	C A	C A				C A	
B_1C_1								C>B		
A_2B_2		A>B	B>A	B>A	B>A	B>A		A>B	A>B	A>B
A_2C_2		A>C	C>A	C>A	C>A	C>A		A>C	A>C	
B_2C_2	B>C									
A_3B_3										
A_3C_3			C>A	C>A	C>A					
B_3C_3										
A_4B_4										
A_4C_4			C>A					C>A		C>A
B_4C_4			C>B				C>B	C>B		C>B

[1]
A = Knot Tying
B = Ship Routing
C = Letter Writing

1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

and on the letter writing as contrasted with the knot tying assignments although this relationship did not appear when the letter writing and ship routing tasks were compared (See Table 12). With the exception of white leaders working with groups of the opposite race, more positive social emotional and non directive acts were emitted in the letter writing assignment than in the knot tying tasks. The only instances in which comparisons of negative social emotional comments between tasks occurred was when blacks led mixed groups. Here more negative comments were emitted in the letter writing assignment than in either the knot tying or ship routing tasks. The fewest differences were found when whites led members of the opposite race and these happened within the directive category as already mentioned.

Differences in Initiations to Individuals - - -

Twelve of the 48 comparisons within black and white led groups showed significant differences between tasks within categories. Two-thirds of these differences occurred when a leader was working with members of the opposite race with blacks exhibiting more differences than their white counterparts (See Table 16). Both white and black leaders when working with groups of the opposite race emitted more negative social emotional comments in the letter writing tasks as compared with both the knot tying and ship routing assignments. Black leaders irrespective of the type of group they supervised emitted more negative social emotional comments in the letter writing as compared with the ship routing problem. While their white counterparts exhibited more directive comments in the knot tying as compared with the ship routing problem irrespective of the racial composition of the group they led.

Between Category Differences

Table 5 summarizes the significant differences which were found between black and white leaders of different racially mixed groups initiations to themselves,

SUMMARY OF SIGNIFICANT DIFFERENCES BETWEEN BLACK AND WHITE LEADERS INITIATIONS TO THEMSELVES, ALL GROUP MEMBERS, AND INDIVIDUALS BETWEEN CATEGORIES AND WITHIN GROUP AND TASK TYPES

GROUPS

Categories Within Tasks [1]	Self		Both				Individual			
	Black Mixed G_1 (N=11)	Black Opposite G_2 (N=11)	Black Mixed G_1 (N=11)	Black Opposite G_2 (N=11)	White Mixed G_3 (N=11)	White Opposite G_4 (N=11)	Black Mixed G_1 (N=11)	Black Opposite G_2 (N=11)	White Mixed G_3 (N=11)	White Opposite G_4 (N=11)
A_1A_2			2 >1	2 >1	2 >1	2 >1				1>2
A_1A_3					3 >1	3 >1		1>3	1>3	1>3
A_1A_4							1 >4	1>4	1>4	1>4
A_2A_3										
A_2A_4			2 >4	2 >4	2 >4	2 >4	2 >4	2>4	2>4	2>4
A_3A_4					3 >4			3>4		3>4
B_1B_2			2 >1	2 >1	2 >1	2 >1				1>2
B_1B_3			3 >1		3 >1	3 >1				
B_1B_4										1>4
B_2B_3	3 >2									
B_2B_4			2 >4	2 >4	2 >4	2 >4	2 >4			2>4
B_3B_4			3 >4	3 >4	3 >4	3 >4				3>4
C_1C_2		1>2	2 >1	2 >1	2 >1	2 >1	1 >2	1>2	1 >2	1>2
C_1C_3			3 >1	3 >1	3 >1	3 >1	1>3	1>3		1>3
C_1C_4										
C_2C_3		3>2		2 >3						
C_2C_4			2 >4	2 >4	2 >4	2 >4				
C_3C_4			3 >4	3 >4	3 >4	3 >4				

[1]
A = Knot Tying
B = Ship Routing
C = Letter Writing

1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

TABLE 6

PER CENT OF BLACK AND WHITE LEADERS' INITIATIONS TO THEMSELVES IN BALES CATEGORIES BY TASK AND GROUP TYPE

GROUPS

Task	Category[1]	St. Dev.	Black-Mixed G_1 (N=11)	Black-Opposite G_2 (N=11)	White-Mixed G_3 (N=11)	White-Opposite G_4 (N=11)
Playing	1	7.972	0.0	4.55	1.27	.91
	2	6.932	0.0	0.0	0.0	5.00
	3	22.601	0.0	10.91	12.27	4.55
	4	22.156	9.09	3.64	9.09	0.0
Computing	1	15.521	0.0	6.09	9.36	1.00
	2	3.105	1.27	3.09	.36	0.00
	3	8.356	5.18	1.82	1.18	2.73
	4	26.112	9.09	9.09	0.0	9.09
Writing	1	15.746	2.91	11.45	3.82	3.73
	2	1.162	.64	1.09	.64	0.00
	3	8.147	2.73	7.18	5.45	.64
	4	21.370	2.45	10.36	12.27	6.91

[1] Category 1 = Positive Social Emotional
Category 2 = Directive
Category 3 = Non Directive
Category 4 = Negative Social Emotional

TABLE 7

COMPARISON OF F VALUES OF BLACK AND WHITE LEADERS OF DIFFERENT GROUP TYPES INITIATIONS TO THEMSELVES BY TASK-CATEGORY COMBINATIONS

Task-Category[2] Combinations	GROUPS[1] G_1 vs G_2 (N=22)	G_3 vs G_4 (N=22)	G_1 vs G_3 (N=22)	G_2 vs G_4 (N=22)	G_{1+2} vs G_{3+4} (N=22)	G_{1+3} vs G_{2+4} (N=22)
A_1	1.79	0.01	0.14	1.14	.24	.76
A_2	0.00	2.86	0.00	2.86	1.43	1.43
A_3	1.28	0.64	1.62	0.44	0.19	0.05
A_4	0.33	0.93	0.00	0.15	0.07	1.19
B_1	0.85	1.60	2.00	0.59	0.21	0.06
				2>4	1 + 2 > 3 + 4	
B_2	1.89	0.08	0.47	5.45*	4.56*	0.60
B_3	0.89	0.19	1.26	0.07	0.38	0.13
B_4	0.00	0.67	0.67	0.00	0.33	0.33
C_1	1.62	0.00	0.02	1.32	0.52	0.79
				2>4		
C_2	0.84	1.65	0.00	4.85*	2.42	0.07
C_3	1.64	1.92	0.62	3.55	0.60	0.01
C_4	0.75	0.35	1.16	0.14	0.24	0.04

[1] G_1 = Black-Mixed
G_2 = Black-Opposite
G_3 = White-Mixed
G_4 = White-Opposite

[2] A = Knot Tying
B = Ship Routing
C = Letter Writing

1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

TABLE 8

F VALUES OF BLACK AND WHITE LEADERS WITHIN A GROUP TYPE INITIATIONS TO THEMSELVES BY TASK TYPE WITHIN CATEGORY TYPE

Tasks Within Categories [1]	GROUPS G_1 Black-Mixed (N=11)	G_2 Black-Opposite (N=11)	G_3 White-Mixed (N=11)	G_4 White-Opposite (N=11)
A_1B_1	0.00	0.08	2.20	0.00
A_1C_1	0.27	1.54	0.21	0.26
B_1C_1	0.21	0.70	0.75	0.18
A_2B_2	0.31	1.82	0.03	A>B 4.77*
A_2C_2	0.09	0.26	0.09	A?C 5.57*
B_2C_2	0.46	B?C 4.50*	0.09	0.00
A_3B_3	0.51	1.56	2.32	0.06
A_3C_3	0.25	0.46	1.54	0.99
B_3C_3	0.47	2.26	1.44	0.34
A_4B_4	0.00	0.26	.74	0.74
A_4C_4	0.46	0.48	0.11	0.50
B_4C_4	0.48	0.02	1.65	0.52

[1]
A = Knot Tying
B = Ship Routing
C = Letter Writing

1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

TABLE 9

F VALUES OF BLACK AND WHITE LEADERS WITHIN A GROUP TYPE - INITIATIONS TO THEMSELVES BY CATEGORIES WITHIN TASK TYPE

Categories Within Tasks[1]	GROUPS G_1 Black-Mixed (N-11)	G_2 Black-Opposite (N=11)	G_3 White-Mixed (N=11)	G_4 White-Opposite (N=11)
A_1A_2	0.00	1.99	-0.16	1.61
A_1A_3	0.00	0.76	2.27	0.25
A_1A_4	1.60	0.02	1.18	0.02
A_2A_3	0.00	2.29	2.90	0.00
A_2A_4	1.69	0.27	1.69	0.51
A_3A_4	0.99	0.63	0.12	0.25
B_1B_2	0.07	0.41	3.67	0.05
B_1B_3	0.91	0.62	2.27	0.10
B_1B_4	0.95	0.10	1.01	0.75
B_2B_3	3 > 2* 4.00	0.42	0.18	1.95
B_2B_4	0.94	0.56	0.00	1.27
B_3B_4	0.21	0.73	0.02	0.56
C_1C_2	0.23	1 > 2 4.74*	0.45	0.61
C_1C_3	0.00	0.81	0.12	0.42
C_1C_4	0.00	0.02	1.03	0.15
C_2C_3	0.66	3 > 2* 5.64	3.53	0.06
C_2C_4	0.08	2.06	3.24	1.14
C_3C_4	0.00	0.19	0.86	0.73

[1]
A = Knot Tying
B = Ship Routing
C = Letter Writing

1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

TABLE 10

PER CENT OF BLACK AND WHITE LEADERS INITIATIONS TO ALL GROUP MEMBERS IN BALES CATEGORIES BY TASK AND GROUP TYPE

GROUPS

Task	Category[1]	St. Dev.	Black-Mixed G_1 (N=11)	Black-Opposite G_2 (N=11)	White-Mixed G_3 (N=11)	White-Opposite G4 (N=11)
A Knot Tying	1	2.816	0.0	0.0	1.36	1.45
	2	15.700	23.18	20.45	20.00	28.55
	3	33.771	19.64	15.18	26.00	25.00
	4	8.118	0.0	1.82	0.00	4.55
B Ship Routing	1	21.632	2.27	10.73	9.09	0.00
	2	20.751	49.55	47.64	59.18	51.00
	3	31.947	43.73	29.73	47.73	35.36
	4	17.423	0.00	5.27	9.09	0.00
C Letter Writing	1	17.024	10.45	11.09	12.09	6.18
	2	19.817	53.00	51.63	58.09	44.45
	3	20.153	49.36	36.82	47.00	37.91
	4	24.316	18.64	14.55	7.91	12.00

[1]Category 1 = Positive Social Emotional
Category 2 = Directive
Category 3 = Non Directive
Category 4 = Negative Social Emotional

TABLE 11

COMPARISON OF F VALUES OF BLACK AND WHITE LEADERS OF DIFFERENT GROUP TYPES INITIATIONS TO ALL GROUP MEMBERS BY TASK-CATEGORY COMBINATIONS

Task-Category[2] Combinations	G_1 vs G_2 (N=22)	G_3 vs G_4 (N=22)	G_1 vs G_3 (N=22)	G_2 vs G_4 (N=22)	G_{1+2} vs G_{3+4} (N=22)	G_{1+3} vs G_{2+4} (N=22)
A_1	0.00	0.01	1.29	1.47	2.75	0.00
A_2	0.17	1.63	0.23	1.46	0.27	0.38
A_3	0.10	0.00	0.20	0.46	0.63	0.07
A_4	0.28	1.72	0.00	0.62	0.31	1.69
B_1	0.84	0.97	0.55	1.35	0.09	0.00
B_2	0.05	0.86	1.19	0.14	1.08	0.65
B_3	1.06	0.82	0.09	0.17	0.25	1.87
B_4	0.50	1.50	1.50	0.50	0.13	0.13
C_1	0.01	0.66	0.05	0.46	0.10	0.26
C_2	0.03	2.60	0.36	0.72	0.03	1.58
C_3	2.13	1.12	0.08	0.02	0.01	3.17
C_4	0.16	0.16	1.07	0.06	0.82	0.00

[1] G_1 = Black-Mixed
G_2 = Black-Opposite
G_3 = White-Mixed
G_4 = White-Opposite

[2] A = Knot Tying
B = Ship Routing
C = Letter Writing

1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

TABLE 12

F VALUES OF BLACK AND WHITE LEADERS WITHIN A GROUP TYPE INITIATIONS TO ALL GROUP MEMBERS BY TASK TYPE WITHIN CATEGORY TYPE

Tasks Within Categories [1]	G_1 Black-Mixed (N=11)	G_2 Black-Opposite (N=11)	G_3 White-Mixed (N=11)	G_4 White-Opposite (N=11)
A_1B_1	0.12	2.62	1.36	0.05
	C>A	C>A	C>A	
A_1C_1	4.16*	4.68*	4.38*	0.85
B_1C_1	0.90	0.00	0.12	0.51
	B>A	B>A	B>A	B>A
A_2B_2	19.47*	20.70*	43.00*	14.12*
	B>A	C>A	C>A	C>A
A_2C_2	28.96*	31.67*	47.26*	8.25*
B_2C_2	0.22	0.29	0.02	0.78
A_3B_3	3.97	1.44	3.23	0.74
	C>A	C>A	C>A	
A_3C_3	8.67*	4.59*	4.33*	1.64
B_3C_3	0.23	0.36	0.00	0.05
A_4B_4	0.00	0.41	2.86	0.72
	C>A			
A_4C_4	5.64*	2.63	1.02	0.90
	C>B			
B_4C_4	4.21*	1.04	0.02	1.75

[1]
A = Knot Tying
B = Ship Routing
C = Letter Writing

1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

TABLE 13

F VALUES OF BLACK AND WHITE LEADERS WITHIN A GROUP TYPE INITIATIONS TO ALL GROUP MEMBER'S BY CATEGORIES WITHIN TASK TYPE

Categories Within Tasks[1]	GROUPS			
	G_1 Black-Mixed (N=11)	G_2 Black-Opposite (N=11)	G_3 White-Mixed (N=11)	G_4 White-Opposit (N=11)
	2 > 1	2>1	2>1	2>1
A_1A_2	24.80*	19.31*	16.03*	33.87*
			3>1	3 1
A_1A_3	3.94	2.36	6.21*	5.67*
A_1A_4	0.00	0.47	0.26	1.36
A_2A_3	0.12	0.26	0.34	0.12
	2> 4	2>4	2>4	2>4
A_2A_4	15.33*	9.91*	11.41*	16.43*
			3 4	
A_3A_4	3.30	1.53	5.79*	3.58
		2>1	2>1	2>1
B_1B_2	31.70*	19.32*	35.59*	36.89*
	3> 1		3>1	3>1
B_1B_3	15.47*	3.25	13.44*	11.26*
B_1B_4	0.07	0.41	0.00	0.00
B_2B_3	0.34	3.27	1.34	2.49
	2> 4	2>4	2>4	2>4
B_2B_4	31.51*	23.04*	32.21*	33.38*
	3> 4	3>4	3>4	3>4
B_3B_4	18.97	5.93*	14.81*	12.41*
	2>1	2>1	2>1	2>1
C_1C_2	36.62*	33.25*	42.80*	29.61*
	3>1	3>1	3>1	3>1
C_1C_3	26.70*	11.68*	21.50*	17.76*
C_1C_4	1.05	0.19	0.27	0.53
		2> 3		
C_2C_3	0.33	5.47*	3.06	1.07
	2>4	2>4	2>4	2>4
C_2C_4	13.10*	15.26*	27.93*	11.68*
	3>4	3>4	3>4	3>4
C_3C_4	11.12*	5.84*	18.00*	7.91*

[1]
A = Knot Tying
B = Ship Routing
C = Letter Writing

1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

TABLE 14

PER CENT OF BLACK AND WHITE LEADERS INITIATIONS TO INDIVIDUALS IN BALES CATEGORIES BY TASK AND GROUP TYPE

Task	Category[1]	St. Dev.	GROUPS Black-Mixed G_1 (N=11)	Black-Opposite G_2 (N=11)	White-Mixed G_3 (N=11)	White-Opposite G_4 (N=11)
A Knot Tying	1	30.000	33.27	95.45	53.82	88.55
	2	25.370	42.45	79.55	44.73	66.45
	3	40.635	21.73	64.82	24.27	52.27
	4	27.562	11.36	12.73	9.09	4.55
B Ship Routing	1	41.801	28.82	46.82	37.18	89.91
	2	18.100	25.73	49.27	20.00	49.00
	3	29.904	26.82	59.36	22.82	61.91
	4	32.811	0.00	31.09	15.91	9.09
C Letter Writing	1	22.313	53.36	77.45	27.45	90.09
	2	20.087	30.27	47.27	12.09	55.55
	3	19.307	22.91	56.00	17.64	61.45
	4	35.184	37.36	66.00	28.45	72.00

[1] Category 1 = Positive Social Emotional
Category 2 = Directive
Category 3 = Non Directive
Category 4 = Negative Social Emotional

TABLE 15

COMPARISON OF F VALUES OF BLACK AND WHITE LEADERS OF DIFFERENT GROUP TYPES - INITIATIONS TO INDIVIDUALS BY TASK-CATEGORY

Task-Category Combinations[2]	GROUPS[1] G_1 vs G_2 (N=22)	G_1 vs G_3 (N=22)	G_2 vs G_4 (N=22)	G_3 vs G_4 (N=22)	G_{1+2} vs G_{3+4} (N=22)	G_{1+3} vs G_{2+4} (N=22)
A_1	2>1 23.63*	2.58	.29	4>3 7.37*	.57	2+4>1+3 28.70*
A_2	2>1 11.76*	.04	1.46	4>3 4.03*	.50	2+4>1+3 14.78*
A_3	2>1 6.18*	.02	.52	2.61	.17	2+4>1+3 8.42*
A_4	.01	.04	.48	.15	.40	.04
B1	1.02	.22	4>2 5.84*	4>3 8.75*	3+4>1+2 4.17*	2+4>1+3 7.87*
B_2	2>1 9.31*	.55	.00	4>3 14.12*	.30	2+4>1+3 23.18*
B_3	2>1 6.51*	.10	.04	4>3 9.40*	.01	2+4>1+3 15.78*
B_4	2>1 4.94*	1>3 1.29	2.47	.24	.09	1.50
C_1	2>1 6.41*	1>3 7.42*	1.76	4>3 43.34*	.97	2+4>1+3 41.55*
C_2	3.94	1>3 4.51*	.93	4>3 25.74*	.67	2+4>1+3 24.91*
C_3	2>1 16.16*	.41	.44	4>3 28.33*	.00	2+4>1+3 43.64*
C_4	3.64	.35	.16	4>3 8.42*	.02	2+4>1+3 11.58*

[1] G_1 = Black-Mixed
G_2 = Black-Opposite
G_3 = White-Mixed
G_4 = White-Opposite

[2] A = Knot Tying
B = Ship Routing
C = Letter Writing

1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

TABLE 16

F VALUES OF BLACK AND WHITE LEADERS
WITHIN A GROUP TYPE INITIATIONS TO INDIVIDUALS
BY TASK TYPE WITHIN CATEGORY TYPE

Tasks Within Categories[1]	GROUPS G_1 Black-Mixed (N=11)	G_2 Black-Opposite (N=11)	G_3 White-Mixed (N=11)	G_4 White-Opposite (N=11)
		A B		
A_1B_1	0.09	10.85*	1.27	0.01
			A>C	
A_1C_1	2.53	2.03	4.35*	0.15
		C>B		
B_1C_1	3.22	5.02*	0.51	0.00
		A>B	A>B	A>B
A_2B_2	3.79	12.43*	8.30*	4.13*
		A>C	A>C	
A_2C_2	1.88	13.19*	13.49*	1.51
B_2C_2	0.44	0.09	1.34	0.92
A_3B_3	0.14	0.16	0.01	0.51
A_3C_3	0.01	0.49	0.28	0.53
B_3C_3	0.13	0.09	0.22	0.00
A_4B_4	0.90	2.36	0.33	0.14
		C>A		C>A
A_4C_4	3.89	16.34*	2.16	26.19*
	C>B	C>B		C>B
B_4C_4	8.01*	6.99*	0.90	23.20*

[1]
A = Knot Tying
B = Ship Routing
C = Letter Writing

1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

TABLE 17

F VALUES OF BLACK AND WHITE LEADERS WITHIN A GROUP TYPE INITIATIONS TO INDIVIDUALS BY CATEGORIES WITHIN TASK TYPE

Categories Within Tasks[1]	GROUPS G_1 Black-Mixed (N=11)	G_2 Black-Opposite (N=11)	G_3 White-Mixed (N=11)	G_4 White-Opposite (N=11)
A_1A_2	0.75	2.26	0.74	4.36*
		1>3	1>3	1>3
A_1A_3	0.83	5.87*	5.46*	8.23*
	1>4		1>4	1>4
A_1A_4	4.35*	62.05	18.13*	63.95*
A_2A_3	3.97	2.00	3.86	1.86
	2>4	2>4	2>4	2>4
A_2A_4	10.24*	47.29*	13.45*	40.60*
		3>4		3>4
A_3A_4	0.63	16.03*	1.36	13.45*
				1>2
B_1B_2	0.06	.03	1.71	9.72*
B_1B_3	0.02	.63	0.82	3.12
				1>4
B_1B_4	3.10	.02	1.69	24.38*
B_2B_3	0.01	1.17	0.09	1.92
	2>4			2>4
B_2B_4	4.88*	2.44	0.12	11.75*
				3>4
B_3B_4	3.59	3.99	0.24	13.91*
	1>2	1>2	1>2	1>2
C_1C_2	9.13*	15.60*	4.04*	20.43*
	1>3	1>3		1>3
C_1C_3	12.65*	6.28*	1.31	11.18*
C_1C_4	1.57	.80	0.07	2.00
C_2C_3	1.62	2.27	0.92	1.04
C_2C_4	0.33	2.30	1.76	1.78
C_3C_4	1.48	.71	0.83	.79

[1] A = Knot Tying
B = Ship Routing
C = Letter Writing

1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

TABLE 18

COMPARISON OF PER CENT OF BLACK LEADERS INITIATIONS IN MIXED GROUPS TO BLACK AND WHITE GROUP MEMBERS BY TASK AND CATEGORY TYPE

Task	Category[1]	Standard Deviation	Mean% Difference (B-W) (N=11)
A Knot Tying	1	50.80	-5.18
	2	54.51	8.09
	3	48.50	-0.55
	4	35.03	4.55
B Ship Routing	1	64.39	5.36
	2	28.28	2.27
	3	37.70	2.55
	4	40.45	-18.18
C Letter Writing	1	35.09	20.09
	2	31.60	14.18
	3	29.20	-2.09
	4	57.61	-4.18

[1] 1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

TABLE 19

COMPARISON OF PER CENT OF WHITE LEADERS INITIATIONS IN MIXED GROUPS TO BLACK AND WHITE GROUP MEMBERS BY TASK AND CATEGORY TYPE

Task	Category [1]	Standard Deviation	Mean% Difference (B-W) (N=11)	
A Knot Tying	1	50.64	28.45	
	2	53.31	9.45	
	3	64.55	-4.09	
	4	44.72	0.00	
B Ship Routing	1	70.49	11.00	
	2	21.45	-0.45	
	3	48.65	-5.45	
	4	32.33	13.64	
C Letter Writing	1	45.76	-29.18	W>B
	2	18.85	-17.09	W>B
	3	23.78	-12.27	
	4	44.32	6.18	

[1]
1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

both group members and individuals within various task-category combinations. The raw per cent of black and white leaders of these groups initiations to themselves, both members, and specific individuals are reported in Tables 6, 10 and 14 respectively while the actual comparisons of F values are presented in Tables 9, 13, and 17 respectively.

Differences in Initiations to Self - - -

Table 5 indicates that there were no significant differences between black and white led groups or between leaders of racially mixed versus opposite race groups. Likewise, there were no differences within groups led by white leaders. Even among black leaders there were only 3 instances where significant differences in the use of categories within tasks occurred. Two of these differences were found in the letter writing assignment and they indicated that black leaders of white subordinates emitted more positive social emotional and non directive acts than directive ones to themselves. Black leaders of mixed groups were observed to show more non directive than directive acts to themselves in the ship routing problem (See Table 9).

Differences in Initiations to Both Members - - -

Table 5 shows that 43 of the 72 comparisons of black and white leaders initiations to both members by categories within tasks were significantly different. Although at first glance the large number of differences may appear extraordinary, all but one of these indicate the well documented (Bales, 1950) tendency of task oriented comments (directive or non directive) to dominate social emotional oriented comments whether they be positive or negative. Thus, both black and white leaders, irrespective of the type of group they supervised, used far more directive as compared with both positive and negative social emotional comments during each of the three tasks. The reported differences also are quite consistent among white and among black leaders irrespective of the type of groups they supervised Thus, white leaders always emitted more non directive than positive social emotional comments and with the sole exception of the white leaders of opposite groups

in the knot tying problem always emitted more non directive as compared with negative social emotional comments (See Table 13). Black leaders, on the other hand, tended to initiate more non directive acts than either positive or negative social emotional comments in both the ship routing and letter writing assignments although this tendency did not occur in the knot tying assignment.

Differences in Intiations to Individuals - - -

Table 5 shows 26 of the 72 comparisons of black and white leaders initiations to individuals between categories and within group and task types were significantly different. Although the number of significant differences in the leaders comments to individuals as compared with their comments to all group members were smaller, the more important finding is the change in direction which the differences took. Although the tendency to emit more directive than negative social emotional comments prevailed, leaders of all groups tended to employ more positive social emotional comments than either directive or non directive acts (See Table 17). This was particularly evident during the letter writing assignment. Black leaders evidenced more consistent behavior irrespective of the type of group they led than did white leaders whose behavior varied considerably when they supervised members of the opposite race.

Since leaders initiations to specific individuals in their groups is particularly important, separate analyses were run, in the mixed groups, of black and white leaders initiations to members of their own versus the opposite race. Table 18 indicates that black leaders did not differentiate between their black and white subordinates in their initiations over any of the three tasks. Table 19 shows that white leaders gave more positive social emotional and directive comments to their white subordinates than their black subordinates in the letter writing assignment, although they did not differentiate among their subordinates in either the knot tying or ship routing assignments.

Summary - - -

The results of the laboratory study indicate that the largest number of significant differences (72 of 136) occurred between categories and within group and task types with approximately an equal number of differences occuring between groups and between task types. One half of the differences occurred in the leaders initiations to specific individuals within their groups although these differences, in general, did not occur along racial lines. Few differences occurred in the leaders initiations to themselves. One interesting tendency which occurred was that leaders, irrespective of race, behaved differently when they interacted with the group en toto as compared with a specific individual within their groups. Although this difference manifests itself more when a leader is working with members of the opposite than with mixed groups, leaders tended to be more directive to the group as a whole in the ship routing and letter wiring assignment and to individuals in the knot tying task. This tendency to differentiate leader behavior toward the group as a whole as compared to individual group members further manifests itself when individual categories are compared. When dealing with the group as a whole, leaders tend to be more task than social emotionally oriented while their behavior is more social emotionally oriented when they deal with their subordinates on a one to one basis.

The Field Study

In the field study, leaders of both races supervised four different racially mixed groups: a dyad consisting of one black and one white and three four member groups consisting of one black and three whites, two blacks and two whites, and three blacks and one white. For the purposes of this paper, only the two man group will be considered. This will enable us to compare the field results with the laboratory results.

The results of the field study will be reported in the following order: differences between groups, between tasks, and between categories.

Between Group Differences

Table 20 summarizes the significant differences between black and white leaders of the mixed dyads initiations to themselves, all group members, and individuals within various task-category combinations. The raw per cent of black and white leaders of these groups initiations to themselves, both group members, and individuals in their groups are reported in Tables 23, 27, and 31 respectively, while the actual comparisons of F values between black and white leaders of these mixed dyads initiations to themselves, both group members, and individuals are presented in Tables 24, 28 and 32 respectively.

Differences in Initiations to Self - - -

The F values shown in Table 24 comparing black and white leaders of racially mixed groups initiations to themselves by task-category combinations indicate that there were no significant differences between the leaders. This fact is illustrated in Table 20 by the use of dashes opposite each task-category combination.

Differences in Initiations to Both Members - - -

The comparison of F values of black and white leaders initiations to all group members by task-category combination shown in Table 28 and summarized in Table 20 also indicates that there were no significant differences between the leaders use of the various categories.

TABLE 20

SUMMARY OF SIGNIFICANT DIFFERENCES BETWEEN BLACK AND WHITE LEADERS INITIATIONS TO THEMSELVES, ALL GROUP MEMBERS, AND INDIVIDUALS BETWEEN GROUPS AND WITHIN TASK-CATEGORY COMBINATIONS IN FIELD SETTING

Task-Category Combinations	G_1 Black-Mixed	vs	G_2 White-Mixed
Knot Tying	Self	Both	Ind
- Positive Social Emotional, A_1	-	-	-
- Directive, A_2	-	-	-
- Non Directive, A_3	-	-	-
- Negative Social Emotional, A_4	-	-	-
Ship Routing			
- Positive Social Emotional, B_1	-	-	-
- Directive, B_2	-	-	-
- Non Directive, B_3	-	-	-
- Negative Social Emotional, B_4	-	-	-

Differences in Initiations to Individuals - - -

A comparison of F values of black and white leaders initiations to individuals by task-category combinations shown in Table 32 and summarized in Table 20 again indicates no significant differences between the leaders usage of the various categories.

As Table 20 amply illustrates, no significant differences were found between black and white leaders initiations to themselves, all group members or individuals within the task-category combinations utilized in the field study.

Between Task Differences

Table 21 summarizes the significant differences between black and white leaders initiations to themselves, all group members, and individuals between tasks and within category and group types in the field study. The raw per cent of black and white leaders of these groups initiations to themselves, both group members, and specific individuals are reported in Tables 23, 27 and 31 respectively, while the actual comparison of F values are presented in Tables 25, 29, and 33 respectively.

Differences in Initiations to Self

Table 21 indicates that there were no significant differences between black and white leaders initiations to themselves when they supervised subordinates of mixed racial groups. Although none of the F values reported in Table 25 reached the .05 level of significance, white leaders of mixed groups use of the positive social emotional category between tasks A and tasks B were significant at the .10 level. Here it was found that white leaders seemed to emit more positive social emotional comments in the ship routing task than they did in the knot tying task.

Differences in Initiations to Both Members - - -

Table 21 indicates no significant difference occurred in the white leaders use of any of the four categories between tasks. Black leaders of mixed groups, however, emitted more positive social emotional acts in the knot tying assignment

SUMMARY OF SIGNIFICANT DIFFERENCES BETWEEN BLACK AND WHITE LEADERS INITIATIONS TO THEMSELVES, ALL GROUP MEMBERS, AND INDIVIDUALS BETWEEN TASKS AND WITHIN CATEGORY AND GROUP TYPES IN FIELD SETTING

Tasks Within Category[1]	Self G_1 Black-Mixed	Self G_2 White-Mixed	Both G_1 Black-Mixed	Both G_2 White-Mixed	Ind G_1 Black-Mixed	Ind G_2 White-Mixed
Positive Social Emotional A_1B_1	—	—	$A_1 > B_1$	—	—	—
Directive A_2B_2	—	—	$B_2 > A_2$	—	$A_2 > B_2$	—
Non Directive A_3B_3	—	—		—	$B_3 > A_3$	$B_3 > A_3$
Negative Social Emotional A_4B_4	—	—	—	—	—	—

[1] A = Knot Tying
B = Ship Routing

than they did in the ship routing assignment. On the other hand, the same leaders emitted more directive acts in the ship routing assignment than they did in the knot tying assignment. There were no differences among black leaders of mixed groups in their use of non directive or negative social emotional comments in either of the two tasks (Table 29).

Differences in Initiations to Individuals - - -

Table 21 indicates that there were significant differences between both black and white leaders use of the categories when initiating to individuals in their groups between tasks. As Table 33 shows, black leaders of mixed groups tended to use more directive acts in the knot tying assignment than they did in the ship routing assignment. On the other hand, the same leaders used more non directive acts in the ship routing assignment than they employed in the knot tying task. This latter tendency was also illustrated among white leaders of mixed groups.

Between Category Differences

Table 22 summarizes the significant differences which were found between black and white leaders of racially mixed groups initiations to themselves, both group members, and individuals within various task-category combinations. The raw per cent of black and white leaders initiations to themselves, both members, and specific individuals are reported in Tables 23, 27, and 31 respectively, while the actual comparison of F values are presented in Tables 26, 30, and 34, respectively.

Differences in Initiations to Self - - -

The F values presented in Table 26 indicate that there were no differences among the white leaders of mixed groups in their use of the various categories in either the knot tying or ship routing tasks. There was one significant difference within black led groups. Black leaders used more non directive acts as compared to directive acts in the ship routing assignment.

Differences in Initiations to Both Members - - -

Table 22 indicates that there were significant differences between both

TABLE 22

SUMMARY OF SIGNIFICANT DIFFERENCES BETWEEN BLACK AND WHITE LEADERS INITIATIONS TO THEMSELVES, ALL GROUP MEMBERS, AND INDIVIDUALS BETWEEN CATEGORIES AND WITHIN GROUP AND TASK TYPES IN FIELD SETTING

Categories Within Tasks[1]	Self		Both		Ind	
	G_1 Black-Mixed	G_2 White-Mixed	G_1 Black-Mixed	G_2 White-Mixed	G_1 Black-Mixed	G_2 White-Mixed
Knot Tying - A_1A_2				$A_2 > A_1$		
A_1A_3				$A_3 > A_1$		$A_1 > A_3$
A_1A_4			$A_1 > A_4$			
A_2A_3					$A_2 > A_3$	
A_2A_4			$A_2 > A_4$	$A_2 > A_4$		
A_3A_4				$A_3 > A_4$		
Ship Routing - B_1B_2			$B_2 > B_1$	$B_2 > B_1$	$B_1 > B_2$	$B_1 > B_2$
B_1B_3			$B_3 > B_1$	$B_3 > B_1$		
B_1B_4					$B_1 > B_4$	
B_2B_3	B_3 B_2		$B_2 > B_3$		$B_3 > B_2$	$B_3 > B_2$
B_2B_4			$B_2 > B_4$	$B_2 > B_4$		
B_3B_4			$B_3 > B_4$	$B_3 > B_4$	$B_3 > B_4$	

[1] Category 1 = Positive Social Emotional
Category 2 = Directive
Category 3 = Non Directive
Category 4 = Negative Social Emotional

TABLE 23

PER CENT OF BLACK AND WHITE LEADERS
INITIATIONS TO THEMSELVES IN BALES CATEGORIES
BY TASK AND GROUP TYPE IN FIELD SETTING

Task	Category[1]	Std. Dev.	G_1 Black-Mixed	G_2 White-Mixed
A Knot Tying	1	21.58	3.65	10.75
	2	39.76	0.00	2.00
	3	34.44	0.00	8.25
	4	-	0.00	12.50
B Ship Routing	1	4.78	1.25	0.00
	2	26.06	0.37	0.37
	3	30.36	2.12	2.12
	4	6.25	8.75	8.75

[1]
Category 1 = Positive Social Emotional
Category 2 = Directive
Category 3 = Non Directive
Category 4 = Negative Social Emotional

TABLE 24

COMPARISON OF F VALUES OF BLACK AND WHITE LEADERS OF DIFFERENT GROUP TYPES INITIATIONS TO THEMSELVES BY TASK-CATEGORY COMBINATIONS IN FIELD SETTING

Task-Category Combinations		GROUPS G_1 Black-Mixed	vs	G_2 White-Mixed
Knot Tying	- Positive Social Emotional,	A_1	0.95	
	- Directive,	A_2	2.11	
	- Non Directive,	A_3	2.33	
	- Negative Social Emotional,	A_4	1.00	
Ship Routing	- Positive Social Emotional,	B_1	1.00	
	- Directive,	B_2	1.00	
	- Non Directive,	B_3	0.34	
	- Negative Social Emotional,	B_4	0.07	

TABLE 25

F VALUES OF BLACK AND WHITE LEADERS
WITHIN A GROUP TYPE INITIATIONS TO THEMSELVES
BY TASK TYPE WITHIN CATEGORY TYPE IN FIELD SETTING

	GROUPS	
Tasks Within Category[1]	G_1 Black-Mixed	G_2 White-Mixed
Positive Social Emotional		
A_1B_1	0.20	4.11
Directive		
A_2B_2	0.00	2.35
Non Directive		
A_3B_3	0.49	2.06
Negative Social Emotional		
A_4B_4	1.07	0.10

[1] A = Knot Tying
B = Ship Routing

TABLE 26

F VALUES OF BLACK AND WHITE LEADERS
WITHIN A GROUP TYPE INITIATIONS TO THEMSELVES
BY CATEGORIES WITHIN TASK TYPE IN FIELD SETTING

Categories Within Tasks[1]		GROUPS G_1 Black-Mixed	G_2 White-Mixed
Knot Tying -	A_1A_2	0.44	2.54
	A_1A_3	0.25	0.12
	A_1A_4	0.11	0.02
	A_2A_3	0.00	3.42
	A_2A_4	0.00	1.33
	A_3A_4	0.00	0.17
Ship Routing -	B_1B_2	1.83	0.17
	B_1B_3	1.76	2.60
	B_1B_4	1.27	0.77
	B_2B_3	3>2 8.16*	2.78
	B_2B_4	1.64	0.73
	B_3B_4	0.93	0.45

[1]Category 1 = Positive Social Emotional
Category 2 = Directive
Category 3 = Non Directive
Category 4 = Negative Social Emotional

TABLE 27

PER CENT OF BLACK AND WHITE LEADERS
INITIATIONS TO ALL GROUP MEMBERS IN BALES
CATEGORIES BY TASK AND GROUP TYPE IN FIELD SETTING

Task	Category[1]	Std. Dev.	G_1 Black-Mixed	G_2 White-Mixed
A Knot Tying	1	14.61	18.37	4.12
	2	2.75	30.25	51.25
	3	10.80	13.75	42.12
	4	25.00	0.00	0.00
B Ship Routing	1	2.50	0.62	3.75
	2	0.75	62.50	62.50
	3	3.01	42.25	42.25
	4	27.76	0.00	3.12

[1] Category 1 = Positive Social Emotional
Category 2 = Directive
Category 3 = Non Directive
Category 4 = Negative Social Emotional

TABLE 28

COMPARISON OF F VALUES OF BLACK AND WHITE LEADERS OF DIFFERENT GROUP TYPES INITIATIONS TO ALL GROUP MEMBERS BY TASK-CATEGORY COMBINATIONS IN FIELD SETTING

Task-Category Combination	G_1 Black-Mixed	vs	G_2 White-Mixed
Knot Tying - Positive Social Emotional,	A_1	1.74	
- Directive,	A_2	1.12	
- Non Directive,	A_3	2.07	
- Negative Social Emotional,	A_4	0.00	
Ship Routing - Positive Social Emotional,	B_1	1.32	
- Directive,	B_2	1.13	
- Non Directive,	B_3	0.00	
- Negative Social Emotional,	B_4	1.00	

TABLE 29

F VALUES OF BLACK AND WHITE LEADERS
WITHIN A GROUP TYPE INITIATIONS TO ALL GROUP MEMBERS
BY TASK TYPE WITHIN CATEGORY TYPE IN FIELD SETTING

Tasks Within Category[1]	G_1 Black-Mixed	G_2 White-Mixed
Positive Social Emotional	A>B	
A_1B_1	5.87*	0.01
Directive	B>A	
A_2B_2	15.96*	0.95
Non Directive		
A_3B_3	2.26	0.00
Negative Social Emotional		
A_4B_4	0.00	2.00

[1] A = Knot Tying
B = Ship Routing

TABLE 30

F VALUES OF BLACK AND WHITE LEADERS
WITHIN A GROUP TYPE INITIATIONS TO ALL GROUP MEMBERS
BY CATEGORIES WITHIN TASK TYPE IN FIELD SETTING

Categories Within Tasks[1]		G_1 Black-Mixed	G_2 White-Mixed
			2 > 1
Knot Tying -	A_1A_2	0.64	10.06*
			3 > 1
	A_1A_3	0.09	5.95*
		1 > 4	
	A_1A_4	5.80*	0.29
	A_2A_3	0.77	0.24
		2 > 4	2 > 4
	A_2A_4	4.63*	13.29*
			3 > 4
	A_3A_4	0.97	9.12*
		2 > 1	2 > 1
Ship Routing -	B_1B_2	63.08*	38.43*
		3 > 1	3 > 1
	B_1B_3	12.71*	11.16*
	B_1B_4	0.04	0.01
		2 > 3	
	B_2B_3	12.00*	4.20
		2 > 4	2 > 4
	B_2B_4	70.42*	42.56*
		3 > 4	3 > 4
	B_3B_4	15.09*	13.02*

[1]Category 1 = Positive Social Emotional
Category 2 = Directive
Category 3 = Non Directive
Category 4 = Negative Social Emotional

TABLE 31

PER CENT OF BLACK AND WHITE LEADERS INITIATIONS TO INDIVIDUALS IN BALES CATEGORIES BY TASK AND GROUP TYPE IN FIELD SETTING

Task	Category[1]	Std. Dev.	G_1 Black-Mixed	G_2 White-Mixed
	1	35.65	25.12	43.37
A	2	40.50	44.25	32.50
Knot	3	13.87	5.00	7.25
Tying	4	45.90	30.50	25.00
	1	23.77	35.50	33.38
B	2	8.32	4.37	10.62
Ship	3	18.68	27.75	29.75
Routing	4	19.16	4.12	20.12

[1] Category 1 = Positive Social Emotional
Category 2 = Directive
Category 3 = Non Directive
Category 4 = Negative Social Emotional

TABLE 32

COMPARISON OF F VALUES OF BLACK AND WHITE LEADERS OF DIFFERENT GROUP TYPES INITIATIONS TO INDIVIDUALS BY TASK-CATEGORY COMBINATIONS IN FIELD SETTING

Task-Category Combinations	GROUPS		
Knot Tying	G_1 Black-Mixed	vs	G_2 White-Mixed
- Positive Social Emotional, A_1		1.05	
- Directive, A_2		0.34	
- Non Directive, A_3		0.11	
- Negative Social Emotional, A_4		0.06	
Ship Routing			
- Positive Social Emotional, B_1		0.03	
- Directive, B_2		2.26	
- Non Directive, B_3		0.05	
- Negative Social Emotional, B_4		2.79	

TABLE 33

F VALUES OF BLACK AND WHITE LEADERS
WITHIN A GROUP TYPE INITIATIONS TO INDIVIDUALS BY
TASK TYPE WITHIN CATEGORY TYPE IN FIELD SETTING

Tasks Within Category[1]	G_1 Black-Mixed	G_2 White-Mixed
Positive Social Emotional		
A_1B_1	0.67	0.62
Directive		
A_2B_2	A>B 6.73*	2.03
Non Directive		
A_3B_3	B>A 6.36*	B>A 6.23*
Negative Social Emotional		
A_4B_4	2.62	0.09

[1] A = Knot Tying
B = Ship Routing

TABLE 34

F VALUES OF BLACK AND WHITE LEADERS
WITHIN A GROUP TYPE INITIATIONS TO INDIVIDUALS BY
CATEGORIES WITHIN TASK TYPE IN FIELD SETTING

Categories Within Tasks[1]	G_1 Black-Mixed	G_2 White-Mixed
Knot Tying - A_1A_2	0.96	0.31
		1>3
A_1A_3	2.08	6.70*
A_1A_4	0.07	0.84
	2>3	
A_2A_3	6.20*	2.56
A_2A_4	0.54	0.16
A_3A_4	2.24	1.08
	1>2	1>2
Ship Routing - B_1B_2	11.27*	6.02*
B_1B_3	0.48	0.11
	1>4	
B_1B_4	9.65*	1.72
	3>2	3>2
B_2B_3	13.52*	9.05*
B_2B_4	0.00	2.45
	3>4	
B_3B_4	5.15*	0.86

[1]Category 1 = Positive Social Emotional
Category 2 = Directive
Category 3 = Non Directive
Category 4 = Negative Social Emotional

TABLE 35

COMPARISON OF PER CENT OF BLACK LEADERS INITIATIONS IN MIXED GROUPS TO BLACK AND WHITE GROUP MEMBERS BY TASK AND CATEGORY TYPE IN FIELD SETTING

Task	Category[1]	Standard Deviation	Mean % Difference (Black-White) (N = 8)
A Knot Tying	1	51.03	- 9.75
	2	66.98	-18.75
	3	3.54	1.25
	4	75.91	1.50
B Ship Routing	1	33.62	14.62
	2	25.49	14.87
	3	27.38	- 0.75
	4	35.68	16.75

[1] Category 1 = Positive Social Emotional
Category 2 = Directive
Category 3 = Non Directive
Category 4 = Negative Social Emotional

TABLE 36

COMPARISON OF PER CENT OF WHITE LEADERS INITIATIONS TO BLACK AND WHITE GROUP MEMBERS BY TASK AND CATEGORY TYPE IN FIELD SETTING

Task	Category[1]	Standard Deviation	Mean % Difference (Black-White) (N = 8)
A Knot Tying	1	62.35	14.12
	2	56.10	18.25
	3	41.93	-22.62
	4	64.09	12.50
B Ship Routing	1	39.63	-16.12
	2	27.14	-17.12
	3	15.32	2.62
	4	45.94	-35.37

[1]Category 1 = Positive Social Emotional
Category 2 = Directive
Category 3 = Non Directive
Category 4 = Negative Social Emotional

black and white leaders initiations to all group members between categories and within group and task types in the field study. Although these differences occurred in both tasks there were more differences in the ship routing than in the knot tying assignment. In the ship routing task, the differences which occurred within the black and white led groups tended to be the same. That is, both types of leaders tended to use task oriented comments more than emotionally oriented comments. Thus, they used both more directive and more non directive comments than either positive social emotional or negative social emotional comments. This tendency persisted in the knot tying assignment for the white leaders of mixed groups although it did not for the black leaders. Black leaders, on the other hand, did evidence a greater use of positive social emotional comments than negative social emotional comments (Table 30). Thus, the overall pattern does not seem to distinguish itself as much along racially lines as it does along the lines of using more task oriented rather than social emotionally oriented comments.

Table 22 indicates that of the 24 different tests between categories, 15 of them proved to be significant. Once again, it should be mentioned that previous research has documented the tendency for different amounts of usages of the various categories.

Differences in Initiations to Individuals - - -

Table 22 indicates that there were significant differences between both black and white leaders initiations to individuals between categories and within group and task types in the field study. Eight out of 24 tests proved significant here. Both black and white leaders of mixed groups in the ship routing task tended to use more positive social emotional comments than directive acts. They also employed more non directive acts than directive acts. Once again, the greatest number of differences, five of seven, occurred in the ship routing problem. It is interesting to note that when leaders comment to individuals, the positive social emotional categories tend to take on greater importance. It also appears that

when leaders in the ship routing assignment make initiations to their individual group members, non directive comments tend to outweigh directive comments.

Once again, black and white leaders initiations to members of their own versus the opposite race were compared. Tables 35 and 36 indicate that the leaders did not differentiate between their black and white subordinates in their initiations over either of the two tasks.

Summary - - -

The results of the field study indicate that the largest number of differences (24 of 29) occurred between categories and within group and task types with the remaining five differences occurring between tasks. No differences were found within groups led by black or white leaders. Over half the differences (17 of 29) were found in the leaders initiations to both group members. Eleven of the 29 differences occurred in the leaders initiations to individuals in their groups but none were revealed between members of the groups when they were divided along racial lines. The field study also indicated that both types of leaders tended to use more directive comments when addressing the group as a whole while using more social emotional comments when dealing with their group members on a one to one basis.

Comparison of Laboratory and Field Results

The purpose of this section of the paper is to compare the initiations of black and white leaders of racially mixed dyads to themselves, both members, and individuals in their groups in laboratory and field settings. The design of the two studies does not allow a comparison of how these leaders reacted toward dyads composed of the opposite race as this condition was not treated in the field study. Neither does the data enable us to compare their initiations in the letter writing task as this assignment was not undertaken in the field study. Thus, our comparison will be restricted to the supervision of mixed dyads performing the knot tying and ship routing problems. Following our established format, we will examine three different comparisons: between groups and within task-category combinations, between tasks within group and category types, and between categories within group and task types. Each of these comparisons will treat the leaders initiations to themselves, both members, and individuals.

It is important to note that the comparisons which follow do not measure initiations in the laboratory against those in the field for given task-category combinations. Rather, they report only the differences which occurred within one or the other setting and indicate whether or not these differences occurred in both settings. Thus, one can not conclude from this comparison that the leaders made more initiations in one of the categories for one of the tasks in the laboratory study than they did in the field study. It will tell us, however, whether the differences or lack of differences between two categories, for example, in the laboratory study, were also found in the field study.

Comparison Between Groups

Table 37 indicates that there were no significant differences between black or white leaders initiations to themselves, both group members, or individuals between groups and within task-category combinations on either the knot tying or ship routing problem in the laboratory or the field settings. For example, black leader

TABLE 37

COMPARISON OF SIGNIFICANT DIFFERENCES BETWEEN BLACK AND WHITE LEADERS OF MIXED GROUPS INITIATIONS TO THEMSELVES, ALL GROUP MEMBERS, AND INDIVIDUALS BETWEEN GROUPS AND WITHIN TASK-CATEGORY COMBINATIONS FOR LABORATORY AND FIELD SETTING

Task Category	Self				Both				Individuals			
	Black-Mixed vs White-Mixed				Black-Mixed vs White-Mixed				Black-Mixed vs White-Mixed			
	Lab N=11	Field N=8	Lab N=11	Field N=8	Lab N=11	Field N=8	Lab N=11	Field N=8	Lab N=11	Field N=8	Lab N=11	Field N=8
Knot Tying												
1 Positive Social Emotional	-	-	-	-	-	-	-	-	-	-	-	-
2 Directive	-	-	-	-	-	-	-	-	-	-	-	-
3 Non Directive	-	-	-	-	-	-	-	-	-	-	-	-
4 Negative Social Emotional	-	-	-	-	-	-	-	-	-	-	-	-
Ship Routing												
1 Positive Social Emotional	-	-	-	-	-	-	-	-	-	-	-	-
2 Directive	-	-	-	-	-	-	-	-	-	-	-	-
3 Non Directive	-	-	-	-	-	-	-	-	-	-	-	-
4 Negative Social Emotional	-	-	-	-	-	-	-	-	-	-	-	-

of mixed groups in the laboratory setting did not exhibit significant differences in the use of any of the categories in either task nor did the white leaders. The same was true in the field setting.

Comparison Between Tasks

Table 38 indicates that there were no significant differences between black or white leaders initiations to themselves in either the laboratory or field study when a comparison was made between tasks within a particular category. There were differences, however, in the leaders initiations to both members of their groups. Black leaders, for example, made more directive comments in the ship routing task than they did in the knot tying task in both the laboratory and the field setting. White leaders also made more directive comments in the ship routing task than they did in the knot tying task in the laboratory study, although this phenonema did not hold among white leaders in the field study. Black leaders also made greater use of positive social emotional comments in the knot tying task than they did in the ship routing task. This phenomena was not found among black leaders in the laboratory task nor among white leaders in either the laboratory or the field task. There were also no significant differences among either black or white leaders in either the laboratory or the field studies for the non directive or negative social emotional categories. No significant differences were found among either white or black led groups in either the laboratory or the field studies in the positive social emotional categories or the negative social emotional categories. There were differences, however, in the task oriented categories. Both black and white leaders of mixed groups in the field setting tended to emit more non directive acts on the ship routing assignment than they did on the knot tying assignment. Black leaders exhibited more directive comments in the knot tying assignment than they did in the ship routing assignment in the field study, while white leaders exhibited the same phenomena in the laboratory studies.

TABLE 38

COMPARISON OF SIGNIFICANT DIFFERENCES BETWEEN BLACK AND WHITE LEADERS OF MIXED GROUPS INITIATIONS TO THEMSELVES, ALL GROUP MEMBERS, AND INDIVIDUALS BETWEEN TASKS AND WITHIN CATEGORY AND GROUP TYPES FOR LABORATORY AND FIELD SETTINGS

Tasks Within Categories[1]	Self				Both				Individuals			
	Black-Mixed		White-Mixed		Black-Mixed		White-Mixed		Black-Mixed		White-Mixed	
	Lab N=11	Field N=8	Lab N=11	Field N=8	Lab N=11	Field N=8	Lab N=11	Field N=8	Lab N=11	Field N=8	Lab N=11	Field N=8
A_1B_1	-	-	-	-	-	A>B	-	-	-	-	-	-
A_2B_2	-	-	-	-	B>A	B>A	B>A	-	-	A>B	A>B	-
A_3B_3	-	-	-	-	-	-	-	-	-	B>A	-	B>A
A_4B_4	-	-	-	-	-	-	-	-	-	-	-	-

[1] A = Knot Tying
B = Ship Routing
1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

Comparison Between Categories

Table 39 indicates that the only significant differences which occurred in the leaders initiations to themselves between categories and within group and task types occurred among black leaders. These leaders in both the laboratory and the field setting used more non directive acts than directive acts in the ship routing assignment, although this phenomena did not occur in the knot tying phenomena.

A large number (29) of differences occurred between the leaders initiations to both members of the group. Many (20 of 29) of these differences were consistent among leaders in the laboratory and the field setting. For example, all the leaders, black and white in the laboratory and the field study in the knot tying assignment exhibited more directive acts than negative social emotional acts. In the ship routing assignment all of the leaders exhibited more directive acts than positive social emotional acts, exhibited more non directive acts than positive social emotional acts, exhibited more directive and non directive acts than negative social emotional acts. Other consistencies occurred within white leaders behavior although they did nor occur among black leaders. White leaders, for example, in the knot tying task, emitted more non directive acts than either positive social emotional or negative social emotional acts. Once again, we find that in the leaders initiations to both members of the group directive and non directive acts tend to persist over either positive or negative social emotional acts.

There were also 14 differences in the leaders initiations to individuals within their own groups. Although there were some consistencies here, they did not exist for all leaders in both tasks in both the laboratory and the field studies. In the knot tying task, both black and white leaders in the laboratory setting tended to emit more positive social emotional acts than negative social emotional acts as well as more directive acts than negative social emotional acts. In the field study of the ship routing problem, both black and white leaders exhibited more

TABLE 39

COMPARISON OF SIGNIFICANT DIFFERENCES BETWEEN BLACK AND WHITE LEADERS OF MIXED GROUPS INITIATIONS TO THEMSELVES, ALL GROUP MEMBERS, AND INDIVIDUALS BETWEEN CATEGORIES AND WITHIN GROUP AND TASK TYPES FOR LABORATORY AND FIELD SETTINGS

Categories Within Tasks[1]	Self				Both				Individuals			
	Black-Mixed		White-Mixed		Black-Mixed		White-Mixed		Black-Mixed		White-Mixed	
	Lab N=11	Field N=8	Lab N=11	Field N=8	Lab N=11	Field N=8	Lab N=11	Field N=8	Lab N=11	Field N=8	Lab N=11	Field N=8
A_1A_2	-	-	-	-	2>1	-	2>1	2>1	-	-	-	-
A_1A_3	-	-	-	-	-	-	3>1	3>1	-	-	1>3	1>3
A_1A_4	-	-	-	-	-	1>4	-	-	1>4	-	1>4	-
A_2A_3	-	-	-	-	-	-	-	-	-	2>3	-	-
A_2A_4	-	-	-	-	2>4	2>4	2>4	2>4	2>4	-	2>4	-
A_3A_4	-	-	-	-	-	-	3>4	3>4	-	-	-	-
B_1B_2	-	-	-	-	2>1	2>1	2>1	2>1	-	1>2	-	1>2
B_1B_3	-	-	-	-	3>1	3>1	3>1	3>1	-	-	-	-
B_1B_4	-	-	-	-	-	-	-	-	-	1>4	-	-
B_2B_3	3>2	3>2	-	-	-	2>3	-	-	-	3>2	-	3>2
B_2B_4	-	-	-	-	2>4	2>4	2>4	2>4	2>4	-	-	-
B_3B_4	-	-	-	-	3>4	3>4	3>4	3>4	-	3>4	-	-

[1]
A = Knot Tying
B = Ship Routing
1 = Positive Social Emotional
2 = Directive
3 = Non Directive
4 = Negative Social Emotional

positive social emotional acts than directive acts and more non directive than directive acts. It is interesting to note the reluctance of leaders to use negative social emotional comments when dealing directly with individual group members.

Summary

The results of comparing the laboratory and field studies indicate that the largest number of differences (45 of 53) occurred between categories and within group and task types. No differences were found between groups within task-category combinations, while eight differences were found between tasks within group and category types. Most of these differences (33 of 45) occurred when the leaders were emitting comments to both of their group members. Only two of the 53 differences occurred when the leaders emitted comments to specific individuals within their groups.

The greatest number of differences resulted from the leader's tendencies to use task oriented (directive or non directive acts) as compared to social emotionally oriented acts (negative or positive) when speaking to both members of their groups. When dealing with individuals, both leaders tended to use more positive social emotional comments than directive, non directive or negative social emotional comments. Particular stress seems to have been placed by both leaders on not using the negative social emotional category when dealing on a one to one basis with individuals in their groups. An interesting distinction also occurred in the leaders tendencies to use more directive acts in the ship routing problem than in the knot tying task when speaking to both members of their group while the opposite occurred when they spoke to individuals in their group: that is, they tended to use more directive acts in the knot tying task as compared to the ship routing task. Likewise, when speaking to individuals on a one to one basis, leaders tended to use more non directive acts in the ship routing assignment than they did in the knot tying task.

IMPLICATIONS

Our literature review revealed that the use of coalitions as a paradigm to study the interaction of blacks and whites has only limited usefulness. In the first place, there exists neither a consistent definition of a coalition nor are there predictable, easily identifiable reasons for choosing coalition partners. The literature indicated that the nature of the tasks, situations, and personalities of group members serve as important determinates of the nature as well as the degree of interaction. Another major problem in applying the coalition literature to the study of black and white interaction in small groups is how to define the scarce resources with which the participants are to bargain. This is particularly difficult with ad hoc groups.

The more mathematically based approach to the study of coalitions was particularly deficient because of its assumption that no participant has initial resources sufficient to control the decision by himself. This assumption is not realistic because most organizations have a hierarchical structure in which supervisors possess more power than their subordinates and have the authority to make unilateral decisions. The Component Act approach, on the other hand, does not require this assumption and therefore provides a partial rationale for our study. This branch of the literature suggests that an individual's concern for his position relative to that of others can be viewed as the payoff. Thus, a supervisor, even though he possesses power sufficient to make a decision unilaterally, can still be studied as a potential coalition member because he may have a real concern for his position power relative to that of other members in his group.

The Component Act literature, however, has it's own drawbacks. In the first place, it's utilization depends upon observation as well as experimental manipulation. In many ongoing organizations, observations of all relevant

activities are difficult if not impossible to attain. The reliance of this approach upon measures such as indexes of support and power (usually measured by the frequency with which someone speaks) to indicate the existence and process of coalition behavior is also subject to criticism. For example, one individual may speak very frequently but his opinions and suggestions may be completely rejected by the group. On the other hand, an individual may receive much support from his colleagues although he may play only a small share in the actual decision taken.

Because of the above mentioned difficulties, the authors decided not to adopt any of the existing measures of coalition behavior, but to consider the Bales categories themselves as indications of the extent to which group members coalesced. Thus, as the method of analysis section has already indicated, the twelve individual Bales categories were collapsed into four behavioral categories: positive social emotional, directive, non directive, and negative social emotional acts. The comments of each leader then were divided into these categories. These comments were further sub-divided on the basis of whether they were directed to the leaders themselves, both members of the groups or to specific individuals within the groups.

The major purpose of this study was to ascertain whether or not leaders formed coalitions with their subordinates, and if they did, were these alliances developed along racial lines. Our method of analysis approached this question by delineating the direction and nature of leaders' comments to their subordinates. If, for example, a black leader gave more positive social emotional comments to a member of his own race as compared to members of the opposite race, this was interpreted as forming a coalition along racial lines. On the other hand, if the same leader emits more negative comments to that individual, this was not interpreted as forming a coalition along racial lines. Directive and non directive comments by their nature could not be considered

as indicative of coalition formation. For example, on an unstructured task, directive comments may be interpreted as an indication that the leader does not wish to form a coalition with that member while a non directive comment may indicate a desire for coalition formation. In addition, a leader's inclination to make comments to himself as distinguished from making them to individuals or the group as a whole may show a disinclination to form coalitions.

Results

The results of our laboratory study clearly indicate that the largest number of significant differences occurred between leaders' use of Bales categories within group and task types; e.g., between directive and non directive acts within mixed groups performing the knot tying task. One-half of these differences occurred in the leaders' initiations to specific individuals within these groups although these differences, in general, did not occur along racial lines. Few differences occurred in the leaders' initiations to themselves. One interesting tendency was that leaders, irrespective of race, behaved differently when they interacted with the group en toto as compared with specific individuals within the group. Although this difference was manifested more when the leader was working with members of the opposite race, leaders tended to be more directive to the group in the ship routing and letter writing assignment and to individuals in the knot tying assignment. Another tendency was manifested when individual categories were compared. When dealing with the group as a whole, leader comments tended to be more task than social emotionally oriented while their behavior was more socially emotionally oriented when they dealt with their subordinates on a one to one basis.

In the field study, the largest number of differences again occurred between categories and within group and task types. No differences were found within groups led by black or white leaders. Most of the differences occurred in the leaders' initiations to individuals in their group but once again they

did not appear to occur along racial lines. The field study also indicated that leaders of both races tended to use more directive comments when addressing the group as a whole while using more social emotional comments when dealing with group members on a one to one basis.

The findings in the laboratory study seemed to prevail in the field study. This, of course, is encouraging. The greatest number of differences resulted from leaders tendencies to use task oriented as compared to social emotionally oriented acts when speaking to both members of their groups. When dealing with individuals, leaders tended to use more positive social emotional comments than directive, non directive, or negative social emotional comments. Leaders of both races avoided using negative comments when working on a one to one basis with individuals in their group. The specific task in which the leaders were engaged also seemed to influence their behavior. They tended to use more directive acts to the group in the ship routing problem than they did in the knot tying problem while the opposite occurred when they spoke to individuals in their group; i.e., they tended to use more directive acts in the knot tying task and more non directive acts in the ship routing assignment.

Conclusions

The most persuasive finding of this study indicates that there are few differences between black and white leaders. This finding prevailed in both a laboratory and a field setting. It has previously been reported in a laboratory study that the frequency with which black and white leaders used Bales categories varied by task but did not vary by either supervisors race or the racial composition of the group (Hill and Ruhe, 1972). Likewise, it has been reported in a field study that the frequency with which black and white leaders reported they reprimanded, praised, felt their white or Puerto Rican squad members were either uncertain about what they were to do, or were concerned with playing it safe versus looking for opportunities to prove themselves, or under

stood their needs and evaluated their performance showed no differences (Hill, Fox, and Ruhe, 1971). Thus, the findings in this study seemed to reinforce earlier findings showing very little or no differences between black and white leaders. The overwhelming evidence collected in three different studies indicates that there may be fewer differences between black and white leaders than it is normally thought.

The data collected in this paper also strongly suggests that when black and white leaders have a choice of directing their comments to either black or white subordinates they generally do not discriminate in the frequency with which they emit positive social emotional, directive, non directive or negative social emotional comments along racial lines. As Table 18 and 35 indicate, black leaders did not vary the frequency of their comments to black and white group members in either the laboratory or field setting. Of 20 comparisons, none were found to be significant. As Tables 19 and 36 indicate, of the 20 comparisons of white leaders initiations to their black and white group members in both the laboratory and field settings, there were only two significant differences. These both occurred in the letter writing assignment in the laboratory study. Here white leaders gave their white members more posi- social emotional and directive comments than they did to their black group members. No other differences were found. We can thus conclude that when the leaders were given an option of relating to members of their own rather than those of the opposite race, this option was rarely exercised.

As it has been previously suggested (Hill, Fox, and Ruhe, 1971), leaders of both races do appear to be concerned when placed in interracial settings and perhaps have a tendency "to play it safe" when dealing with members of the opposite race. This was indicated in the laboratory study by the fact that leaders of both races tended to exhibit more significant differences in

in their behavior when they were dealing with members of the opposite race than when they were dealing with members of mixed racial groups. Unfortunately, the design of the field study did not allow us to see if similar results would occur.

These results indicate that the oft-expressed stereotype that black leaders cannot effectively manage racially mixed groups is wrong. As more studies report similar findings, it will become increasingly difficult to maintain this sterotype. This could provide blacks with the long-awaited opportunity for an equal share "in the action".

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