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THE EFFECT OF CONFLICT EXPRESSION STYLES
ON QUALITY OF OUTCOME AND SATISFACTION
IN SMALL, TASK-ORIENTED GROUPS

DISSERTATION

Presented in Partial Fulfillment of the
Requirements for the Degree
Doctor of Philosophy in the Graduate School
of The Ohio State University

By

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* * * * *

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1985

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1985
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Major Field: Communication Theory


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CHAPTER ONE

Introduction

Group decision-making has received considerable attention in the communication literature in the past thirty years. Various aspects of the decision-making process have been studied in an attempt to discover what constitutes effective decision-making. The results have been inconclusive, and research efforts continue. Investigation of the processes related to effective decision-making and the nature of the relationship is important because of the many influential decisions which are made in small groups. Among those processes which affect group decisions is conflict. The main purpose of this research is the examination of the effect of conflict on group decision-making and on the quality of the group outcome. This introduction includes a brief history of small group research, a look at the reasons why group research is important and at the major problems that confront researchers, and concludes with a brief discussion of the role of conflict in group decision-making. A more complete examination of these topics and their interrelationships will be presented in Chapter Two.

The Status of Small Group Research

Brief History

The history of modern small group research is chronicled by Mills
Early theorists included Lewin and Bales. Lewin saw man as primarily a social being whose fulfillment came through cooperative participation in groups of one kind or another. Bales, believing that laws governed human interaction, developed a set of categories, the Interaction Process Analysis, to assist in the discovery of laws governing group interaction. Both men were influenced by the major events of the time, particularly World War II. Researchers like Bion in England and Semrad in the United States saw the group as a vehicle for the development and dissemination of psychoanalytic theory. This directly influenced the training group in which members would learn about group dynamics by participating in and observing the process. This conception of "group" gave rise to the pedagogical vision of the group, where learning would be fostered through a cooperative interchange. More recent studies have centered around naturally occurring work groups of all kinds (Cathcart & Samovar, 1984).

Mills (1979) has likened the early energy in small group research to the power released when man split the atom. After World War II people were eager to rearrange and rebuild society, and the group, as a microcosm of society in general, seemed uniquely situated to help the reformation process. If researchers could comprehend the dynamics of the small group, "then a lot of power might be released -- power to understand, to heal, to teach, to lead" (Mills, 1979, p. 410). Understanding the group would lead to understanding society.

The Significance of Groups

Early small group researchers promised more than small group
research could hope to deliver. The claim was made, for example, that the small group could become to sociology "what the fruit fly had been to genetics" (Mills, 1979, p. 408). Because the small group served as a microcosm for all of society, it could become the principle carrier for widespread social change. Today, although the claim for small group research is less ambitious, it nevertheless remains important to study groups for a number of reasons. Groups exist in many diverse forms throughout society, they can be helpful tools for social change, and they can serve as models for larger collectivities.

It is important to study groups for no other reason than their ubiquity. Numerous authors have noted that membership in groups is a fact of modern life (Beebe & Masterson, 1982; Cathcart & Samovar, 1984; Back, 1979). Groups are permanent fixtures of modern life, and decisions made in groups affect each of us.

The potentially far-reaching consequences of group decisions have been demonstrated by Irving Janis (1972) in his widely-quoted book *Victims of Groupthink*, which emphasized the importance of understanding the process by which groups make good decisions. In *Victims of Groupthink*, Janis describes how the Bay of Pigs decision was made by the Kennedy Administration. That decision almost embroiled the United States in a war and is generally considered to have been a poor decision. The decision to blockade Cuba, on the other hand, is widely hailed as a good decision. The chief difference between the two decisions is the presence of "groupthink" in the former and the concerted attempts of President Kennedy to eliminate this phenomenon in
the latter. The decision process was different in each of these two situations. A grasp of this process is crucial if we wish to avoid subsequent disasters like the Bay of Pigs.

**Current Problems**

It has become commonplace for researchers to talk about the disarray in small group research (Argyris, 1979; Mills, 1979; Goodstein and Dovico, 1979; Bednar and Kaul, 1979; Back, 1979; Mortensen, 1978; Fisher, 1971). Concern seems to revolve around two fundamental points. First, there is no commonly accepted theoretical foundation on which small group research rests and this has resulted in shotgun approaches to research. Second, there has not been agreement as to what constitutes the most appropriate data which is faithful to the concept of group interaction as a process.

The lack of a generally accepted theoretical framework means that contradictory findings abound and are difficult to reconcile. Problems have occurred not because of inadequate methodology or research design, but because of inadequate conceptual grounding. The charge has been made small group researchers study trivial problems involving currently fashionable variables with whatever new methodology happens to be popular.

The second main problem involves how best to study group processes, particularly what constitutes appropriate data. The communicative process of small groups is inextricably rooted in and manifested by the verbal interaction, but as Mortensen (1978) and Fisher (1971) note, few studies have attempted to measure the explicit verbal interaction or to
specify its relationship to other variables. Mortensen and Gouran (1973b) have called for more studies which attempt to tie the explicit verbal interaction with the ultimate group outcomes. These are important considerations. As Hall and Watson (1970) point out, the discovery of associations between communicative behavior and group outcomes like satisfaction with performance or quality of outcome would not only strengthen conceptual input but also would have beneficial practical implications as well. Dysfunctional practices could be identified and rectified once the basic theoretical research had established relationships between behaviors and outcomes. Clearly, the unearthing of these relationships is a priority for small group researchers.

**Small Group Research Summary**

Small group research has suffered from several problems. Early researchers promised more than could be delivered. Theory-building fell behind as researchers examined whatever variables were in vogue, without attempting to tie these variables into an integrated perspective. In addition, few studies systematically examined the actual group interaction, the heart of the concept of group process. In spite of all these problems, there is interest in discovering what factors affect group outcome. This interest exists because groups are an essential and permanent part of modern society and because the consequences of decisions reached by groups are potentially far reaching. Thus, research on the decision-making process of small groups is vital.

**Conflict**
One process in particular which affects group interaction and final outcome is conflict. Conflict research, however, has not produced definitive answers regarding its influence, in part because researchers have tended to conceive of conflict as a unitary construct and in part because much of the research is not directly comparable. This makes it difficult to integrate the findings. This section contains an abbreviated look at two key issues surrounding conflict research and their influence on decision-making quality.

**Issues in Conflict**

The first concern facing conflict researchers is the definition itself. The particular definition of conflict used in research governs the operationalization (Hawes and Smith, 1973). This in turn makes empirical studies difficult to compare, because although two studies may purport to examine "conflict," in fact they may be using the term to mean two different phenomena.

Another key issue, and one which is at the heart of this research, is the question of how conflict affects a group's decisions. It is a matter of some debate whether conflict improves or detracts from those decisions. Many researchers state, almost as a matter of course, that conflict can be either productive or destructive, depending on a number of factors (Deutsch, 1949, 1969; Thomas, 1976; Ruben, 1978; Pondy, 1967; Pareek, 1983; Pruitt & Lewis, 1975). A recent summary of this position in Wall, Galanes and Love (1984) states that conflict is productive if it opens up an issue, helps clarify it, increases a group's available options, and helps motivate group members to search out and carefully
evaluate the alternatives. It is destructive if it is carried on too long, escalates beyond initial causes, or tears a group apart.

It is not just the presence of absence of conflict but also the way it is handled that makes a difference. Thomas (1976) has synthesized the thinking of a number of researchers in his categorization of the conflict process in terms of the distributive and integrative orientations of the parties. In distributive situations, individuals see the outcome as coming from a fixed set of options. Integrative management, on the other hand, assumes that a solution exists whereby the concerns of both parties can be integrated into the final outcome. The different orientations are associated with different types of interaction and with different outcomes.

Conflict, Interaction, and Quality of Outcome

A number of studies have shown that conflict has a direct effect on the quality of a group decision (Hall and Watson, 1970; Bower, 1965; Collins and Guetzkow, 1964; Guetzkow and Gyr, 1954; Torrance, 1957; Wheaton, 1974). Many researchers believe that the possible outcomes are not dichotomous but in fact are complex, with different types of conflict having different effects. For example, affective conflict creates frustration and hurts quality, but substantive conflict improves it. However, both types of conflict make it more difficult for a group to arrive at consensus. Findings like these support the idea that it is simplistic to assume that all conflict is the same. Instead, qualitative differences in conflict should be considered in attempting to determine the effects of conflict.
Furthermore, task related conflict itself may be expressed in a variety of ways, each of which may operate differently with respect to quality of outcome. Conflict is ever-present, even in groups which ultimately do achieve consensus. What this indicates is that it is not the presence or absence of conflict alone, but the way it is expressed and resolved which affects the outcome. Moreover, these differences are detectable in the group interaction. In fact, several researchers have found links between a number of group outcomes like consensus and satisfaction and verbal interaction (Gouran, 1973a, 1977; Lane et al., 1981; DeStephen, 1983; Saine and Bock, 1973; Gouran and Geonetta, 1977; Guetzkow and Gyr, 1954; Poole, 1983a; 1983b).

Almost all groups experience conflict, but the quality of interaction between cooperative and competitive groups, and between consensus and non-consensus groups, is different. A relationship exists between the type of conflict, the type of interaction, and outcomes like participant satisfaction with the process, satisfaction with the outcome, and decision quality.

**Conflict Summary**

Conflict can affect the process of group decision-making and the quality of decisions in both positive and negative ways. A given conflict can be simultaneously productive and destructive. It is simplistic to conceive of conflict as an undifferentiated concept; rather, there are different types of conflict and these have different effects on group process and final outcome.

**Overall Summary: Conflict and Group Decision-making**
Decisions made in groups affect us all, and it is important that we understand the dynamics of group decision-making, particularly those factors that are associated with good decisions and those associated with bad ones. This is of both theoretical and pragmatic interest as well, since it could lead to an improvement in training procedures and the development of appropriate interventions.

Conflict affects the ultimate quality of a group decision, but its role is more multi- than unidimensional. Different ways of expressing and resolving conflict will affect a group decision in different ways. Moreover, different types of conflict will be manifested in different ways in different types of verbal interaction. There is good reason to believe, for example, that a substantive conflict which is expressed in an objective way, and which includes substantiation and clarification, will have a positive effect on consensus and ultimately on quality. Research to date has tended to conceive of conflict as a unidimensional concept, or at most a dichotomous one (i.e., substantive vs. affective). This is likely to be a major reason why clear effects of conflict on quality of group decision-making have not been found.

Purpose of the Research

The primary purpose of this research is to investigate the role of conflict on the quality of group decisions. The major premise is that all conflicts are not the same in terms of the effects they have on group interaction and outcome. Substantive and affective conflicts, for example, have been shown to have different effects on group interaction and outcome. However, there are varying types of substantive conflicts.
It is to be expected, for example, that substantive conflicts expressed in a friendly way will affect a group differently from substantive conflicts expressed in a hostile way.

The experiment described herein is designed to identify the effects on quality of outcome of various ways of expressing conflict and various ways of resolving it. In addition to quality of outcome, variables of interest include satisfaction with the process and satisfaction with the outcome. The primary source of data will be the actual verbal interaction of the group members.

In the next chapter, the concepts are explored in detail and the rationale is drawn for the suspected relationship among them. In Chapter Three, the methods and procedures used in this study are described. Chapter Four explains the results, and Chapter Five includes a discussion of the results and implications for future research.
CHAPTER TWO

Review of the Literature

Chapter Two is organized into two major sections. The first section contains a review of small group literature which is relevant to the methodological and research design choices adopted in this study. First, some of the problems encountered in small group research and which need to be addressed are reviewed. Then, groundwork is laid for use of verbal interaction as the primary data source by reviewing studies which provide supporting evidence that verbal interaction is inextricably linked to the structure of the group and the eventual outcome. Finally, a summary is provided which supplies the framework on which the research design for this investigation is based.

The second section reviews the literature in support of the substantive hypotheses and research questions examined. The ideas introduced in Chapter One are explored in more detail and concepts central to the current study are defined and examined. The relationship of conflict to quality of group outcome is reviewed in depth. The interrelationships of conflict, verbal interaction, conflict management, and satisfaction both with group outcome and with group process will be drawn, and general hypotheses related to the present study will be advanced. The central thesis to be explicated in this section is the
following: Different types of conflict will be manifested by differences in the verbal interaction of a group. These variations in the way conflict is expressed verbally will have divergent effects on the quality of a group's outcome and concomitantly divergent effects on group member satisfaction with both the group outcome and with the discussion process. Mere presence or absence of conflict will not affect all groups in the same ways; rather, the way conflict is expressed and the way it is resolved within a group will affect the ultimate outcome as well as member satisfaction.

**Issues in Small Group Research**

A review of the literature has revealed several significant problems with the way small group research is often conducted. In this first section, the most pressing of these problems will be examined because of their direct bearing on this present investigation. The major difficulties involve the following. First, small group research is inherently complex and this makes the phenomenon of group behavior slippery to grasp. This has contributed directly to the fact that small group research has suffered from the lack of a solid theoretical foundation or commonly accepted conceptual base which would enable the complexities to be handled in an organized and clear way. These difficulties have led to problems with research design and operationalization of terms, to the extent that attempts to generalize results have been constrained. Finally, particularly troublesome for communication researchers, the communicative properties of small group interaction have often been ignored. These concerns, and recommendations for dealing with them, are reviewed below.
The intricacy of small group research is a major factor that makes such research difficult. As Back (1979) notes, small group behavior is necessarily complicated because researchers have to deal with three classes of interrelated variables: individual, group and societal. Different researchers have organized the concepts differently. For example, Ruzicka, Palisi and Berven (1979), in attempting to deal with the complexity, have opted to use Cattell's model as a way of organizing the three different classes of variables that exist interdependently in any small group. These are syntality, or the concept of the group itself as an entity; structure, or the relationship among members and the patterns of organization; and population traits, or the individual traits of the group members which exist independently of the group but interact with the other two sets of variables. Gouran (1973b) also talks about the three categories of variables, but he describes them as group outcomes, communicative behaviors and communicative contexts.

The problem appears to be not so much the complexity itself as the lack of agreement as to the best way to handle the complexity, the failure to utilize an adequate theoretical foundation as a guide for conducting research, and failure to define concepts with precision. This has resulted in scattergun approaches to research and has made it impossible to incorporate the many diverse and seemingly inconsistent findings in the field.

These problems have attracted the attention of several authors. For example, Argyris (1979) notes that an assumption is typically made that cohesive groups are key vehicles for learning; however, learning is known to take place in groups that are not particularly
Inconsistent findings like this abound in the literature but few advances have been made which would allow such findings to be reconciled. Argyris, among others, has called for better conceptual and theoretical formulation of small group research problems.

Because there is no agreement as to the best way conceptually to organize the approach to studying small groups, researchers have tended to focus on whatever variable happens to be in vogue, and there has been "...little in the way of theorizing about the small group as a system" (Goodstein & Dovico, 1979, p. 327). Mills (1979) and Mortensen (1970) agree. Mills calls the current problems with small group research a crisis. Mortensen states that the gap between the seemingly fast pace of group research and the resultant knowledge is due to the lack of an underlying framework supporting most of the research. He is particularly critical of the way communication scholars have failed to clarify the conceptual and terminological confusion that plagues group research.

Bednar and Kaul (1979) observe that small group research as it is currently conducted does not reflect the appropriate linkages between the relevance of the concepts, the adequacy of the methodology, and the salience of the problems chosen for study. According to these authors, the problems lie not with methodology or research design, but with the conceptual input. The implication is that we have been studying trivial problems involving currently fashionable variables with whatever new methodology happens to be in vogue. Sadly lacking is a stable rudder that would guide methodological choices.

The lack of a consistent theoretical framework from which
appropriate research strategies can be built is closely related to the definitional problems that crop up in group research. These two concerns are each aspects of the same larger problem -- the lack of conceptual precision from which much group research suffers. The fact that researchers do not agree on the appropriate conceptual base means that they also do not agree on consistent definitions and operationalizations for the concepts used in group research. This, too, has led to problems in comparing research results as well as to problems of generalization.

For example, Ellis, Werbel and Fisher (1978), who themselves advocate a systems approach, note that incompatible research perspectives and ways of operationalizing variables are reasons why different group researchers obtain different results when studying similar phenomena. Much group research, they say, makes classification an end in itself instead of the basis for conceptual variability. In other words, a group is not a group is not a group. In systems theory terms, groups can be categorized on the basis of their relationship with their environment, including the permeability of the boundaries between the group and the environment, and the degree to which environmental factors must be taken into account by the group. For example, a contensive group is one where members really belong to their own, different systems rather than to the group in question. An example might be a collective bargaining group, where the members belong only nominally to the bargaining group. Such a group will behave differently from an intensive group, as represented by an encounter group, which has minimal interaction with the environment and focuses
most of its energies inward toward the members. The point is that results of experiments using entities called "groups" may not be comparable because different kinds of groups may be expected to differ in certain key respects.

In addition to the problems of comparing research results involving different kinds of groups, definitional difficulties exacerbate problems of generalization. For example, Mills (1979) explains that the classic social-psychological experiment on groups involves isolating the group in a laboratory, thereby removing it from its natural context. In many cases, there are problems justifying such experiments as small group research. Particularly distressing is the fact that many researchers, for the sake of convenience, use groups of college students in their research that are really only "phantom groups" (p. 411). This is exactly the kind of research choice that leads to the lack of congruence between laboratory findings and the operation of the outside world. There is, for instance, no good reason to expect that a collection of individuals, brought together for the first time to solve a group problem, will behave in the same way as a group of individuals who have worked together frequently and are asked to solve the same problem. Researchers cannot automatically generalize the results from laboratory groups like those just described to organizational settings which involve long-standing groups.

The thrust of the foregoing is to note that group research has suffered from lack of precise and firm theoretical underpinnings, and from fuzzy definitions and inappropriate operationalizations. Group behavior is intrinsically complex. Even those researchers who address
the complexity have different ways of structuring the classes of variables with which small group researchers must deal. There is, therefore, a lack of agreement as to the best conceptual foundation for group research. This in turn has meant that certain concepts, including the concept "group" itself, have not been clearly defined and standardized for research purposes. The contradictory results that have been found stem, at least in part, from these problems. Research efforts would be enhanced if terms were defined more precisely, and researchers need to be explicit in specifying the conceptual base on which their research rests.

Another major problem involving small group research is one which is of special concern for communication scholars, and that is the question of what to observe, what should constitute the primary source of data. It is logical to assume that communication researchers are interested in the actual communicative interaction of the group. As Mortensen (1970) and Fisher (1971) observe, however, few studies have attempted to measure the explicit verbal interaction and specify its relationship to other variables.

As an example, Mortensen (1970) offers the fact that, although "much is known about the competitive and collaborative orientations in groups, little is known of the verbal correlates of the two respective orientations. In a word, far more is known about the dynamics of groups than about the distinctive communicative properties, functions and outcomes in groups " (p. 306). His major concern is the lack of a particular communicative focus regarding small group behavior among communication researchers, and he calls for isolation of verbal
correlates of such factors as member perceptions of consensus, tension, cohesion, climate and status.

Communication researchers should look to the verbal interaction to provide the principal data source for group studies. In speaking of effective decision-making, Gouran (1973) states, "Events of the past several decades have shown that ... many of the nation's domestic and foreign difficulties have resulted from failures in decision-making" (p. 22) and it is imperative to identify the characteristics of effective decisions as well as the communication qualities (emphasis added) that manifest themselves in such decisions. To do this, researchers must systematically attempt to discover the communicative behaviors associated with good decisions. Gouran adds that, of the three broad categories of variables typically studied in small group research (group outcomes, communicative behaviors, and communication context), least is known about types of communicative interaction and their association with other variables like satisfaction. This is a serious oversight on the part of communication researchers.

Almost no research, according to Poole, McPhee and Siebold (1982) has dealt with the communication process as it relates to the actual decision, or group outcome. What little research has been done has not looked at the effect of interaction on decision content. These authors are especially troubled that many of the studies have lumped communication interaction, what they believe to be the heart of group decision-making, in with "faulty process" (p. 2). In order to test the notion that interaction itself is important, Poole et al. compared interactional and non-interactional models as explanations of decision-
making. The interactional model used assumes that change is the result of the interaction, and the non-interactional model assumes that pre-discussion preferences are unaffected by interaction. They found, not surprising to communication researchers, that interaction per se is a crucial factor in group decision-making. This being the case, it is important to take the next step and attempt to specify what it is about the interaction that causes change, or leads to better or worse decisions.

The earliest to legitimize the use of conversation as data in small group research was Bales (1950) with his Interaction Process Analysis. Subsequent researchers, often using Bales as the springboard, have also used the talk as their primary data (Donohue, Hawes and Mabee, 1981; DeStephen, 1983; Hirokawa, 1980; Kreuger, 1980; Poole, 1982, 1983a, 1983b). The approach is not a new one, but as Poole et al. (1982) note, no studies have tied the communicative interaction directly to the group decision. The major point in the previous discussion is that communication itself should be the locus of attention when researchers are interested in observing communication behavior and communicative effects.

In the field of communication, Fisher (1971) has been one of the most articulate advocates on behalf of basic changes in the way small group research is conducted, changes that would incorporate the use of talk as the primary data source and would utilize more solid theoretical foundations than have traditionally been used. He has expressed distress at the kinds of research choices made for the sake of convenience which cast serious doubt on the credibility of subsequent
findings. Because Fisher's criticisms serve as an excellent synthesis of the concerns which have been reviewed up to this point, they are presented here in some detail. In addition, Fisher's specific recommendations have served as the conceptual basis for some of the research choices that have been made in this investigation.

The terms "group" and "task" are encountered frequently in the research literature, but Fisher (1971) notes that they remain equivocal. Precise definitions need to be established. Just any collection of individuals does not necessarily constitute a group. At the least, individuals must feel a sense of membership or shared goals. Taking a system theoretic approach, Fisher says a group is identified by the series of interstructured behaviors which emerge in predictable patterns, with communication as the "key organizing element" which reveals the structure and function of the group (Fisher, 1971, p. 19). Any definition of "group" which ignores the reason for the group's existence, its history, or its relationship to the environment is founded merely on peripheral characteristics of what we call "group." Fisher recommends, therefore, that researchers look at authentic groups, similar to the "full-fledged" groups described by Bales and Strodtbeck (1951), and not at conveniently gathered, but operationally inappropriate, collections of individuals.

Fisher (1971) locates the group's task in its interactive behavior. If a group is indeed different from a collection of individuals, then the task one gives to a group should be qualitatively different from the task one gives to an individual. The task given to a group should be one in which a group may be expected to perform better than an
individual working alone; therefore, it should not be one for which there is likely to be a correct answer but one which is likely to be enhanced by the group interaction. Furthermore, researchers should make the distinction between decisions of high quality and ones of high acceptance. High acceptance decisions are those for which consensual validation is a criterion of task accomplishment and is a hallmark of group activity. In many organizational settings, both criteria — high quality and high acceptance — are desirable outcomes, since decisions which carry the support of participants are more likely to be supported and implemented (Maier, 1967).

Finally, Fisher makes a strong plea in favor of the study of the actual communicative behavior of group members. The worst problem, he believes, is that researchers have ignored the single "most pervasive phenomenon" of the small group — the communication.

Fisher (1971) makes the following specific recommendations. First, researchers should study actual groups, not mere collections of individuals, by using either naturally occurring groups or taking more care in the formation of laboratory groups. Second, researchers should employ a task designed for group solution, one which would generate more involvement than laboratory groups are notorious for manifesting. Third, researchers should observe directly the interactive behavior of the group. Above all, they should not make inferences about the effect of communication on variables of interest but rather should observe the communicative behavior directly. Finally, in a related recommendation, researchers should be careful not to employ an oversimplified and inappropriate input-output model which assumes that all outcomes are due
to previously existing input conditions and ignores the influence of the
group interaction.

In the next section, studies are reviewed which support the belief
that verbal interaction of a group is linked to structural conditions as
well as group outcomes.

Group Structure, Interaction and Outcome

A major tenet of this study is that the verbal interaction of a
group affects that group’s outcome. Instead of looking at the entire
scope of verbal interaction, this investigation will focus specifically
on the expression of conflict as the interaction variable of primary
interest. Although expression of conflict has not been tied
specifically to outcome quality in previous research, there is support
for the contention that a conceptual link exists between different ways
of expressing conflict and different outcomes, since different kinds of
general interactions have, in previous studies, been associated with
different kinds of outcomes.

Two major points are made in this section. First, different kinds
of group structures are associated with differences in verbal
interaction. Second, different kinds of verbal interactions are
associated with differences in the outcomes. Moreover, systematic
review of the types of observed differences in structure and
interaction indicates in which direction to expect differences in
outcome. These points set the stage for the basic research design of
this study as well as the establishment of the specific experimental
conditions. Details are included in the next chapter.

The way a group or dyad is structured, typically by manipulating
incentives to create competitive and cooperative entities, affects the verbal interaction. Several studies have examined the interaction following structural manipulation, using a variety of category systems (Bales, 1950; Fisher, 1970; Ellis, 1976; Hirokawa, 1982), and have demonstrated a relationship. In their review of the bargaining literature, for example, Putnam and Jones (1982) note that two systems created specifically for analyzing bargaining situations — the Conference Process Analysis (CPA) and the Bargaining Process Analysis (BPA) — have revealed systematic differences between cooperative and competitive discussions. Cooperative bargainers appear to initiate more proposals, to use soft as opposed to hard tactics, and to attempt to elicit responses and reactions from their opponents. Moreover, the CPA has shown that use of soft tactics and positive rather than negative remarks increases the likelihood that bargainers will reach a mutually acceptable settlement, indicating that different types of interaction do indeed have different results.

Additional support for the link between the way a group is structured and the ensuing type of interaction has been observed. Pruitt and Lewis (1975) manipulated structural conditions of dyads. Discussion in dyads that adopted a cooperative approach was characterized by more proposals for mutual coordination, more expression of interest in the other party, and fewer pressure tactics. This is consistent with the findings of Carnevale, Pruitt and Seilheimer (1981), who found that competitive situations were characterized by use of pressure tactics and lessened understanding of the other’s priorities.

Donohue, Hawes and Mabee (1981) found differences in the
interaction of competitive and cooperative groups as well. Cooperative groups spent considerably more time requesting, providing, and supporting information. The cooperation was manifested by mutual verbal support for each other’s ideas. Baird (1974), too, found differences. Cooperative groups spent a greater proportion of their time in giving information which attempted to contribute to the group as a whole. Expressions of disagreement in such groups tended to be followed more often by requests for information than anything else. Not only did competitive groups express disagreement twice as often, but they tended not to resolve the conflicts that did occur. In the cooperative groups, on the other hand, there appeared to be a need to resolve a conflict before the group moved on to a new topic.

To summarize, it seems that a group which is structured in a competitive way will manifest a different kind of verbal interaction than a group which is structured in a cooperative way. Furthermore, there is a more objective, ideational quality to the cooperative groups and a higher degree of interest in and concern for all parties involved. Cooperative groups seem to encourage a genuine search for information and expressions of mutual verbal support. Structure does affect interaction. The findings which are reviewed below support the belief that interaction affects outcome.

Several studies have demonstrated a relationship between group interaction and performance, although these findings have not been consistent (Hirokawa, 1982). Poole (1983a) maintains that a relationship between interaction and outcome ought to occur. For example, he uncovered four different conflict arrangements in his
research on sequential patterns of interaction. Although he did not link the patterns to outcomes in a systematic, empirical way, he did speculate that the interaction pattern influenced the outcome such that the groups experiencing either no conflict or recurrent conflict with no period of socio-emotional integration probably were not as effective as those groups experiencing intermediate levels of conflict.

Barnes (1975) found differences in both the sequence and the distribution of messages in consensus and non-consensus groups. (Consensus is regarded here as a group outcome.) The pattern of consensus groups shows more agreement, more statements of understanding and less subject-changing.

Hirakawa (1983) also found differences in the interaction patterns that characterized successful (defined as producing a high quality outcome as judged by independent judges) and unsuccessful groups. Specifically, he found that groups which are eventually successful made more attempts to understand the problem before beginning to solve it. Unsuccessful groups began by immediately searching for a solution. In a different experiment, Hirokawa (1980) found that the communication processes between effective and ineffective groups (defined in terms of their deviation from a previously-known correct solution) showed differences. The effective groups spent more time on procedural matters, which is consistent with his other findings.

Timing of affect is another interaction variable that has been found to affect quality of outcome (Guzzo and Waters, 1982). Groups that delayed the expression of affect produced consistently higher quality decisions than groups with early affect expression. Affect was
defined as expressing like or dislike of the ideas and opinions mentioned. Early expression of affect apparently narrows the range of options considered by the group and has a stifling effect on group energy. In this case, differences in the interaction variable "affect expression" were linked to variations in outcome quality.

In summary, interactions which are characterized by mutual support and problem-solving appear to affect a variety of group outcomes in a positive way. Interaction, then, is a crucial element for the study and understanding of group discussion. The type of discussion a group engages in somehow "matters" -- it makes a difference with respect to the final outcome. In addition, the type of interaction a group engages in can be established to some extent by manipulating the structural conditions in which the group operates. There is indeed a relationship between the structure of a group, the type of interaction in the group and the final outcome. Furthermore, the quality of the outcome appears to be positively affected by the kinds of interactions associated with cooperative groups -- mutual support, an ideational quality, and genuine attempts to understand.

Summary: Issues in Small Group Research

A summary of issues reviewed up to this point will now be provided, along with a brief explanation of how these issues will be handled in this study. First, not all groups are similar just because they bear the designation "group." Just any collection of individuals is not a group. For group research to be meaningful in terms of real world applications, care needs to be taken in the establishment of laboratory groups. In particular, the groups should have some prior history and
some anticipated future interaction to help ensure that they behave similarly to naturally occurring groups.

Second, the task selected for the group must be one which will generate the levels of motivation and involvement that would be expected in a realistic setting in addition to being one that is appropriate for a group solution (Fisher, 1971). In other words, it should be an engaging task with multiple possible solutions.

Third, if the behavior of interest is communication, then it is the communication which should provide the primary data. It is not appropriate to make assumptions about communicative behavior by relying only on retrospective data provided by the participants, or data inferred from other information, without observing that behavior directly. Communicative behavior represents more than what some have termed "faulty process", and something happens to the outcome as a result of the communicative interaction. As Poole et al. (1982) found, outcomes are not solely dependent on inputs.

Finally, any research undertaken should be guided by coherent theory. Studying variables at random without considering the theoretical foundations linking them to one another will continue to produce findings which are mystifyingly contradictory.

All of the foregoing concerns have been taken into account in this study. The research design is consistent with the systems framework described by Katz and Kahn (1966) and endorsed by Fisher (1971). The task itself is part of the input as are the structural conditions under which the groups will working. The principal output variable is the quality of the group decision, but other output variables of interest
are satisfaction with the outcome and with the discussion process. The span linking input to output -- the throughput -- is the verbal interaction itself, which will serve as the primary source of data. It is assumed that there is an interdependent relationship among all these factors, but the relationship of chief interest is that between the verbal interaction and the output variables of satisfaction and quality of outcome. In addition, this research will employ "real" groups rather than collectivities of individuals, and will use a task which is designed to be solved by a group and which generates high levels of involvement.

Conflict

In this section, the literature pertaining to the variables of primary interest is reviewed. The chief independent variable is conflict. First, some of the same kinds of problems encountered in small group research are also of concern in conflict research. In particular, definitional issues and concerns surrounding the positive and negative effects of conflict are surveyed. Then, the rationale is drawn for the expected relationship between amount of conflict, method of conflict expression, and method of conflict resolution and quality of outcome, satisfaction with outcome, and satisfaction with discussion process. The section concludes with the substantive hypotheses which guide this study. In general, the position taken in this investigation is as follows: There are different ways in which conflict can be expressed, and these ways are manifested by differences in verbal interaction. The various ways of expressing conflict and of resolving it will have varying effects on the quality of the group outcome and the
members' satisfaction with the outcome and with the process.

**Definitional Issues**

Conflict is defined and operationalized in a variety of ways, and this makes results of conflict research difficult to compare (Hawes & Smith, 1973). The definition employed is especially problematic because it governs subsequent research choices. Conflict has been defined in any number of ways, from a "state which exists whenever incompatible activities occur" (Deutsch, 1969, p. 7) to a problem which has no feasible solution (Shakun, 1981). It has been defined broadly and vaguely as a state of genuine difference (Lippett, 1982) as well as narrowly and specifically as an impasse (Shakun, 1981).

It has been observed that most conflict definitions incorporate both a perceptual and behavioral dimension (Wall and Nolan, 1984; Putnam and Jones, 1982; Thomas, 1976). For example, in his description of the latent stage in the conflict episode, Pondy (1967) refers to prior conditions, such as a competition for scarce resources, an individual's drive for autonomy, or a goal divergence among individuals, which may give rise to manifest conflict. Thomas (1976), extending Pondy's ideas, links specific cognitive orientations to particular conflict behaviors.

The definition a researcher chooses to employ determines what "counts" as conflict. Conflict defined as a cognitive difference between people will be operationalized differently from conflict defined in terms of observable behavior. In this study, the antecedent conditions are of less interest than the communicative behavior itself. Therefore, the focus will be on the verbal interaction.
Conflict definitions which emphasize communicative behavior have been adopted by several researchers. Jandt (1974), in particular, has called for use of a communicative definition of conflict, since conflict is manifested by communication. Many definitions encompass the full range of phenomena from "intellectual disagreements to physical violence" (Thomas, 1976, p. 891). This is highly appropriate for communication researchers because it does focus on communicative behavior, and has been employed by numerous communication researchers (Krueger, 1980; Gouran & Geonetta, 1977; Baird, 1974; Donohue et al., 1981). It is the definition which will be used in the present study and meets the essential criterion for research into small group behavior -- it is behaviorally based. This definition is broad, incorporating the entire range of human behavior which indicates a condition of conflict. Because the groups to be employed are typical task-oriented groups and because of the normal cultural constraints on behavior in academic settings, instances of physical violence are unlikely to occur; rather, it is expected that most or all of the occurrences will fall on the "disagreement" end of the conflict continuum.

Effects of Conflict: Positive and Negative

Conflict affects a group's decisions, but it is a matter of some debate whether conflict improves or detracts from those decisions. In recent times, most researchers state almost as a matter of course that conflict can be either productive or destructive (Deutsch, 1949, 1969; Thomas, 1976; Ruben, 1978; Pondy, 1967; Pareek, 1983; Pruitt & Lewis, 1975; Knutson and Kowitz, 1977; Hoffman, 1979). Several authors have attempted to distinguish between helpful and harmful effects.
Deutsch (1969) differentiated between productive and destructive conflict by focusing on the outcome. Conflict is productive when the resolution or outcome is satisfactory to all involved parties. Conflict that is characterized by escalation and which becomes independent of the initial causes is destructive. Lippett (1982) said that conflict itself, irrespective of outcome, was destructive if it was carried on too long and too far. Pareek (1983) noted that conflict can drain a group of needed energy on the one hand, but on the other hand can help spark a desire for excellence and creativity. Hoffman (1979) called for identification of the optimum range of conflict, where there was enough to spur creativity but not so much as to tear the group apart.

Most current researchers focus on conflict's several potentially beneficial effects. Conflict is said to increase the available pool of ideas (Hawes & Smith, 1973), to open up an issue and clarify it (Lippett, 1982), to foster tolerance for and increased understanding of divergent ideas (Hall & Watson, 1970), and to motivate a search for better alternatives (Pruitt and Lewis, 1975; Thomas, 1976).

Those authors who adopt a systems perspective to the study of small groups perceive the positive benefits of conflict to be its ability to help the system adapt to its environment. Rose et al. (1982) note that the value of conflict depends in part on the type of conflict and the intensity as well as the circumstances in which it occurs. Ruben (1978) says that a conflict should be judged good or bad depending on the extent to which the conflict helps the system adapt to the environment. Pondy (1967) takes this idea a step further. Conflict, he says, can be either functional or dysfunctional. It can threaten organizational
stability, but it can also be a key variable in the feedback loop, alerting an organism (an organization, a small group) to the need for change and helping direct that change. Conflict, however, cannot be evaluated in isolation but must be judged relative to some set of values, and this value system should be made explicit. Furthermore, it is possible for a given conflict to have both beneficial and detrimental effects simultaneously. For example, three possible dimensions which might be affected by a given conflict are productivity, stability and adaptability. A single conflict may promote adaptability and productivity, but may hinder stability. In any case, conflict is a source of disequilibrium to the system and causes pressures for systemic resolution. Its positive effects may include increased creativity and individual involvement.

**Relationship with Quality of Outcome**

A number of studies have shown that conflict has a direct effect on the quality of a group decision. Typical rationales for why conflict might improve decision quality are suggested by several researchers. Hall & Watson (1970) note that conflict increases the range of options available to a group and therefore improves the ultimate outcome. Tjosvold and Johnson (1977) and Smith, Johnson and Johnson (1981) observe that controversy facilitates understanding of another’s point of view. With controversy, people realize that others do not share their point of view. This creates uncertainty and provides motivating force to resolve the uncertainty. In turn, this enhances the quality of information available to the group. This rationale is similar to that provided by Valentine and Fisher (1974): conflict, or "innovative
deviance," forces a group to consider alternatives that increase quality.

Downs and Pickett (1977) found, for example, that on unstructured tasks groups that were incompatible on several personality dimensions were more productive than compatible groups. This implies that conflict enhances decision quality because, presumably, members of incompatible groups perceived things differently and therefore made available to the group more varied ideas and interpretations. Aamodt and Kimbrough (1982) found, too, that heterogeneous groups produced superior answers in a problem-solving task than homogenous groups. They postulated that heterogeneity generated conflict and creativity and therefore promoted quality of solution for unstructured problems. Similarly, Callaway (1981) found that, while high levels of cohesiveness (implying little conflict) hurt decision quality, moderate levels enhanced it.

Smith, Johnson and Johnson (1981) observed, in sixth grade classrooms, that controversy promoted higher achievement as compared with individual study or concurrence seeking. Bell (1979) found that, although the relationship between conflict, interaction and quality of outcome is not clear-cut, lack of conflict hurt solutions because it reduced the amount of information exchange, and critical responses to the available information was missing. Consensus decision-making, she noted, was not always the best.

A certain amount of conflict, then, appears to be more beneficial to a group's final outcome than no conflict at all. But if a little conflict is good, then is a lot of conflict better? Other researchers (Lippett, 1982; Deutsch, 1969; Pareek, 1983; Guetzkow and Gyr, 1954)
have observed that excessive conflict can cause a group to deteriorate and eventually dissolve. It appears that moderate amounts of conflict are beneficial to a group, but too much and too little are detrimental.

Two additional points need to be made regarding the effects of conflict on a group. First, two different kinds of conflict which fit an established operational definition will not necessarily have the same effect on a group. Rather than dealing with conflict as though it were a single type, or focusing only on the amount of conflict, many researchers now recognize that there are qualitative differences in conflict. Second, it cannot be assumed that a given conflict will affect different aspects of a group in the same way. As Pondy (1967) noted, a single conflict may affect group productivity positively and stability negatively.

For example, Bower (1965) set out specifically to answer the question of whether conflict is helpful or disruptive by studying teams (purely cooperative groups where goals of individuals were the same) as opposed to foundations (groups where the goals of the individuals conflicted). Teams made better choices under conditions of unanimity but foundations made better choices under majority rule. The effect of conflict appears to be mediated by factors like the group goal structure and the decision-making phase during which the effect of conflict is assessed. Bower postulated that intragroup conflict may hurt only choice activity but may have positive effects on search and analysis activity. This dual function, increased motivation during search and analysis paired with increased constraint during choice, may in a combined analysis produce a curvilinear relationship between conflict
and decision quality. This provides some empirical support for Pondy's contention that a given conflict may affect different aspects of group behavior differently.

Collins & Guetzkow (1964) and Guetzkow & Gyr (1954) concur with this finding. Collins & Guetzkow note that groups are prone to conform for the sake of conformity, and agreement that is established too quickly will lower the quality of a group decision. On the other hand, disruption may be introduced by individualistic concerns of members, and this is harmful, too. Guetzkow & Gyr observed actual business groups and found that although conflict may result in frustration, it has creative potential. They speculated that different kinds of conflicts have differing effects, and were the first to differentiate the two basic types of conflict that are widely accepted. Substantive conflict, which related to suggestions, solutions, or interpretations regarding the decision or task itself, was beneficial with respect to ultimate quality. Affective conflict, which was not task but interpersonally oriented, created frustration and hurt quality. Both kinds of conflict tended to inhibit the achievement of consensus.

Torrance's (1957) findings were consistent. Aircraft crews which had greater tolerance for disagreement, greater participation, and initially more divergent views were more effective in Korea than crews which had less disagreement. If individuals are willing to disagree, then an increased range of judgement is available for consideration. The chance for misunderstanding is decreased and the willingness to accept the group's decision is increased. There is evidence to suggest that consensus is greater when there has been greater expression of
disagreement. Task-oriented disagreement is almost always beneficial and the "willingness to disagree is a major characteristic of the...high achievers" (p. 317). However, disagreements centered in personalities and power relationships are destructive.

Additional support for the belief that the type of conflict makes a difference in group outcome comes from Wheaton (1974). Principled conflict (disagreement over matters of principle) had a negative effect on group cohesiveness but communal conflict (agreement in principle, disagreement over means) had a positive effect. Here, both types of conflict were substantive. Nevertheless, each had a different effect.

The distinction between affective and substantive conflict initially described by Güetzkow and Gyr (1954) is well accepted as is the belief that each type of conflict affects a group's quality of outcome differently. Furthermore, it seems that the distinction between substantive and affective conflict is itself oversimplified. There are, for example, different kinds of substantive conflict, and these kinds are expressed with varying levels of intensity. It is logical to assume, then, that type of conflict and method of expression will affect outcome in varying ways, and that, moreover, these differences in style of expression are detectable by examination of the verbal interaction.

Previous research supports this view, even though distinctions finer than substantive/affective and communal/principled have not been made. In addition, the research findings contain suggestions of the way in which different types of substantive conflict may operate. The studies which follow are cited in an attempt to demonstrate that certain types of verbal expression are predictably associated with certain types
of outcomes.

Gouran, Brown and Henry (1978) found that a number of factors affect perceptions of quality of a group decision. Behaviors related to the introduction of relevant issues, amplification of ideas, documentation of assertions, and maintenance of goal-oriented behaviors affect members' perceptions of quality more than the extent of individual involvement or maintenance of a positive socio-emotional atmosphere. In this instance, Gouran was concerned only with perceptions rather than objective assessments of quality.

Lane et al. (1982) found that making acceptance of a solution an explicit goal can lead to a higher quality decision and facilitate increased individual acceptance of the decision. The implication here is that promoting acceptance as a goal will cause communicative behavior to focus on acceptance, and consensus-testing should be one manifestation of this. Consensus-testing results ultimately in higher individual acceptance of the final outcome.

A group's success is often determined by the extent of the group members' positive feelings toward the decision (DeStephen, 1983). In successful groups, members agreed with the group outcome and rate high in acceptance of the final proposal. Saine and Bock (1973) found that high consensus groups tend to make statements of personal involvement with expressions of unity, and Gouran and Geonetta (1977) discovered that in such groups, development and amplification of themes were followed more often by theme development, acknowledgement, or comments showing understanding of the theme. High consensus groups made more remarks indicative of support and understanding, agreement, and explanation.
Low consensus groups expressed more disagreement and unsubstantiated opinion.

Another study by Gouran (1977) supports this. Consensus groups were more informative and objective and higher in orientation-related statements. Members of consensus groups seemed to be more directly responsive to each other. The interaction was less random.

Additional support comes from Guetzkow and Gyr (1954), who looked at the relationship between conflict and consensus and found that self-oriented personal statements were detrimental to consensus but expressions of positive affect helped a group achieve consensus if there had been a conflict. Groups that reached consensus had leaders who did three times the amount of seeking of factual information than leaders of non-consensus groups.

Scheidel and Crowell (1964) observed groups composed of trained discussants. These groups spent more than half their time confirming previous decisions, clarifying, and substantiating ideas. The researchers concluded that "this mutual clarification and verbalization of concurrence are probably basic to the loyalty of the group solution so often observed in participants in group discussion" (p. 143). In these groups, an idea was never immediately rejected. Discussion and development of the idea occurred in the form of restatement, clarification and substantiation. The indication is that consensus and satisfaction would be related to the amount of elaboration and confirmation of the proposals under discussion.

Consensus was related to conflict in Poole's (1983a) study. Conflict-ridden groups had lower agreement with the statement, "The
group arrived at the best possible solution." These groups were characterized by long conflict cycles, a stormy atmosphere, and no developing consensus. On the other hand, groups whose members believed they had arrived at the best solution had long periods of idea development and short conflict cycles.

In the studies cited earlier, the high consensus groups were not free of disagreement (DeStephen, 1983; Saine and Bock, 1973; Gouran and Geonetta (1977). However, the disagreements were qualitatively different. For example, disagreements which were not accompanied by substantiation and accompanying evidence were prevalent in non-consensus groups. Consensus group members had a greater tendency to provide reasons for disagreements and were more directly responsive to each other. Non-consensus group members appear to have been more opinionated without supplying accompanying rationale for their opinions.

Thus, cooperative and consensus groups each experience conflict, but the nature of interaction between cooperative and competitive groups, and between consensus and non-consensus groups, is different. There seems to be a more objective, ideational, informative, but less intense quality to the interaction of consensus groups. There is a link, therefore, between the type of conflict, the type of interaction, and certain outcome variables like consensus and satisfaction.

The following can be concluded from the previous discussion. First, communication research on conflict in small groups calls for a communicative definition of conflict. In this study, conflict is defined as an observable behavior which is manifested by the verbal interaction of a group. Second, a moderate amount of conflict can be
expected to improve the quality of a group decision as compared with no conflict or with a lot of conflict. Third, a given conflict can be expected to affect different aspects of group decision-making in different ways. The amount of conflict which improves quality, for example, may detract from member satisfaction with discussion process. Fourth, going beyond the mere amount of conflict, the way in which a conflict is expressed will make a difference with respect to quality of outcome and satisfaction. Stormy discussion may hurt outcome, but conflict which is accompanied by clarification and substantiation or followed by socio-emotional integration may enhance outcome. The presence or absence of conflict, the way in which group members express conflict, and the way in which conflict is resolved in a group all will have an effect on various group outcomes like decision quality, outcome satisfaction, and discussion satisfaction. In the sections which follow, rationale is provided for the specific ways in which these aspects of conflict are believed to operate regarding outcome quality and member satisfaction.

Conflict Expression, Conflict Resolution and Quality of Outcome

Before reviewing literature regarding the relationship between conflict expression, conflict resolution and outcome quality, a word about the distinction between "expression" and "resolution" is in order. It is not unlike the distinction between conflict management and resolution drawn by Hawes and Smith (1973). These authors observe that conflicts are managed if one assumes that conflict is an ongoing process, but resolved if one assumes that conflict is a temporary disruption which must somehow be ended. In the kinds of conflicts
observed in task oriented groups, both management and resolution occur. A conflict episode is initiated by the expression of a disagreement and terminated by resolution, explicit acknowledgement that resolution is impossible or undesirable, or by a topic shift which leaves the conflict implicitly unresolved (Baxter, 1982). There is a process component (what happens between the expression of the disagreement and the termination) and an outcome component (the actual resolution). The two components are closely related but are not identical. In this research, both aspects of the conflict episode will be examined. The term "conflict expression" rather than "conflict management" will be used in the hypotheses because it is more comprehensive. "Conflict management" implies examination of those activities which are designed to handle the conflict once a disagreement has been stated. "Conflict expression," on the other hand, includes these activities as well as those behaviors which are designed to express disagreement in the first place.

No previous studies were located which examined specifically the relationship between conflict expression and outcome variables like decision quality and satisfaction, although numerous studies examined conflict management and conflict resolution. Consequently, the studies which deal with conflict management, a more usual term than conflict expression, are reviewed. Typically, the rationale for explaining the relationship is derived from Gibb (1961) and Thomas (1976), and has been articulated in previous research by Wall et al. (1984). It serves as the foundation for the substantive hypotheses ventured later.

Thomas, using ideas developed by Walton and McKersie, has described the conflict process in terms of the distributive and integrative
orientations of the involved parties. The distributive dimension assumes that one party has a high degree of concern for meeting his own needs in a conflict situation but little concern with respect to his opponent's needs. The integrative dimension, on the other hand, assumes that a party has a high degree of concern both for his own needs as well as his opponent's. In distributive situations, parties see the outcome as necessarily having to come from a fixed, win/lose set of options. What one gains, the other must lose. The underlying assumption is that conflict will be perceived as severe and ultimately destructive, especially to the party who loses. The integrative approach, conversely, assumes that a solution exists whereby the concerns of both parties can be integrated.

These represent the basic conceptualizations of the parties involved in the conflict and will be reflected in their behavior. Distributive disagreements are likely to have a different "flavor" to them. Such disagreements will be expressed in a more competitive, hostile and antagonistic way. Conflicts stemming from an integrative orientation, on the other hand, are more likely to be characterized by friendliness, and to be expressed in the spirit of open search for alternatives.

Gibb's (1961) descriptions of defensive and supportive climates directly parallel Thomas' two dimensions. Supportive climates are typified by non-judgmental behavior, open and honest communication, emphasis on genuine exploration to find the best solution and mutual trust. Supportive climates encourage participation from all members of the group and reward the authentic search for alternatives. Defensive
climates, however, are represented by judgmental and critical behavior, use of power tactics, suspicion, and attempts to persuade others without concomitant attempts to listen and understand.

From these descriptions, it is possible to speculate how group outcome might be affected. Conflicts which are expressed in a distributive way are likely to have a detrimental effect on outcome quality, but conflicts expressed in an integrative way are likely to have a beneficial effect for the following reasons. One of the positive effects of conflict is to open up an issue and provide additional alternatives for consideration by a group. The kind of atmosphere which is most likely to ensure this free and open exchange of communication is a supportive one and the kinds of remarks made would be indicative of an integrative orientation. This is likely to enhance the quality of outcome. A defensive atmosphere, indicative of a distributive orientation, is likely to short-circuit the free and open exchange of ideas. Therefore, the quality of outcome is likely to be hurt. As Falk (1982) notes, one condition needed for conflicts to be beneficial in finding creative solutions is for the kind of atmosphere where all can freely express their ideas and where disagreements can emerge.

Numerous researchers and practitioners suggest that collaborative or integrative conflict management styles are to be preferred because they are superior in helping a group find additional alternatives and explore the advantages and disadvantages of the alternatives (Thomas, 1976; Deutsch, 1969; Hall, 1971; Pareek, 1983; Lippett, 1982). According to Thomas' rationale, with the integrative approach by definition parties attempt to discover solutions that integrate the
concerns and needs of all parties to the situation. This means, then, that communication is more full and open, more complete and accurate, and genuine attempts are made to incorporate the concerns of all into the final solution. More points of view are taken into account. This should not only increase the quality of the outcome, but should also promote high acceptance of the decision.

The foregoing has become part of the conventional wisdom, but empirical evidence has not provided unqualified support for the superiority of collaboration as a conflict management technique. In the several articles reviewed by Love (1984), for example, empirical evidence was mixed. Some of those studies are reviewed here as are additional ones which emphasize Love’s point.

Pood (1980), for example, observed and measured decision accuracy for groups participating in a Prisoner’s Dilemma Game against a previously determined mathematically correct answer and found that those groups using regulated responses (analogous to integrative responses) were more accurate than groups using unregulated (distributive) responses.

In a study reported by Nemiroff and King (1975), it was found that groups told to arrive at consensus were more accurate on the NASA exercise than groups not told to use consensus. Here, the consensus groups were analogous to the integrative groups.

Slepicka (1975) found that friendly interpersonal relations, coinciding with Gibb’s and Thomas’s supportive and integrative distinctions, have a positive influence and increased cooperation on sports teams. Unfriendly interpersonal relations, coinciding with the
defensive/distributive descriptions, have a negative influence on performance.

Pruitt and Lewis (1975) found that bargainers who adopted either an information exchange approach to bargaining or a heuristic trial and error approach enhanced joint profit, which is by definition integrative solution. On the other hand, distributive approaches reduced joint profit. This provides support for the belief that collaborative problem-solving, as represented by heuristic trial and error or information exchange, increases outcome.

Two pieces by Johnson (1977, 1981) support this contention that integrative conflict management improves decision quality. The first is a study where a perspective-taking presentational style on the part of one party was found to improve problem-solving outcomes as compared with an ego-centric style, and heterogeneity of information was not a factor when perspective-taking was used but affected outcome quality negatively when egocentric behaviors were used. It can be argued that this has a direct bearing on the operation of conflict and conflict management. Heterogeneity of information implies that disagreements occurred. A perspective-taking style is similar to an integrative style in the handling of disagreements, and an egocentric style is similar to a distributive style. Even in the presence of heterogeneity (implying conflict), integrativeness promoted a higher quality of outcome and distributiveness a lower quality.

The second piece by Johnson (1981) is a review of studies of the effects of cooperation, competition and individualistic orientation on achievement and productivity. Johnson concludes that cooperation
(analogous to integrative behavior) is superior to competition (analogous to distributive behavior), saying, "...the overall effects stand as strong evidence for the superiority of cooperation in promoting achievement and productivity (p. 58).

On the other hand, these results are qualified by Hirokawa (1982). His consensus groups did produce higher quality outcomes on the NASA exercise, but this was mediated by vigilant decision-making, and Hirokawa's contention is that it is the vigilance that leads to the superior outcome and not the consensus.

One major weakness in the foregoing studies is that determination of the type of conflict management or resolution has not been tested directly but must be inferred from other information. For example, groups in the Nemiroff and King (1975) study were told to reach consensus. The inference is then made that if a group reaches consensus, its negotiation must have been integrative in nature. This is a reasonable assumption, but must remain only an assumption until it has been verified empirically.

One study which tested directly the effects of conflict management style on quality of outcome is that of Wall et al. (1984). Here, conflict management style was assessed experimentally by independent observers. It was found that, indeed, the integrative style of conflict management was associated with higher quality of group outcome. Groups with no conflict evidenced the lowest quality, and distributive groups the next lowest. Groups which used mixed distributive and integrative strategies fell just behind the integrative groups in terms of quality of outcome. This is the first study in which the effects of conflict
management style are not inferred but directly appraised, and provides support for the rationale drawn earlier. However, the relatively few numbers of conflict episodes on which these conclusions were based invite caution in the interpretation of these results. The results do indicate the merits of pursuing additional investigation.

It seems, then, from this review of previous findings, that the rationale suggested earlier has value. It is reasonable to expect that integrative styles of conflict expression will have positive effects on outcome quality, but distributive styles will have negative effects. Empirical support, although mixed, indicates that the topic warrants further attention.

As observed earlier, conflict expression and conflict resolution are connected. Supportive expression should be related to integrative resolution because it assumes that there is value in the ideas of all the members of the group and provides the climate that facilitates a search for creative solutions. Integrative management/expression of a conflict episode means that at least an attempt has been made to incorporate the important concerns of all the parties. Defensive expression of conflict, however, is likely to attenuate a search for integrative outcomes. Thus, conflicts expressed in a supportive way are more likely to be resolved integratively, and conflicts expressed defensively are more likely to be resolved distributively. Therefore, the rationale drawn to explain the connection between integrative and distributive expression of conflict and quality of outcome is the same as that drawn between integrative and distributive resolution and quality of outcome. Integrative resolution should be positively
associated with quality, and distributive resolution negatively associated with quality.

**Conflict Expression, Conflict Resolution and Satisfaction**

The same kinds of arguments that suggest an increase in outcome quality if expression of conflict has been integrative, and if conflict resolution has been integrative, can be made with respect to group member satisfaction; however, the situation is slightly more complicated. Clearly, the integrative approaches should be superior to the distributive approaches in promoting satisfaction because they are associated with a more supportive environment which encourages full participation of all group members. The increase in participation should be rewarding. To this point, the relationship is straightforward. However, it seems reasonable to expect that conflict, no matter how well managed, will be associated with less satisfaction than no conflict at all. Rationale for this is provided by Wall et al. (1984) and Hall and Watson (1970). All disagreements entail the expenditure of time and energy and distract a group from its assigned task. There is a strain toward convergence and a need for the group to coalesce quickly, but conflict frustrates this, and is likely to be dissatisfying. In addition, the realization that other group members do not share one’s beliefs and opinions is likely to increase tension levels in the group. Lastly, the overwhelming emphasis in the popular press on the achievement of harmonious relationships masks the potential benefits of conflict. Therefore, while it appears that some conflict is better than no conflict regarding quality of outcome, the opposite may be true with respect to satisfaction. It is more likely that
satisfaction will be highest in no-conflict groups, then in integrative
groups, and lowest in distributive groups.

One additional comment must be made regarding satisfaction. Although there is undoubtedly a relationship between a group member's satisfaction with the discussion process and with the final outcome, they are not necessarily identical. Hirokawa (1982), for example, notes that the failure of some researchers to demonstrate empirical links between satisfaction and other processes may be due to the fact that the construct "satisfaction" is more complex than most people acknowledge, and may not be able to be assessed in one or two questions. In the research pieces reviewed here, satisfaction is sometimes used as a generalized concept and is sometimes differentiated.

Green and Taber (1980) found that satisfaction was lower in groups instructed to achieve consensus on a decision task than in groups using a nominal voting scheme. Although a consensus format produced perception of high participation, it also produced more negative socio-emotional behaviors. This appears to indicate that the negative behaviors (implying disagreements) that are found in interaction may counteract the positive effects of increased participation and serve to decrease satisfaction.

Aram et al. (1977) studied work groups in a large organization and found that collaborative relationships engendered more satisfaction than coercive relationships on four measures of satisfaction (collaborative signifies integrative and coercive signifies distributive).

Wilkinson (1983) found that married couples trained in consensus conflict management were more satisfied both with the problem-solving
orientation and with the decisions reached than untrained couples.

In his study of groups playing a Prisoner's Dilemma game, Pood (1980) found that regulated member responses (where participants confronted the conflict but did not attempt to destroy the other players) were associated with increased satisfaction with the social interaction than unregulated (confrontative but hostile) responses. There was no significant difference regarding satisfaction with the outcome.

Hare (1980) found the opposite effect. In his study of South African schoolchildren, he observed that consensus groups were significantly more satisfied with the outcome than non-consensus groups, but there was no significant difference between the two types of groups regarding discussion process. Krueger (1980), on the other hand, found that satisfaction with both process and outcome were higher in cooperative as opposed to competitive groups.

London (1974) established experimental conditions of heterogeneity and homogeneity of information in a group problem-solving task and found that homogeneous groups were more satisfied, perceived themselves to be more effective and demonstrated a more supportive atmosphere. By extension, this supports the notion that conflict or disagreement, presumably higher in heterogeneous groups, creates dissatisfaction.

Tjosvold and Field (1983) tested the results of consensus (implying integrativeness) and majority vote (implying distributiveness) decision-making and discovered that consensus facilitates the acceptance of the decision but that decision quality was not affected by the decision strategy. Satisfaction with the outcome, therefore, may be entirely
unrelated to decision quality.

The studies reviewed up to this point tend to support the notion that satisfaction is related to the expression of conflict and the resolution of conflict in the expected ways. However, several other works tend to refute the expected relationship. For example, Hill (1976) assumed that members of groups whose leaders were not opinionated would be more satisfied with the decision process, but this hypothesis was not supported. There was no difference in satisfaction among groups with low, moderate or highly opinionated leaders. Borsig and Frey (1979) tested groups with hierarchical and egalitarian structures and found that hierarchical groups were more satisfied with both the decision process and the outcome. They theorize that the more even participation found in egalitarian groups is also associated with poorer coordination of information. If a hierarchical structure facilitates discussion and coordination, that may promote a better decision, and this in turn may enhance satisfaction. Finally, in two studies which utilized the NASA exercise, no difference was detected in satisfaction between members of consensus and non-consensus groups (Nemiroff and King, 1975; Hirokawa, 1982).

The results are mixed, and there are cautions to be observed in reviewing these studies. First, as before, integrativeness and distributiveness of the interaction must be inferred from other information, such as a group structure defined as consensus-seeking or cooperative. Second, the tasks were not necessarily the same. For example, in two of the studies which found no difference in satisfaction, the task used was the NASA exercise, which is not
necessarily designed for group solution. A correct solution exists for this exercise, and there is no particular advantage in having a group solve it, since searching for alternatives which incorporate the concerns of all into the final solution is irrelevant.

One study in which distributive and integrative behavior was observed directly was that reported by Wall et al. (1984). Results from this study indicate support for the contention that conflict per se reduces satisfaction. (Satisfaction here was considered a unitary concept.) There appeared to be no relationship between satisfaction and conflict management style; rather, satisfaction was tied to the amount of conflict. One reason why this may have been the case is that the groups used in this study were ones that had been formed only two to four days before the experiment was conducted. They had not been together long enough to feel comfortable with each other, and they had not had any experience with small group theory, so their feelings about conflict, irrespective of the type of management, may have been negative. Moreover, the amount of conflict experienced by all the groups was relatively small, so generalization can only be tentative. There is not necessarily any reason to believe that this relationship will hold for groups that have been together longer and have been exposed to pedagogical information touting the benefits of conflict.

Consequently, the relationship suggested earlier still makes sense. There should be more satisfaction in groups that express and resolve conflict integratively than in groups that express and resolve conflict distributively. This should be particularly true if there are substantial enough amounts of conflict for the participants to arrive at
Summary and Hypotheses

In light of the previous discussion, the following tentative conclusions can be advanced. Conflict is manifested in the verbal interaction of group discussions, and this interaction affects the quality of the final outcome. Complete lack of conflict reduces the available pool of ideas and is likely to affect the outcome negatively, although it may not necessarily hurt satisfaction. Disagreement which is expressed integratively, with accompanying reasons for the disagreement, clarifying comments, and substantiation, is likely to have a positive effect on the final outcome as well as on satisfaction. On the other hand, disagreement which is expressed in a distributive way, where remarks are opinionated and lack substantiation, is likely to have a detrimental effect. In a parallel vein, conflict episodes whose outcomes are integrative will have a positive effect on outcome quality and on satisfaction, but distributively resolved conflict episodes will have a negative effect. The hypotheses reflect the contention that conflict expression and conflict resolution are separate processes.

Given that these conclusions are reasonable and are warranted by previous findings, the following major hypotheses will guide this research:

1. There will be a curvilinear relationship between the gross amount of conflict and quality of outcome.

2. Groups in which the conflicts are expressed integratively will have higher decision quality scores than either groups where the conflicts are not expressed at all or groups where the conflicts are expressed distributively.

3. Groups in which the conflicts are expressed integratively will indicate higher satisfaction with the final outcome than groups where the conflicts are expressed distributively.
4. Groups in which the conflicts are expressed integratively will indicate higher satisfaction with the decision-making process than groups where the conflicts are expressed distributively.

5. Groups in which the conflicts are not expressed at all will indicate more satisfaction with the group process than either groups where the conflicts are expressed integratively or distributively.

6. There will be a positive relationship between integrative conflict resolution and decision quality, and a negative relationship between distributive resolution and quality.

7. There will be a positive relationship between integrative conflict resolution and satisfaction with the final outcome, and a negative relationship between distributive resolution and outcome satisfaction.

8. There will be a positive relationship between integrative conflict resolution and satisfaction with the decision process, and a negative relationship between distributive resolution and process satisfaction.

In the next section, the methodology will be presented. The specific recommendations pertaining to the conduct of research in small group communication which were alluded to earlier in this chapter, and how they have been incorporated into the research design, will be elaborated.
CHAPTER THREE

Methodology

The purpose of this chapter is to detail the methodology utilized in this study. The sample will be described and the procedures will be explained. Operational definitions and measures will be detailed. The chapter concludes with an explanation of the analyses conducted and a summary of the methodological information.

First, a brief review of the study is in order. This investigation examined the relationship of the amount of conflict, method of conflict expression and type of conflict resolution with quality of outcome, satisfaction with the process and satisfaction with the outcome. Subjects, in on-going groups, were given a group exercise to complete. The completed, written exercises served as the basis for determining the quality of the group outcomes. In addition to the group exercise, the subjects were given instructions on how to conduct their group discussion. The verbal statements in these group discussions served as the primary data source for this study. The primary unit of analysis was the group, although several variables were also analyzed at the individual level.

Sample

The sample consisted of 29 groups of from four to seven
undergraduate students enrolled in a multi-section small group communication course at The Ohio State University. The 151 students ranged from freshmen to seniors and represented a wide variety of undergraduate majors. The sample consisted of 57 men (37.7%) and 94 women (62.3%). Ages ranged from 18 to 42 and the average age was 20.89 years. The structure of the course was such that students formed task-oriented groups during the first week of the quarter and remained in those intact groups throughout the quarter. The groups were responsible for a major project in the course, and approximately one-half of the course grade was dependent on their work in the group. The data were gathered during the sixth and seventh week of a ten-week quarter, so the groups had ample opportunity to become acquainted and were well past the initial formation stages. Nevertheless, they needed to remain together for completion of the course project and so were still dependent on each other. Thus, they met the criteria established for full-fledged groups by Bales and Strodtbeck (1951).

Participation was voluntary, so both money and bonus points toward the course grade served as incentives for the students to participate. Of the possible 35 intact groups from all the main campus sections of the course, 32 chose to participate. In three instances, once because an intact group consisted of only three members (one member had recently dropped the course) and twice because only two or three members of the intact group appeared for the experiment, groups from the same section were merged so that no group would be smaller than four persons. In no case were subjects placed with other subjects whom they did not know previously. Thus, 29 usable groups comprised the sample, and these
groups were representative of the population from which the sample was drawn. The data were gathered from February 13 to February 22, 1985.

**Task and Incentives**

The task was designed to generate maximum interest among the students and to stimulate discussion and conflict. Students were asked to make recommendations, as a group, on ways to improve the quality of undergraduate education at Ohio State. The pilot test of the exercise indicated that it did indeed stimulate both interest and conflict. Minor modifications were made to the exercise for this project. For example, no time limit had been specified during the pilot test and some groups were still discussing the exercise after almost an hour and a half. For this study, the discussion period was limited to 30 minutes for all groups.

The experimenter read an announcement describing the task and incentives to each main campus section of the course (See Appendix A-1) about one week prior to the experiment and encouraged students to participate. Students were instructed to come to the experimental session prepared to discuss ways to improve the quality of undergraduate education, that they would have 30 minutes to discuss possible recommendations and to come up with a written group proposal, and that they must come to consensus on which recommendation was their top-ranked recommendation. They were told that their written recommendations would be judged by a panel of experts on the basis of their workability, economic feasibility, and the likelihood that they would not create socio-political problems. They were told that their discussion would be audiotaped and that there would be a questionnaire to complete at the
end. They were instructed to come to the designated experiment rooms during their regular class period on a specifically designated day. Finally, they were told that on the day of the experiment, they would be given additional instructions regarding the way in which they were to conduct their discussion, and that they would have the chance to win additional money as well as bonus points if they were judged the group that followed the instructions best.

Two sets of incentives were given, and these were chosen after a pilot test of the project had proved their viability. First, the group whose proposal was judged the best by a panel of experts would win $100. Second, the group who most closely followed the discussion instructions they were given would win $100 and each member of the group would also receive 10 bonus points (above and beyond the bonus points given merely for participating in the project) toward their course grade. In addition, all students were informed that their recommendations would be given to the president of the University. All the incentives were designed to ensure that the students would take the task seriously and would make a genuine attempt to follow the discussion instructions.

**Experimental Conditions**

The premise behind this research, again, was that different ways of expressing conflict will have different effects on a variety of group outcomes. The way conflict is expressed affects the quality of the group's outcome in a way that simple amount of conflict will not. Thus, it was crucial to the experiment that the various groups express conflict in different ways, and it was to this end that the experimental conditions were created. The conditions are modifications of similar
conditions used by Tjosvold (1982). Groups were randomly assigned to the following treatment conditions.

**Avoid Conflict:** In this condition, subjects were instructed to avoid conflict and to smooth over any disagreements that might arise. The specific instructions given are contained in Appendix A-2.

**Competitive Conflict:** In this condition, subjects were instructed to discuss their differences frankly and openly, with each member arguing firmly for his/her own ideas. The specific instructions are contained in Appendix A-3.

**Cooperative Conflict:** In this condition, subjects were instructed to examine their differences openly and honestly, not shying away from conflict, but also keeping in mind the feelings of the other members and the good of the group as a whole. The specific instructions given are contained in Appendix A-4.

The rooms in which the groups conducted their discussion had signs posted prominently with abbreviated discussion instructions on the walls as reminders. This step was deemed necessary as a reminder after observing the discussions during the pilot test.

The incentives were the same for each group. The group which conformed most closely to the discussion instructions received $100 and each member of the group 10 bonus points. In the pilot test, subjects in the competitive conflict condition were competing for bonus point against their fellow group members, with moderate success. A discussion with the pilot test subjects revealed that at this point in the group's history, with a sense of cohesiveness having been established, the members were reluctant to compete against each other and did not argue
as frequently or as firmly as they might have done. For this reason, in this study, the entire group was made responsible for following the instructions to argue firmly. This was consistent with each of the other conditions as well, where the group as a whole was responsible for following the discussion instructions.

Measures and Operational Definitions

The key terms to be defined were conflict, conflict episode, and speaking turn. Terms to be defined and measured were amount of conflict, type of conflict expression, type of conflict resolution, satisfaction with the discussion process, satisfaction with the outcome, and quality of outcome. In several instances two measures were taken — an empirically derived measure along with a perceived measure. In addition, although the study used the group as the unit of analysis, several group measures were based on individual measures. Explanations are detailed below.

Conflict: Conflict was defined, elaborating on Thomas (1976), as any verbal speaking turn indicating opposition and ranging from intellectual disagreement to physical violence, although it was considered unlikely that physical violence would be observed. Only manifest conflict was of interest, so that although unexpressed internal disagreement may be conceived of as conflict, it was not counted in this study.

Conflict Episode: A conflict episode, elaborating on Baxter (1982), was defined as a set of sequential speaking turns, with a perceived beginning point and an ending point, which indicates opposition. A conflict episode began with the expression of a
disagreement and continued until one of three things happens: resolution was reached on the conflict issue, the group explicitly agreed that resolution could or should not be achieved, or the group implicitly abandoned the issue by shifting topic focus before it achieved closure on the conflict issue.

The minimum number of utterances in a conflict episode was two: the expression of a disagreement, and the reaction to that disagreement. Others (Love, 1984) have extended this definition to include only those episodes which last for at least three statements and which involve at least three group members. However, this study contends that the way any conflict is expressed makes a difference. Thus, even in the case where only one statement of disagreement was made and the reaction to that disagreement was to shift the topic focus, the way that disagreement was expressed potentially affected the atmosphere of the group and may ultimately have affected outcome. For example, disagreement expressed hostilely should have a different effect from disagreement expressed tentatively, and a disagreement responded to directly should have a different effect from a disagreement responded to by the disconfirmation of changing topic focus. For this reason, all expressions of disagreement, no matter how long they last or how many group members were involved, were included in the analysis.

A trained coder listened to each audiotape and identified each conflict episode, noting the beginning and ending points. In cases where the presence of an episode was not entirely clear, two additional trained coders listened to the questionable episode, evaluated it, and majority opinion prevailed.
Speaking Turn: A speaking turn was defined as an uninterrupted speech by a group member where the words and the intent were identifiable and in most instances was represented by an complete speech dealing with one basic idea and delivered by one group member. In a few instances, a member may have made an uninterrupted speech which dealt with two identifiable ideas, and in this case these were considered two turns and coded as such. In a few instances, group members made complete utterances which were unable to be distinguished due to poor audiotape quality, and these were eliminated from analysis. Also eliminated from analysis were speaking turns which did not appear to fit the coding categories. For example, if several members of a group digressed within a conflict episode the first digression would be coded as a topic shift, but subsequent turns would not be coded until the group returned to the initial conflict issue. Also, sentence fragments embedded within another member’s turn were not coded, and most single-word turns (for example, "Mmhmm" or "Yeah") were not coded because often the intent could not be determined. Three coders worked independently to establish unitizing reliabilities. Of the 285 potential speaking turns, there was unanimous agreement on 81% as to whether the utterance constituted a codable speaking turn. The 285 potential turns constituted approximately 17 percent of the total.

Amount of Conflict, Empirically Determined: The amount of conflict was operationalized and measured in two different ways. The number of conflict episodes in each group served as the first measure of amount of conflict. However, this measure did not capture adequately the amount of time a group spent in conflict situations, so amount of conflict was
also operationalized as the percentage of total time spent in conflict. A tape counter was used to mark the beginning of a conflict episode and the end, so that a length was determined for each episode. The lengths of each episode were summed to arrive at the length of time spent in conflict in a particular group. The entire length of the discussion also was determined by noting the starting time and the ending time of the discussion. The conflict length was divided by the total discussion length and multiplied by 100, and the resulting percentage of time spent in conflict served as the second measure of amount of conflict. These two measures were designated "number of episodes" and "percent of conflict," respectively. Both these variables were analyzed at the group level only.

**Perceived Amount of Conflict:** The perceived amount of conflict was determined by questionnaire and was assessed by a nine-item, five-point Likert-type scale which ranged from Strongly Agree to Strongly Disagree (See Items 17 through 26, Appendix B). The original eight-item version of this scale has been consistently reliable in previous research (Nolan, 1982; Wall and Nolan, 1984; Wall et al., 1984). Scores on this measure could range from a low (little perceived conflict) of 9 to a high (high perceived conflict) of 45. Cronbach's alpha yielded a reliability coefficient of .88 on this measure. This variable was analyzed at both the individual and group levels. The mean of the individual scores for a particular group served as the measure of that group's perceived amount of conflict.

**Type of Conflict Expression:** Conflict expression, related to but viewed as broader than conflict management, was conceived of as falling
into one of three mutually exclusive categories identified in the literature. Conflict could be expressed in an integrative, distributive, or indirect/avoidant way. The coding scheme used was a modification of Sillars' (1982) Verbal Tactics Coding Scheme (See Appendix C for a complete description of coding procedures with examples for each category). In general, and as previously discussed in Chapter Two, distributively expressed conflict was that conflict which seemed to try to "win" a disagreement, with the underlying assumption that a conflict involves a winning and a losing party. Integratively expressed conflict was that disagreement expressed in such a way as to attempt to incorporate the concerns of all parties into the final outcome, with the underlying assumption that all parties could be ultimate winners. Indirect or avoidance tactics were those in which disagreements were expressed indirectly or in which direct acknowledgement or direct attempts to come to resolution were avoided. Each broad category included several subcategories. There were three subcategories in the indirect/avoidance category: indirect disagreement, topic shifting, overt attempts to end the conflict without resolving it. The integrative category had five subcategories: direct and provisional statements, providing rationale/clarification, seeking rationale or clarification, problem-solving attempts, and direct support. The distributive category included three subcategories: direct and certain statements, non-coercive compliance gaining, and coercive compliance gaining. The broad categories were established on an apriori basis, but the subcategories were derived using both deductive and inductive methods and working with the transcripts and audiotapes of the groups.
Three trained coders, each supplied with the audiotapes of the conflict episodes from five groups (approximately 17% of the total number of groups) and a transcript of those episodes, evaluated each speaking turn and categorized it according to the modified Verbal Tactics Coding Scheme. Of the 261 speaking turns coded, there was unanimous agreement on the broad (three categories) coding of 214 turns (81.99%), and two out of three coders agreed on 259 (99.23%) turns. Those turns where two of the three coders agreed were considered properly coded. Agreement was reached on the others after discussion. Regarding the specific coding (eleven categories), there was unanimous agreement on 181 turns (69.35%) and two out of three coders agreed on 258 turns (98.85%). Clearly, the broad categories provided greater unanimous intercoder reliability at a respectable 82%. Analyses using the broad categories proceeded with some confidence, although caution was observed when using the information derived from the specific categories.

Then, for each group, the numbers in each category and in each subcategory were divided by the total number of turns coded and the percentage was used as the empirically derived score for that group. Thus, percentages were derived for each of the eleven subcategories as well as for each of the three broad categories. The various percentages were then used in the subsequent analyses. Type of conflict expression was analyzed as a group-level variable only.

**Perceived Conflict Management Style:** The perceived conflict management style, conceived of as closely relating to conflict expression, was determined through the use of the Organizational
Communication Conflict Instrument, Form B (Putnam and Wilson, 1982). This thirty-item instrument, arranged as a seven-point Likert type scale, measures respondents perceptions regarding the way they believe conflict was handled during a discussion. The items were reworded slightly to reflect the fact that the discussion in question was a group discussion. Three broad styles of perceived conflict management are measured by the three indices included in the CCCI: non-confrontation, which corresponds to the indirect/avoidance style in Sillars’ instrument; solution-orientation, which corresponds to the problem-solving, integrative style; and control-orientation, which corresponds to the distributive style. This was the only instrument located in the literature which attempted to measure perceived management style. Although this measure does not exactly correspond to the concept of "conflict expression" as it has been used in this investigation, it is conceptually similar and provides a parallel measure of expression style as well as an additional validity check.

The instrument was constructed so that the higher the individual’s score on an index, the more that individual perceives that s/he (or the group, in this case) managed conflict according to the style measured by that index. An individual’s score could range from 7 to 49 on the Control index (the higher the score, the more that individual perceived that conflict was managed in a controlling way), from 12 to 84 on the Non-confrontation index (the higher the score, the more non-confrontative the perceived management style), and from 11 to 77 on the Solution-orientation index (the higher the score, the more solution-oriented the perceived management style). Reliabilities on the three
indices varied. Cronbach's alpha yielded reliability coefficients of .78 for the seven-item Control index, .86 for the twelve-item Non-confrontation index, and .69 for the eleven-item Solution-orientation index. These reliabilities were lower than those achieved by Putnam and Wilson (1982) which were .82, .93 and .88, respectively.

This variable was analyzed as both an individual and a group measure. The group means on each of the three indices were used as the group-level measures on the perceived type of conflict management score.

**Conflict Resolution:** Conflict resolution was defined as the final outcome of an expressed conflict and was measured empirically (See Appendix D for complete coding details and examples). A given conflict could be resolved in one of three different ways. Integrative resolution meant that, in the final determination of the conflict, concerns of each of the conflicting parties were actually incorporated into the final outcome. Distributive resolution meant that in the final resolution, there was an identifiable "winner" whose desires were incorporated into the solution and at least one identifiable "loser." In the third category conflicts were unresolved and the conflict issue was abandoned before resolution had been reached.

An attempt was made, when coding the resolutions, not to be influenced by attempts of the parties to use a particular conflict management style. For example, in some instances parties attempted to resolve an issue integratively, trying to reconcile opposing views into the final solution, but this often proved impossible. The attempts to resolve problems integratively would have been noted in the conflict expression measure. Here, only the actual final resolution counted.
Thus, an assumption was made that these two measures deal with different, albeit related, things and each had a differential bearing on such things as quality of outcome and satisfaction.

Three independent coders categorized the conflict resolutions of 36 episodes from five groups (approximately 17 percent of all groups). There was unanimous agreement on 31, or 86%, of the episodes, and two out of three coders agreed on all 36 episodes. Thus, all episodes (100%) were considered properly coded.

The resolution types were converted to percentages for subsequent analyses. The number of episodes in each category (distributive, integrative and unresolved) for a given group was divided by the total number of episodes for that particular group and multiplied by 100. Thus, each group had a distributive resolution score (which was that group's percent of distributively resolved episodes), an integrative resolution score, and an unresolved score. Conflict resolution was analyzed only at the group level.

**Dependent Variables**

There were three principal dependent variables in this study: satisfaction with process, satisfaction with outcome, and quality of outcome. What follows is an explanation of how each was defined and measured.

**Satisfaction With Process:** This was defined as the degree of satisfaction with the climate of the discussion and was measured by an eight-item, five-point, Likert-type scale which ranged from Strongly Agree to Strongly Disagree (See Items 1 through 8, Appendix B). An individual's score could range from a low of 8 (low satisfaction with
the discussion process) to a high of 40 (high satisfaction). The original six-item scale has been consistently reliable in previous research (Nolan, 1982; Wall and Nolan, 1984; Wall et al., 1984). Reliability utilizing Cronbach's alpha was .85 for this measure.

Satisfaction with process was analyzed as both an individual and a group variable. The mean of the individual scores for a given group served as the group-level satisfaction with process score for that particular group.

**Satisfaction With Outcome:** This was defined as the degree of satisfaction with the group's final outcome and was measured by a nine-item, five-point, Likert-type scale which ranged from Strongly Agree to Strongly Disagree (See Items 9 through 17, Appendix B). The original six-item scale has been consistently reliable in past research (Nolan, 1982; Wall and Nolan, 1984; Wall et al., 1984). An individual's score could range from a low of 9 (indicating low satisfaction with the outcome) to a high of 45 (high satisfaction). Reliability for this scale was .87 using Cronbach's alpha.

**Quality of Outcome:** Quality of outcome was defined as the degree to which the final written proposals with accompanying rationales were determined to be workable, economically feasible, and unlikely to cause adverse socio-political reactions. The proposals were rated by three judges working independently. All three judges were graduate students. One was a recent undergraduate, a second had several years experience as a curriculum counselor in the Department of Communication, and the third had served as a freshman academic adviser, career counselor and university administrator. Each judge was given a typed copy of each
group's proposal, identified only by code number, and a set of judging instructions (See Appendix F-1). In addition to the three criteria mentioned previously, a fourth criterion was added, as a result of the pilot test, to help the judges more easily differentiate one proposal from another. This fourth criterion was: the degree to which a given proposal was substantially better or substantially worse than the other proposals. A sample of the evaluation sheets used in the study may be seen in Appendix F-2.

Thus, each proposal was evaluated along four seven-point, semantic differential scales, so that a single judge could award from four (low quality) to 28 (high quality) points for a given proposal. The three judges scores for each proposal were summed to arrive at the overall quality assessment for that proposal, and scores could range from a low of 12 to a high of 84. Scores actually ranged from 17 to 77.

Analyses

The data were analyzed using the SPSSX Statistical Package (1983). The basic design was a one-way analysis of variance. At the individual level, the independent variable for the ANOVA was the type of conflict expression (as manipulated via the experimental conditions) and the dependent variables were satisfaction with the process and satisfaction with the outcome. Additional analyses examined the relationships among perceived conflict management styles, perceived amount of conflict, and the various measures of satisfaction. At the group level, the independent variable for the ANOVA, again, was the type of conflict expression and the dependent variables were quality of outcome, satisfaction with the process and satisfaction with the outcome. In
addition, the relationships among conflict resolution type, quality of outcome, amount of conflict, and the two measures of satisfaction were assessed.

Other relationships also were also of interest. At the individual level, Pearson Product-Moment correlations were computed to assess the relationship between the perceived amount of conflict, perceived conflict management style, and satisfaction. At the group level, correlations were computed between the perceived and their corresponding observed measures (for example, between the perceived amount of conflict, number of conflict episodes and percent of time spent in conflict, and between the perceived conflict management styles and empirically determined conflict expression styles). Finally, at the group level, correlations were calculated in order to assess the relationship between the amount of conflict (perceived and observed), the type of conflict expression (perceived management style and observed expression style), type of conflict resolution (observed only), satisfaction (perceived only) and quality of outcome.

Summary

This study investigates the relationships among conflict, conflict expression, conflict resolution, satisfaction, and quality of outcome in small group decision-making. Subjects, undergraduates at The Ohio State University, were kept in their intact work groups and given as an exercise the task of developing a proposal to improve the quality of undergraduate education at Ohio State. The 29 groups used in the study were randomly placed into one of three possible experimental conditions (avoid conflict, cooperative conflict, and competitive conflict) and
were instructed to conduct their half-hour discussion accordingly. To help ensure that the subjects would take the task seriously and would attempt to conduct the discussion according to the instructions, monetary and bonus point incentives were offered for the group with the best proposal and for the group that most closely followed the discussion instructions. The discussions were audiotaped, the proposals were submitted in written form to the experimenter at the conclusion of the discussion, and subjects completed a questionnaire at the end of the experiment.

Quality of the proposals (quality of outcome) was assessed by a panel of expert judges. Actual amount of conflict was assessed by identifying the number of conflict episodes on the audiotapes and measuring the total percentage of time spend in conflict episodes. Conflict expression style was assessed by coding the speaking turns within the conflict episodes from the audiotapes and transcripts, and conflict resolution type was measured by assessing objectively the final resolution of each episode. Perceived amount of conflict, perceived conflict management style, satisfaction with the discussion process and satisfaction with the outcome were assessed by questionnaire.

The following chapter presents the results of the analyses and discusses those results.
CHAPTER FOUR

Results

Several categories of results are reported in this chapter. First, a summary of the data is provided. Then, analyses which test the success of the experimental manipulations are reported, and the results of the direct tests of the hypotheses are presented. Finally, additional post hoc analyses are reported.

Statistical Analyses

Descriptive data of the individual variables are presented in Table 1 and of the group variables in Table 2.

| TABLE 1
| INDIVIDUAL VARIABLES -- DATA SUMMARY |
|-------------------|-----------|-----------|-----------|
| VARIABLE           | N | MEAN | S.D. | RANGE |
| CONFLICT, PERCEIVED AMOUNT | 151 | 20.13 | 6.85 | 9-43 |
| NON-CONFRONTING MANAGEMENT | 151 | 34.95 | 11.81 | 11-76 |
| SOLUTION-ORIENTED MANAGEMENT | 151 | 52.90 | 8.02 | 29-70 |
| CONTROLLING MANAGEMENT | 151 | 25.54 | 8.06 | 8-46 |
| SATISFACTION WITH PROCESS | 151 | 32.78 | 5.59 | 10-40 |
| SATISFACTION WITH OUTCOME | 151 | 36.24 | 6.15 | 18-45 |
TABLE 2

GROUP VARIABLES -- DATA SUMMARY

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>N</th>
<th>MEAN</th>
<th>S.D.</th>
<th>RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUALITY OF OUTCOME</td>
<td>29</td>
<td>45.21</td>
<td>14.65</td>
<td>17-77</td>
</tr>
<tr>
<td>NUMBER OF EPISODES</td>
<td>29</td>
<td>8.48</td>
<td>4.07</td>
<td>2-16</td>
</tr>
<tr>
<td>PERCENT OF CONFLICT</td>
<td>29</td>
<td>25.37</td>
<td>16.82</td>
<td>4.97-66.45</td>
</tr>
<tr>
<td>PERCEIVED AMOUNT OF CONFLICT</td>
<td>29</td>
<td>20.05</td>
<td>5.65</td>
<td>10.8-32.5</td>
</tr>
<tr>
<td>NON-CONFRONTING MANAGEMENT</td>
<td>29</td>
<td>34.33</td>
<td>8.68</td>
<td>17.6-56.5</td>
</tr>
<tr>
<td>SOLUTION-ORIENTED MANAGEMENT</td>
<td>29</td>
<td>53.17</td>
<td>5.77</td>
<td>42.2-63.5</td>
</tr>
<tr>
<td>CONTROLLING MANAGEMENT</td>
<td>29</td>
<td>25.49</td>
<td>6.71</td>
<td>11.4-40.5</td>
</tr>
<tr>
<td>INDIRECT EXPRESSION (%)</td>
<td>29</td>
<td>15.00</td>
<td>9.77</td>
<td>0.0-37.5</td>
</tr>
<tr>
<td>INTEGRATIVE EXPRESSION (%)</td>
<td>29</td>
<td>62.26</td>
<td>13.16</td>
<td>42.5-91.67</td>
</tr>
<tr>
<td>DISTRIBUTIVE EXPRESSION (%)</td>
<td>29</td>
<td>23.82</td>
<td>11.58</td>
<td>7.14-43.75</td>
</tr>
<tr>
<td>UNRESOLVED EPISODES (%)</td>
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<td>36.05</td>
<td>22.10</td>
<td>0.0-75.0</td>
</tr>
<tr>
<td>INTEGRATIVE RESOLUTION (%)</td>
<td>29</td>
<td>24.48</td>
<td>17.44</td>
<td>0.0-66.67</td>
</tr>
<tr>
<td>DISTRIBUTIVE RESOLUTION (%)</td>
<td>29</td>
<td>39.47</td>
<td>18.30</td>
<td>0.0-77.78</td>
</tr>
<tr>
<td>SATISFACTION WITH Process</td>
<td>29</td>
<td>32.99</td>
<td>4.08</td>
<td>19.2-39.0</td>
</tr>
<tr>
<td>SATISFACTION WITH OUTCOME</td>
<td>29</td>
<td>36.42</td>
<td>3.78</td>
<td>29.5-42.25</td>
</tr>
</tbody>
</table>

Manipulation Check

The validity of the findings of this study rests in part on the success of the experimental manipulations -- did the groups conduct their discussions according to the avoid conflict, cooperative conflict and competitive conflict instructions? The effects of the experimental manipulations were assessed through a series of ANOVAs with the perceived conflict management styles and observed conflict expression styles as the dependent variables. Multiple comparisons utilized the Scheffe procedure and alpha levels were set at .05. Tables 3 through 5 present the results of the tests pertaining to the perceived conflict management styles at the individual level.
### Table 3

**Perceived Non-Confronting Conflict Management Style at the Individual Level**

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>F Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>2062.6350</td>
<td>1031.3175</td>
<td>8.0973</td>
<td>.0005</td>
</tr>
<tr>
<td>Within Groups</td>
<td>148</td>
<td>18850.0405</td>
<td>127.3651</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>20912.6755</td>
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<td></td>
<td></td>
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**Group**

<table>
<thead>
<tr>
<th>Conflict Style</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVOID CONFLICT</td>
<td>55</td>
<td>54.7455a</td>
<td>8.0297</td>
</tr>
<tr>
<td>COOPERATIVE CONFLICT</td>
<td>43</td>
<td>54.0465a</td>
<td>6.8381</td>
</tr>
<tr>
<td>COMPETITIVE CONFLICT</td>
<td>53</td>
<td>50.0566b</td>
<td>8.2288</td>
</tr>
<tr>
<td>TOTAL</td>
<td>151</td>
<td>52.9007</td>
<td>8.0119</td>
</tr>
</tbody>
</table>

*a,b* Groups with different letters are significantly different.

### Table 4

**Perceived Solution-Oriented Conflict Management Style at the Individual Level**

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>F Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>672.3364</td>
<td>336.1682</td>
<td>5.5508</td>
<td>.0047</td>
</tr>
<tr>
<td>Within Groups</td>
<td>148</td>
<td>8963.1735</td>
<td>60.5620</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>9635.5099</td>
<td></td>
<td></td>
<td></td>
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</table>

**Group**

<table>
<thead>
<tr>
<th>Conflict Style</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVOID CONFLICT</td>
<td>55</td>
<td>54.7455a</td>
<td>8.0297</td>
</tr>
<tr>
<td>COOPERATIVE CONFLICT</td>
<td>43</td>
<td>54.0465a</td>
<td>6.8381</td>
</tr>
<tr>
<td>COMPETITIVE CONFLICT</td>
<td>53</td>
<td>50.0566b</td>
<td>8.2288</td>
</tr>
<tr>
<td>TOTAL</td>
<td>151</td>
<td>52.9007</td>
<td>8.0119</td>
</tr>
</tbody>
</table>

*a,b* Groups with different letters are significantly different.
TABLE 5
PERCEIVED CONTROLLING CONFLICT MANAGEMENT STYLE
AT THE INDIVIDUAL LEVEL

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>D.F.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>F PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETWEEN GROUPS</td>
<td>2</td>
<td>4083.1168</td>
<td>2041.5584</td>
<td>53.3041</td>
<td>.0000</td>
</tr>
<tr>
<td>WITHIN GROUPS</td>
<td>148</td>
<td>5668.4329</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>150</td>
<td>9751.5497</td>
<td></td>
<td></td>
<td></td>
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</table>

GROUP

<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVOID CONFLICT</td>
<td>55</td>
<td>20.6727a</td>
<td>6.7688</td>
</tr>
<tr>
<td>COOPERATIVE CONFLICT</td>
<td>43</td>
<td>23.2093a</td>
<td>5.9084</td>
</tr>
<tr>
<td>COMPETITIVE CONFLICT</td>
<td>53</td>
<td>32.4717b</td>
<td>5.7196</td>
</tr>
<tr>
<td>TOTAL</td>
<td>151</td>
<td>25.5364</td>
<td>8.0422</td>
</tr>
</tbody>
</table>

a,b Groups with different letters are significantly different.

These results indicate that the experimental manipulations, at least with regard to the subjects' perceptions of conflict management style, were successful. The subjects in the avoid conflict groups reported using non-confronting conflict management strategies significantly more than subjects in either the cooperative or the competitive groups. Subjects in the avoid conflict and the cooperative conflict groups reported using solution-oriented strategies significantly more than subjects in the competitive conflict groups. Subjects in the competitive conflict groups reported using controlling conflict management strategies significantly more than subjects in either of the other two groups.

Although these results are encouraging, they deal only with the perceptions about the style of conflict management employed. The chief focus of this study was the observed style of conflict expression at the
group level. Tables 6 through 8 present the results of these ANOVAs. Alpha levels were set at .05 and the Scheffe procedure was used.

TABLE 6
INDIRECT CONFLICT EXPRESSION AT THE GROUP LEVEL

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>D.F.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>F PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETWEEN GROUPS</td>
<td>2</td>
<td>6.1349</td>
<td>3.0675</td>
<td>.0299</td>
<td>.9706</td>
</tr>
<tr>
<td>WITHIN GROUPS</td>
<td>26</td>
<td>2666.0500</td>
<td>102.5405</td>
<td></td>
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</tr>
<tr>
<td>TOTAL</td>
<td>28</td>
<td>2672.1849</td>
<td></td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVOID CONFLICT</td>
<td>10</td>
<td>14.3660</td>
<td>13.6211</td>
</tr>
<tr>
<td>COOPERATIVE CONFLICT</td>
<td>9</td>
<td>15.2922</td>
<td>6.9298</td>
</tr>
<tr>
<td>COMPETITIVE CONFLICT</td>
<td>10</td>
<td>15.3670</td>
<td>8.2467</td>
</tr>
<tr>
<td>TOTAL</td>
<td>29</td>
<td>14.9986</td>
<td>9.7691</td>
</tr>
</tbody>
</table>

TABLE 7
INTEGRATIVE CONFLICT EXPRESSION AT THE GROUP LEVEL

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>D.F.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>F PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETWEEN GROUPS</td>
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<td>50.9070</td>
<td>25.4535</td>
<td>.1380</td>
<td>.8717</td>
</tr>
<tr>
<td>WITHIN GROUPS</td>
<td>26</td>
<td>4796.2669</td>
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<tr>
<td>TOTAL</td>
<td>28</td>
<td>4847.1739</td>
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</table>

<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVOID CONFLICT</td>
<td>10</td>
<td>64.0610</td>
<td>18.0893</td>
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<tr>
<td>COOPERATIVE CONFLICT</td>
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<td>61.0100</td>
<td>10.8259</td>
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<td>61.5960</td>
<td>10.0756</td>
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<td>TOTAL</td>
<td>29</td>
<td>62.2641</td>
<td>13.1573</td>
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</tbody>
</table>
TABLE 8

DISTRIBUTIVE CONFLICT EXPRESSION AT THE GROUP LEVEL

<table>
<thead>
<tr>
<th>SOURCE</th>
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<th>MS</th>
<th>F</th>
<th>F PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETWEEN GROUPS</td>
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<td>105.9010</td>
<td>52.9505</td>
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<td>WITHIN GROUPS</td>
<td>26</td>
<td>3648.8670</td>
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</table>

<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVOID CONFLICT</td>
<td>10</td>
<td>21.5740</td>
<td>12.4327</td>
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<td>COOPERATIVE CONFLICT</td>
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<td>26.1720</td>
<td>11.8654</td>
</tr>
<tr>
<td>TOTAL</td>
<td>29</td>
<td>23.8183</td>
<td>11.5801</td>
</tr>
</tbody>
</table>

These results, unfortunately, were neither significant nor particularly encouraging. The means of all three groups were similar on the indirect conflict expression measure with the avoid conflict group having the lowest rather than the highest mean. The means on the integrative expression measure also were opposite the predicted direction, with the cooperative group having the lowest mean. Only the means on the distributive expression measure were in the predicted direction, with the competitive conflict group having the highest and the avoid conflict group the lowest.

Because the combined results of the perceptual variables at the individual level and the observed variables at the group level were inconclusive regarding the success of the experimental manipulation, additional ANOVAs were computed using the perceived conflict management measures, but this time at the group rather than the individual level. As before, the Scheffe procedure was used for multiple comparisons and
alpha levels were set at .05. Results are presented in Tables 9 through 11.

### TABLE 9

**PERCEIVED NON-CONFRONTING CONFLICT MANAGEMENT STYLE AT THE GROUP LEVEL**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>D.F.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>F PROB</th>
</tr>
</thead>
<tbody>
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<td>432.1166</td>
<td>216.0583</td>
<td>3.3505</td>
<td>.0507</td>
</tr>
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<td>WITHIN GROUPS</td>
<td>26</td>
<td>1676.6173</td>
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<tr>
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<td>28</td>
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<table>
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<th>N</th>
<th>MEAN</th>
<th>SD</th>
</tr>
</thead>
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<tr>
<td>AVOID CONFLICT</td>
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<td>39.6100a</td>
<td>10.8539</td>
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<td>30.9600a</td>
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<td>COMPETITIVE CONFLICT</td>
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<td>32.0690b</td>
<td>6.2922</td>
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<td>TOTAL</td>
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<td>34.3252</td>
<td>8.6782</td>
</tr>
</tbody>
</table>

*a, b* Groups with different numbers are significantly different using Newman-Keuls.

### TABLE 10

**PERCEIVED SOLUTION-ORIENTED CONFLICT MANAGEMENT STYLE AT THE GROUP LEVEL**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>D.F.</th>
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<th>MS</th>
<th>F</th>
<th>F PROB</th>
</tr>
</thead>
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<tr>
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<td>931.8955</td>
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<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVOID CONFLICT</td>
<td>10</td>
<td>55.4610</td>
<td>5.8792</td>
</tr>
<tr>
<td>COOPERATIVE CONFLICT</td>
<td>9</td>
<td>54.3489</td>
<td>4.5806</td>
</tr>
<tr>
<td>COMPETITIVE CONFLICT</td>
<td>10</td>
<td>49.8280</td>
<td>5.5405</td>
</tr>
<tr>
<td>TOTAL</td>
<td>29</td>
<td>53.1734</td>
<td>5.5691</td>
</tr>
</tbody>
</table>
TABLE 11
PERCEIVED CONTROLLING CONFLICT MANAGEMENT STYLE
AT THE GROUP LEVEL

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>D.F.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>F PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETWEEN GROUPS</td>
<td>2</td>
<td>863.5168</td>
<td>431.7584</td>
<td>28.2801</td>
<td>.0000</td>
</tr>
<tr>
<td>WITHIN GROUPS</td>
<td>26</td>
<td>396.9473</td>
<td>15.2672</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>28</td>
<td>1260.4641</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

GROUP N MEAN SD

<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVOID CONFLICT</td>
<td>10</td>
<td>20.3360a</td>
<td>5.0406</td>
</tr>
<tr>
<td>COOPERATIVE CONFLICT</td>
<td>9</td>
<td>23.0244a</td>
<td>2.4623</td>
</tr>
<tr>
<td>COMPETITIVE CONFLICT</td>
<td>10</td>
<td>32.8600b</td>
<td>3.6536</td>
</tr>
<tr>
<td>TOTAL</td>
<td>29</td>
<td>25.4890</td>
<td>6.6973</td>
</tr>
</tbody>
</table>

a,b Groups with different numbers are significantly different.

These results were more encouraging, as several attained statistical significance. The group means on non-confrontation were in the correct direction, with the avoid conflict group having the highest mean and the cooperative conflict condition the lowest. The F ratio approached statistical significance with Scheffe and in fact achieved it using the Newman-Keuls procedure. The solution-oriented means were also in an appropriate direction. The avoid conflict and cooperative conflict groups were very close, with the avoid group being slightly higher. Both means were higher than the competitive conflict mean, and the difference approached statistical significance (p<.0650). Finally, the mean of the competitive conflict group was significantly higher on the perceived controlling management style measure than the means of either of the other two groups.
The success of the experimental manipulation was mixed. There were enough encouraging results for the analysis to proceed as planned. However, there were sufficient questions raised, especially regarding the performance of the observed measures of conflict expression, that several post hoc analyses were conducted which disregarded the established experimental conditions in assessing the relationship between conflict expression and outcome quality, satisfaction with outcome and satisfaction with process. These additional results are presented after the hypotheses are discussed.

Perceived vs. Observed Measures

The previous analyses appeared to identify differences in the performance of the perceptual variables as compared with the observed variables. This made an assessment of the relationship between the two types of measures particularly important. Pearson Product-Moment correlation coefficients were computed comparing the two types of variables, and the results are presented in Table 12.

<table>
<thead>
<tr>
<th></th>
<th>NUMBER OF EPISODES</th>
<th>PERCENT OF CONFLICT</th>
<th>INDIRECT EXPRESS.</th>
<th>INTEGRAT. EXPRESS.</th>
<th>DISTRIBUT. EXPRESS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERCEPTUAL:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONFLICT</td>
<td>.75*</td>
<td>.71*</td>
<td>-.04</td>
<td>-.28</td>
<td>.48*</td>
</tr>
<tr>
<td>NON-CONFRONT.</td>
<td>-.37**</td>
<td>-.37**</td>
<td>.28</td>
<td>-.01</td>
<td>-.30</td>
</tr>
<tr>
<td>SOLUTION-ORIENT.</td>
<td>-.43**</td>
<td>-.28</td>
<td>-.08</td>
<td>.32**</td>
<td>-.34**</td>
</tr>
<tr>
<td>CONTROLLING STYLE</td>
<td>.69*</td>
<td>.57*</td>
<td>-.01</td>
<td>-.22</td>
<td>.37**</td>
</tr>
</tbody>
</table>

N=29, * p<.01, **p<.05
These results indicate a reasonably close correspondence between the perceived and observed measures. Conflict as perceived by the subjects was significantly correlated with the number of conflict episodes identified by the coders ($r=.75$, $p<.01$) and the percent of time spent in conflict ($r=.71$, $p<.01$). The perceived amount of conflict also positively correlated with the distributive expression measure, as would be expected.

Perceived non-confrontation was not significantly related to indirect expression as was expected, but was negatively and significantly related to the number of conflict episodes ($r=-.37$, $p<.05$) and to the percent of conflict ($r=-.37$, $p<.05$). Perceived solution-oriented management was positively related to integrative expression ($r=.32$, $p<.05$) and negatively related to both distributive expression ($r=-.34$, $p<.05$) and indirect expression, although the latter was not significant. Perceived controlling management was negatively related to indirect and integrative expression, although not significantly, and positively related to distributive expression ($r=.37$, $p<.05$). These results help support the validity of both measures even though stronger relationships would have been more desirable, especially for the indirect expression measure. The fact that these measures were not completely consistent supports the value of conducting separate analyses using both types of measures.

Tests of Hypotheses

In this section, the substantive hypotheses will be restated incorporating the specific terminology utilized in this study and each
hypothesis will be followed by the presentation and a brief discussion of the results.

Hypothesis One: There will be a curvilinear relationship between the amount of conflict and the quality of outcome.

This hypothesis was tested using linear regression forcing entry of both the predictor variables and squares of the predictor variables, and deviation from linearity was examined via the t statistic. The dependent variable was quality of outcome, which was regressed against each of the three different measures of conflict: perceived amount of conflict, number of conflict episodes and percent of conflict. Results of all three analyses are presented in Table 13.

<table>
<thead>
<tr>
<th>DEPENDENT</th>
<th>PREDICTORS</th>
<th>t</th>
<th>PROB</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUALITY</td>
<td>PERCEIVED AMT OF CONFLICT</td>
<td>.327</td>
<td>.7464</td>
<td>.02322</td>
</tr>
<tr>
<td>QUALITY</td>
<td>PERCEIVED AMT OF CONFLICT (SQUARED)</td>
<td>-.118</td>
<td>.9069</td>
<td>-.35897</td>
</tr>
<tr>
<td>QUALITY</td>
<td>PERCENT OF CONFLICT</td>
<td>.825</td>
<td>.4171</td>
<td>.49045</td>
</tr>
<tr>
<td>QUALITY</td>
<td>PERCENT OF CONFLICT (SQUARED)</td>
<td>-1.018</td>
<td>.3181</td>
<td>-9.12887E-03</td>
</tr>
<tr>
<td>QUALITY</td>
<td>NUMBER OF CONFLICT EPISODES</td>
<td>-1.869</td>
<td>.0730</td>
<td>-5.11655</td>
</tr>
<tr>
<td>QUALITY</td>
<td>NUMBER OF CONFLICT EPISODES (SQUARED)</td>
<td>2.136</td>
<td>.0423</td>
<td>.33481</td>
</tr>
</tbody>
</table>
The t statistics computed on the regression coefficients for the perceived amount of conflict and perceived conflict squared were not significant (p<.75 and <.91 respectively) nor were those computed for percent of conflict and percent of conflict squared (p< .42 and .32). These did not support the hypothesis. However, the regression using number of conflict episodes and number of conflict episodes squared as the predictors did indicate that the quadratic term was significantly different from zero (p<.04), suggesting a curvilinear (quadratic) relationship. An additional regression was conducted to test for a cubic relationship, and this was not significant. However, a plot of the scores indicated that although the relationship was curvilinear, the line was curved opposite the predicted way (See Appendix G for computer scattergram of scores). High quality was associated with the lowest and the highest number of episodes per group, and the lowest quality was associated with the intermediate number of episodes. This finding, too, fails to support the hypothesis.

Hypothesis Two: Cooperative conflict groups will have higher decision quality scores than either avoid conflict or competitive conflict groups.

This hypothesis was tested using a one-way analysis of variance with type of conflict expression as the independent variable and quality of outcome as the dependent variable. Alpha levels were set at .05 and group comparisons utilized the Scheffe procedure. Results are presented in Table 14.
TABLE 14

TYPE OF CONFLICT EXPRESSION AND QUALITY

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>D.F</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>F PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETWEEN GROUPS</td>
<td>2</td>
<td>796.2586</td>
<td>398.1293</td>
<td>1.9851</td>
<td>.1576</td>
</tr>
<tr>
<td>WITHIN GROUPS</td>
<td>26</td>
<td>5214.5000</td>
<td>200.5577</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>28</td>
<td>6010.7586</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

GROUP           | N    | MEAN   | SD |
-------------|------|--------|----|
AVOID CONFLICT | 10   | 44.7000 | 15.1147 |
COOPERATIVE CONFLICT | 9    | 38.6667 | 11.5434 |
COMPETITIVE CONFLICT | 10   | 51.6000 | 15.2476 |
TOTAL          | 29   | 45.2069 | 14.6516 |

The F ratio is not significant and the results fail to support the hypothesis. In fact the quality of outcome means are exactly opposite the prediction, with the cooperative groups having the lowest mean quality.

Hypothesis Three: Cooperative conflict groups will have higher satisfaction with the final outcome than competitive conflict groups.

This hypothesis was tested using a t-test with outcome satisfaction as the dependent variable. Since this measure was taken at the group and individual levels, results of both t-tests are presented in Tables 15 and 16.

TABLE 15

ONE-TAILED t-TEST OF COOPERATIVE AND COMPETITIVE EXPRESSION ON OUTCOME SATISFACTION AT THE GROUP LEVEL

<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
<th>t</th>
<th>PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOPERATIVE</td>
<td>9</td>
<td>37.1189</td>
<td>3.660</td>
<td>1.43</td>
<td>.085</td>
</tr>
<tr>
<td>COMPETITIVE</td>
<td>10</td>
<td>34.5280</td>
<td>4.180</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 16

ONE-TAILED t-TEST OF COOPERATIVE AND COMPETITIVE EXPRESSION ON OUTCOME SATISFACTION AT THE INDIVIDUAL LEVEL

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
<th>t</th>
<th>PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOPERATIVE</td>
<td>43</td>
<td>36.6977</td>
<td>5.348</td>
<td>1.67</td>
<td>.049</td>
</tr>
<tr>
<td>COMPETITIVE</td>
<td>53</td>
<td>34.6226</td>
<td>6.552</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The group-level results approached significance (p<.085), and the individual-level achieved it (p<.049). The mean of the cooperative conflict groups/individuals was higher in outcome satisfaction than the mean of the competitive conflict groups/individuals. These two analyses reveal at least partial support for hypothesis three.

Hypothesis Four: Cooperative conflict groups will have higher satisfaction with the decision-making process than competitive conflict groups.

This hypothesis was tested using a one-tailed t-test. Results at the group level are presented in Table 17 and at the individual level in Table 18.

TABLE 17

ONE-TAILED t-TEST OF COOPERATIVE AND COMPETITIVE EXPRESSION ON PROCESS SATISFACTION AT THE GROUP LEVEL

<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
<th>t</th>
<th>PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOPERATIVE</td>
<td>9</td>
<td>34.2922</td>
<td>3.386</td>
<td>1.85</td>
<td>.041</td>
</tr>
<tr>
<td>COMPETITIVE</td>
<td>10</td>
<td>34.5280</td>
<td>4.180</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 18

ONE-TAILED t-TEST OF COOPERATIVE AND COMPETITIVE EXPRESSION ON PROCESS SATISFACTION AT THE INDIVIDUAL LEVEL

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
<th>t</th>
<th>PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOPERATIVE</td>
<td>43</td>
<td>33.7209</td>
<td>4.987</td>
<td>2.56</td>
<td>.006</td>
</tr>
<tr>
<td>COMPETITIVE</td>
<td>53</td>
<td>30.5849</td>
<td>6.661</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Both sets of results are significant. At the group and individual levels, the cooperative conflict groups shewed significantly higher satisfaction with the process than the competitive conflict groups (p<.041 and p<.006, respectively). These results support hypothesis four.

Hypothesis Five: Avoid conflict groups will have higher satisfaction with the decision-making process than either cooperative or competitive conflict groups.

Hypothesis five was tested using a one-way ANOVA with process satisfaction as the dependent variable and type of conflict expression as the independent variable. Results are presented in Table 19.

TABLE 19

TYPE OF CONFLICT EXPRESSION AND SATISFACTION WITH PROCESS AT THE GROUP LEVEL

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>D.F.</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>F PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETWEEN GROUPS</td>
<td>2</td>
<td>90.4086</td>
<td>45.2043</td>
<td>3.1243</td>
<td>.0608</td>
</tr>
<tr>
<td>WITHIN GROUPS</td>
<td>26</td>
<td>376.1898</td>
<td>14.4688</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>28</td>
<td>466.5984</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 19, Continued

<table>
<thead>
<tr>
<th>EXPERIMENTAL GROUP</th>
<th>N</th>
<th>MEAN</th>
<th>STANDARD DEVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVOID CONFLICT</td>
<td>10</td>
<td>34.2530a</td>
<td>2.3173</td>
</tr>
<tr>
<td>COOPERATIVE CONFLICT</td>
<td>9</td>
<td>34.2922</td>
<td>3.3857</td>
</tr>
<tr>
<td>COMPETITIVE CONFLICT</td>
<td>10</td>
<td>30.5570b</td>
<td>5.1225</td>
</tr>
<tr>
<td>TOTAL</td>
<td>29</td>
<td>32.9907</td>
<td>4.0822</td>
</tr>
</tbody>
</table>

a,b Significantly different with Newman-Keuls.

The avoid conflict groups showed higher satisfaction with the process than the competitive groups but lower than the cooperative groups. These results were not significant with Scheffe but did achieve significance with Newman-Keuls, and this lends partial support for hypothesis five. Process satisfaction was measured at the individual level, and those results are presented in Table 20.

TABLE 20

| TYPE OF CONFLICT EXPRESSION AND SATISFACTION WITH PROCESS AT THE INDIVIDUAL LEVEL |
|----------------------------------|---------------------------------|----------------------|---------|------|--------|
| SOURCE                           | D.F.                           | SS                  | MS      | F    | F PROB |
| BETWEEN GROUPS                   | 2                              | 398.7414            | 199.3709| 6.8700| .0014  |
| WITHIN GROUPS                    | 148                            | 4288.0464           | 29.0206 |      |        |
| TOTAL                            | 150                            | 4693.7881           |         |      |        |

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVOID CONFLICT</td>
<td>55</td>
<td>34.1636a</td>
<td>4.1800</td>
</tr>
<tr>
<td>COOPERATIVE CONFLICT</td>
<td>43</td>
<td>33.7209a</td>
<td>4.9872</td>
</tr>
<tr>
<td>COMPETITIVE CONFLICT</td>
<td>53</td>
<td>30.5849b</td>
<td>6.6605</td>
</tr>
<tr>
<td>TOTAL</td>
<td>151</td>
<td>32.7815</td>
<td>5.5939</td>
</tr>
</tbody>
</table>

a,b Groups with different letters are significantly different.
These results are exactly as anticipated at the individual level. The competitive conflict individuals were significantly less satisfied with the process than either the avoid conflict or the cooperative conflict individuals, and this supports hypothesis four. The avoid conflict individuals had higher process satisfaction than either of the other two types, although the differences were not significant. This, too, provides partial support for hypothesis five.

Hypothesis Six: There will be a positive relationship between outcome quality and integrative resolution and a negative relationship between outcome quality and distributive resolution.

This hypothesis was tested using Pearson Product-Moment correlation and the results are presented in Table 21.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>N</th>
<th>r</th>
<th>PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>NON-RESOLUTION</td>
<td>29</td>
<td>.1064</td>
<td>.291</td>
</tr>
<tr>
<td>INTEGRATIVE RESOLUTION</td>
<td>29</td>
<td>.0355</td>
<td>.427</td>
</tr>
<tr>
<td>DISTRIBUTIVE RESOLUTION</td>
<td>29</td>
<td>-.1624</td>
<td>.200</td>
</tr>
</tbody>
</table>

The coefficients are in the predicted direction but are not significant and account for so little of the variation that they fail to support the hypothesis. Quality of outcome does not appear to be strongly related to resolution type.

Hypothesis Seven: There will be a positive relationship between satisfaction with outcome and integrative resolution and a negative relationship between satisfaction with outcome and distributive resolution.
Hypothesis seven was tested using Pearson Product-Moment correlations and the results are presented in Table 22.

**TABLE 22**

**CORRELATIONS BETWEEN TYPES OF RESOLUTION AND SATISFACTION WITH OUTCOME**

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>N</th>
<th>r</th>
<th>PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>NON-RESOLUTION</td>
<td>29</td>
<td>-.1104</td>
<td>.278</td>
</tr>
<tr>
<td>INTEGRATIVE RESOLUTION</td>
<td>29</td>
<td>.2979</td>
<td>.058</td>
</tr>
<tr>
<td>DISTRIBUTIVE RESOLUTION</td>
<td>29</td>
<td>-.1504</td>
<td>.218</td>
</tr>
</tbody>
</table>

The positive relationship between integrative resolution and outcome satisfaction approaches significance ($r=.30$, $p<.058$) and the relationship between outcome satisfaction and resolution is in the predicted direction. There is partial support for hypothesis seven.

Hypothesis Eight: There will be a positive relationship between satisfaction with the decision process and integrative resolution and a negative relationship between satisfaction with process and distributive resolution.

Hypothesis eight was tested using Pearson Product-Moment correlations and the results are presented in Table 23.
TABLE 23
CORRELATIONS BETWEEN TYPES OF RESOLUTION AND SATISFACTION WITH PROCESS

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>N</th>
<th>r</th>
<th>PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>NON-RESOLUTION</td>
<td>29</td>
<td>-.1284</td>
<td>.253</td>
</tr>
<tr>
<td>INTEGRATIVE RESOLUTION</td>
<td>29</td>
<td>.2336</td>
<td>.111</td>
</tr>
<tr>
<td>DISTRIBUTIVE RESOLUTION</td>
<td>29</td>
<td>-.0676</td>
<td>.364</td>
</tr>
</tbody>
</table>

The relationships are in the predicted direction but account for little of the variance. Thus, the data fail to support hypothesis eight.

Summary and Discussion

Several of the hypotheses received support or partial support, and others no support. This summary groups the hypotheses on the basis of their content.

The hypotheses dealing with the relationship of the critical variables to quality (Hypotheses One, Two and Six) failed to receive support. Quality did not appear to be related in the predicted ways to the amount of conflict, the style of conflict expression, or the method of resolution.

The hypotheses dealing with process and outcome satisfaction and the relationship to style of expression (Hypotheses Three, Four and Five) generally received at least partial support. Cooperative conflict groups and individuals were significantly more satisfied with the process than competitive groups. Cooperative conflict groups and
individuals were more satisfied with the outcome, individuals significantly so, than cooperative groups. The avoid conflict groups and individuals were significantly more satisfied with the process than competitive groups and individuals, although not more satisfied than cooperative groups and individuals. Both measures of satisfaction tended to operate as the theory predicted.

The hypotheses dealing with resolution style (Hypotheses Six through Eight) received minimal support. No relationship was detected between resolution type and either quality or process satisfaction, but the relationship between outcome satisfaction and integrative resolution approached significance.

These findings and their implications are discussed below.

Discussion Regarding Quality of Outcome

The results of the direct tests of the hypotheses were disappointing to say the least. Quality of outcome, one of the principal dependent variables of this investigation, was not clearly related to anything. No relationship was detected with the perceived amount of conflict or percent of conflict. A curvilinear relationship did exist between the number of episodes and quality, but with the highest and lowest amounts of conflict having the highest quality. This curve was the inverse of what was predicted. Several explanations could account for these findings, including the possibility that the measures were not sensitive enough to detect a relationship with the relatively few numbers of groups in the sample. One likely explanation may be that the amounts of conflict achieved in this study never surpassed that
hypothetical point beyond which outcome quality suffers. It was clear from listening to the discussions on the tapes that the groups stayed pretty closely to the task at hand. At a descriptive level, there did not seem to be so much conflict that task quality would be hurt.

Another likely explanation has to do with the lack of direct relationship between the conflict actually measured and the outcome. All disagreements, no matter what the content, were counted as conflict. This included conflicts characterized as contradictions of the "Yes it is/No it isn't" variety. Many of these related to factual matters associated with university life but did not have anything to do with the task. Thus, the amounts of conflict at the high end of the scale included many of these possibly irrelevant episodes, and there is no reason to believe that task-unrelated conflicts would have anything to do with outcome quality.

The high outcome scores at the low conflict end of the continuum are harder to explain, but perhaps relate to the nature of the task. The subjects were told that they could submit as many recommendations as they wished as part of their proposals, but had to agree on the top ranked one. It was apparent from listening to the tapes that most of the groups, particularly the avoid conflict groups, attempted to include somehow all suggested recommendations from all members. The judges evaluated the proposals as a whole, not just the top-ranked recommendation. Thus, although some groups were relatively indiscriminate in allowing all recommendations to be included, the proposals which incorporated those recommendations were highly ranked so
long as the individual recommendations were reasonable. The groups which avoided conflict by including all suggestions in the final proposal may, therefore, have had an advantage in the judging. Thus, there was not any direct relationship between conflict as measured and quality as measured.

Quality also did not appear to be related to the type of conflict expression experienced in the group. The cooperative conflict groups, in fact, achieved lower quality of outcome scores. Given the mixed success of the experimental manipulations, several plausible reasons exist for this finding. First, the cooperative conflict groups had the most difficult task — to argue for their own ideas while simultaneously paying attention to the socio-emotional climate. Attention to quality of task achievement may have suffered as a result. Attending to the discussion instructions took energy away from honest evaluation of the proposals being discussed.

Another likely explanation is that the partial success of the manipulations failed to create sufficiently different discussion conditions to elicit outcome differences. The tape-recorded discussions rarely reached the hoped-for level of intensity in the competitive groups that was hypothesized to compromise outcome quality. Instead, the conflicts remained reasonable and task-related.

Finally, quality of outcome was not significantly related to the type of conflict resolution, although in this finding, at least, the results were in the predicted direction with distributive resolution being associated with lower quality. The lack of significance may be related to the relatively few numbers (29 groups) or the the relatively
Discussion Regarding Satisfaction

In general, outcome satisfaction behaved as it was expected to. The relationship between conflict expression and outcome satisfaction was as predicted. At the group level, cooperative groups were more satisfied than competitive groups, and cooperative individuals were significantly more satisfied than competitive individuals. The failure of the group-level analysis appears to have been a function of the relatively few number of groups.

Integrative conflict resolution was positively related to outcome satisfaction, as expected, although not significantly. This makes sense, particularly since an attempt was made to operationalize resolution in terms of the observable outcome. In addition, the negative relationship between lack of resolution and satisfaction makes theoretical sense in that failure to resolve conflicts and thereby achieve closure should cause discomfort.

The predicted relationship between expression and satisfaction with process also held and was significant at both group and individual levels of analysis. The cooperative groups were more satisfied with the process than the competitive groups. The only anomalous finding concerned the avoid conflict groups/individuals, which were slightly lower than the cooperative groups/individuals in process satisfaction. However, the means of the avoid and cooperative groups were so close that it is more accurate to say these groups were extremely similar and
both, as expected, were more satisfied than competitive groups. At the individual level, competitive groups were significantly less satisfied with the process than either of the other two groups, and the directions of the means was as expected.

Integrative resolution was positively related to process satisfaction and distributive resolution negatively related. These findings, although not significant, are consistent with theoretical predictions. Also, the finding that non-resolution is negatively related to process satisfaction is consistent, although all these correlations are unimpressively low.

It appears that a relatively clear relationship exists between conflict and the two types of satisfaction measured in this study. The problems identified earlier regarding the lack of detected relationship between quality and the amount of conflict were not encountered here, most likely because the way conflict was operationalized was directly related to the climate of the group. In so far as satisfaction is concerned, all disagreements, contradictions and arguments probably do have a direct relationship, even though they may not be task-relevant.

Additional Analyses

The manipulation of the experimental groups appeared to have mixed success, and so additional analyses were conducted. The variable of chief interest in this study was conflict expression, and it is this variable whose successful manipulation was suspect. Therefore, the additional analyses disregarded the experimental conditions and treated the conflict expression measure as a ratio-level independent variable. This was analyzed in a variety of ways which will now be presented.
First, a configuration of the groups according to experimental condition are presented in Table 24. It is easy to see from this that there is little difference in the configuration regarding the type of conflict expression. The only clear predictable finding relates to the distributive expression percentage, which behaved exactly as expected.

**TABLE 24**

SUMMARY OF CONFLICT EXPRESSION PERCENTAGES FOR EXPERIMENTAL CONDITIONS

<table>
<thead>
<tr>
<th>GROUP TYPE</th>
<th>INDIRECT EXPRESSION (%)</th>
<th>INTEGRATIVE EXPRESSION (%)</th>
<th>DISTRIBUTIVE EXPRESSION (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVOID</td>
<td>14.37</td>
<td>64.06</td>
<td>21.57</td>
</tr>
<tr>
<td>COOPERATIVE</td>
<td>15.29</td>
<td>61.01</td>
<td>23.70</td>
</tr>
<tr>
<td>COMPETITIVE</td>
<td>15.37</td>
<td>61.60</td>
<td>26.17</td>
</tr>
</tbody>
</table>

The conflict expression data examined so far were distributed into the three broad categories of conflict expression (indirect/avoidance, integrative and distributive) but there were data available on the percentages of speaking turns which fell into each of the eleven subcategories as well as the three major categories. The relationship between these data and the principal dependent variables (quality, satisfaction with process and satisfaction with outcome), disregarding the experimental conditions, was tested using Pearson Product-Moment correlations and the results are presented in Tables 25 through 27.
TABLE 25
CORRELATIONS BETWEEN INDIRECT CONFLICT EXPRESSION AND QUALITY, PROCESS SATISFACTION AND OUTCOME SATISFACTION

<table>
<thead>
<tr>
<th></th>
<th>QUALITY</th>
<th>PROCESS SATISFACTION</th>
<th>OUTCOME SATISFACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDIRECT DISAGREEMENT (%)</td>
<td>-.0535</td>
<td>-.1124</td>
<td>-.1303</td>
</tr>
<tr>
<td>TOPIC SHIFTING (%)</td>
<td>-.0277</td>
<td>-.2113</td>
<td>-.1052</td>
</tr>
<tr>
<td>OVERT SMOOTHING ATTEMPTS (%)</td>
<td>.0955</td>
<td>-.0936</td>
<td>.0749</td>
</tr>
<tr>
<td>INDIRECT/AVOIDANCE TOTAL (%)</td>
<td>-.0331</td>
<td>-.2095</td>
<td>-.1303</td>
</tr>
</tbody>
</table>

N=29

None of the relationships of the key variables and indirect conflict expression approached significance. Indirect expression of conflict as it was defined and coded in this study appears to have no bearing on outcome quality, process or outcome satisfaction.
TABLE 26
CORRELATIONS BETWEEN INTEGRATIVE CONFLICT EXPRESSION AND QUALITY, PROCESS SATISFACTION AND OUTCOME SATISFACTION

<table>
<thead>
<tr>
<th></th>
<th>QUALITY</th>
<th>PROCESS SATISFACTION</th>
<th>OUTCOME SATISFACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIRECT, PROVISIONAL (%)</td>
<td>-.0581</td>
<td>.1202</td>
<td>.1438</td>
</tr>
<tr>
<td>PROVIDING RATIONALE (%)</td>
<td>.0351</td>
<td>.1672</td>
<td>.1287</td>
</tr>
<tr>
<td>SEEKING RATIONALE (%)</td>
<td>-.0172</td>
<td>-.1193</td>
<td>-.2680</td>
</tr>
<tr>
<td>PROBLEM-SOLVING (%)</td>
<td>-.0929</td>
<td>.3159*</td>
<td>.2458</td>
</tr>
<tr>
<td>DIRECT SUPPORT (%)</td>
<td>-.1419</td>
<td>.2657</td>
<td>.2569</td>
</tr>
<tr>
<td>INTEGRATIVE TOTAL (%)</td>
<td>-.2196</td>
<td>.2846</td>
<td>.2070</td>
</tr>
</tbody>
</table>

N=29
*p<.05

The only significant finding between the critical variables and integrative conflict expression involved problem-solving attempts, which were positively related to satisfaction with the process. Individuals should perceive such attempts in a positive light regarding task accomplishment, so this finding is theoretically consistent. However, four of the five possible relationships with types of integrative expression and quality of outcome were negative, and this runs counter to theoretical expectations. As before, the satisfaction measure behaved according to theoretical expectations but the quality measure did not.
TABLE 27
CORRELATIONS BETWEEN DISTRIBUTIVE CONFLICT EXPRESSION AND QUALITY, PROCESS SATISFACTION AND OUTCOME SATISFACTION

<table>
<thead>
<tr>
<th></th>
<th>QUALITY</th>
<th>PROCESS SATISFACTION</th>
<th>OUTCOME SATISFACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIRECT, CERTAIN (%)</td>
<td>.2379</td>
<td>-.0578</td>
<td>.0576</td>
</tr>
<tr>
<td>NON-COERCIVE COMPLIANCE</td>
<td>-.2080</td>
<td>-.1681</td>
<td>-.2200</td>
</tr>
<tr>
<td>GAINING (%)</td>
<td>-.1976</td>
<td>-.2054</td>
<td>-.1253</td>
</tr>
<tr>
<td>COERCIVE COMPLIANCE</td>
<td>.1638</td>
<td>-.2141</td>
<td>-.1725</td>
</tr>
<tr>
<td>TOTAL (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

None of these findings was significant, although the relationship between the various forms of distributive expression and both process and outcome satisfaction are theoretically consistent.

One other type of analysis was conducted using the three broad categories of conflict expression. The groups were divided into quartiles. T-tests using the highest and lowest quartile groups with indirect, integrative and distributive conflict expression as the independent variables and quality, process and outcome satisfaction as the dependent variables were computed. Results are presented in Tables 28 through 30.
TABLE 28

ONE-TAILED t-TESTS OF LOW VS. HIGH INDIRECT EXPRESSION GROUPS ON QUALITY, OUTCOME SATISFACTION AND PROCESS SATISFACTION

<table>
<thead>
<tr>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
<th>t</th>
<th>PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUALITY:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOW QUARTILE</td>
<td>7</td>
<td>51.0000</td>
<td>8.944</td>
<td>1.28</td>
</tr>
<tr>
<td>HIGH QUARTILE</td>
<td>8</td>
<td>43.6250</td>
<td>12.694</td>
<td></td>
</tr>
</tbody>
</table>

| OUTCOME SATISFACTION:              |      |     |     |      |
| LOW QUARTILE                       | 7    | 37.6686 | 4.181 | .45   | .330 |
| HIGH QUARTILE                      | 8    | 36.7062 | 4.110 |       |      |

| PROCESS SATISFACTION:              |      |     |     |      |
| LOW QUARTILE                       | 7    | 35.4829 | 2.807 | 2.07  | .029 |
| HIGH QUARTILE                      | 8    | 32.4625 | 2.824 |       |      |

These results were not significant, but quality results were in the predicted theoretical directions. The groups which had the highest percentages of indirect conflict expression had lower outcome quality scores. If quality is a function in part of critical thinking and critical evaluation, this implies that a group should be looking directly rather than indirectly at both the issues and the disagreements.

Satisfaction did not perform as expected. It had been assumed that conflict in a group was dissatisfying, and thus that indirect conflict, which is a disguised form of disagreement, would be more satisfying than any form of direct conflict. The results indicate that the groups highest in percentage of indirect expression are significantly lower in process satisfaction. This may be a function of the overall amount of conflict rather than solely indirect expression. Expression of
conflict was operationalized in terms of its percentage of conflict. The groups highest in indirect conflict expression may also have been high in total amount of conflict, which has a dissatisfying effect.

### TABLE 29

**ONE-TAILED t-TESTS OF LOW VS. HIGH INTEGRATIVE EXPRESSION GROUPS**

**ON QUALITY, OUTCOME SATISFACTION AND PROCESS SATISFACTION**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
<th>t</th>
<th>PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUALITY:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOW QUARTILE</td>
<td>7</td>
<td>52.4286</td>
<td>15.490</td>
<td>1.86</td>
<td>.043</td>
</tr>
<tr>
<td>HIGH QUARTILE</td>
<td>8</td>
<td>39.2500</td>
<td>11.925</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OUTCOME SATISFACTION:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOW QUARTILE</td>
<td>7</td>
<td>35.4086</td>
<td>3.502</td>
<td>-1.43</td>
<td>.088</td>
</tr>
<tr>
<td>HIGH QUARTILE</td>
<td>8</td>
<td>37.4262</td>
<td>3.311</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROCESS SATISFACTION:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOW QUARTILE</td>
<td>7</td>
<td>30.0457</td>
<td>5.561</td>
<td>-1.95</td>
<td>.036</td>
</tr>
<tr>
<td>HIGH QUARTILE</td>
<td>8</td>
<td>34.2537</td>
<td>2.547</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The finding pertaining to quality is significant but is not in the predicted direction. Integrative expression was believed to produce higher outcome quality in that conflicts were confronted directly but people's feelings also were considered. However, the lowest integrative expression groups had the highest outcome quality. While integrative expression may foster the kind of atmosphere that allows free expression of ideas, it apparently does not foster the kind of critical examination of concepts that may increase quality.
The findings pertaining to outcome and process satisfaction are each in the predicted direction, and the process satisfaction finding is significant. Integrative expression encourages the concerns of all to be expressed, and this should be satisfying to the individuals involved.

### TABLE 30

**ONE-TAILED t-TESTS OF LOW VS. HIGH DISTRIBUTIVE EXPRESSION GROUPS ON QUALITY, OUTCOME SATISFACTION AND PROCESS SATISFACTION**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
<th>t</th>
<th>PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Quartile</td>
<td>7</td>
<td>46.143</td>
<td>6.842</td>
<td>-0.84</td>
<td>.207</td>
</tr>
<tr>
<td>High Quartile</td>
<td>8</td>
<td>51.250</td>
<td>14.617</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome Satisfaction:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Quartile</td>
<td>7</td>
<td>37.720</td>
<td>4.154</td>
<td>0.65</td>
<td>.265</td>
</tr>
<tr>
<td>High Quartile</td>
<td>8</td>
<td>36.315</td>
<td>4.244</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process Satisfaction:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Quartile</td>
<td>7</td>
<td>33.577</td>
<td>2.678</td>
<td>0.70</td>
<td>.250</td>
</tr>
<tr>
<td>High Quartile</td>
<td>8</td>
<td>31.831</td>
<td>6.433</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The findings pertaining to quality were not significant. Interestingly, groups highest in distributive expression of conflict had higher outcome quality scores than low distributive expression groups. Although it was presumed that distributive expression would hurt outcome quality by discouraging free expression of ideas, a different dynamic may be operating. In light of the previous findings, it may be that distributive expression helps improve outcome quality by forcing a more thorough examination of options than integrative expression does. It may cause defensiveness and encourage counterargument, which serves to dampen satisfaction, but apparently it is not detrimental to outcome
dampen satisfaction, but apparently it is not detrimental to outcome quality.

The relationship between outcome satisfaction and distributive expression is in the expected direction but not significant. Those groups lowest in distributive expression were higher in outcome satisfaction than the highest distributive expression groups.

The relationship between process satisfaction also is not significant but is in the expected direction. The groups lowest in distributive expression had higher process satisfaction scores than the groups highest in distributive expression. This, too, makes sense in that distributive expression should cause discomfort and promote dissatisfaction.

As in the analyses presented in conjunction with the hypotheses, quality does not appear to be consistently related to any of the variables discussed. Process and outcome satisfaction, on the other hand, do behave in theoretically consistent ways. Interestingly, the most predictable conflict expression measures are those associated with distributive expression, which was related both to quality and satisfaction in predicted ways.

**Overall Summary**

The results of this study are not conclusive. Quality of outcome did not appear to be tied consistently to any of the conditions described -- amount of conflict, type of conflict expression, or type of conflict resolution. It is impossible to know with confidence whether the problem is with the study itself or with the theory. The expectation of curvilinearity, for example, was predicated on the belief
that there exists an optimum amount of conflict beyond which quality of outcome suffers. In this study, higher conflict was associated with higher quality. It could be that the hypothesized optimum point was never reached.

In addition, the overall reasonableness of the arguments was apparent from listening to the audiotapes. The groups told to argue did have more distributively expressed conflict than the groups told to harmonize, but that conflict was rarely intense. This supports the contention that the problem is not predominantly with the theory but with the particular range of findings of this study.

Satisfaction with outcome and satisfaction with process, on the other hand, generally behaved according to expectations. Competitive conflict was associated with lower satisfaction with both process and outcome than either cooperative conflict or little conflict. The most congruent relationship with conflict expression concerned the distributive expression groups. The distinctions were not so clear between the avoid and cooperative groups, but distributive expression did perform as predicted.
CHAPTER 5

Summary, Limitations and Recommendations

This chapter begins with a brief summary of the results, discusses limitations of the study, elaborates on concerns expressed earlier, and concludes with recommendations for future research in the area of conflict in small groups.

Summary

This study investigated the relationships of conflict amount, conflict expression and conflict resolution to the quality of outcome, satisfaction with outcome, and satisfaction with process in small, decision-making groups. Quality of outcome was not clearly associated with any of the three independent variables. Process and outcome satisfaction, on the other hand, were associated with the independent variables in ways directionally consistent with theoretical predictions, although at the group level of analysis these were not always significant. Competitive conflict groups were less satisfied on both measures. Resolution was related to process and outcome satisfaction in directionally consistent ways, with integrative resolution positively associated with satisfaction and distributive resolution negatively related, but only the relationship between integrative resolution and outcome satisfaction approached statistical significance.
Limitations and Concerns

There are several limitations regarding the interpretation as well as concerns surrounding some general issues. These limitations and concerns relate to the subjects, the task, the experimental conditions, the measurement, and the reliability and validity of the study.

Subjects: First, although the groups were "full-fledged" as defined by Bales and Strodbeck (1951), the subjects had not been randomly assigned to groups. Thus, there is no firm assurance that the group composition was comparable across conditions.

Nearly two thirds of the subjects were female. Gender differences were not of particular interest in this study, but gender composition of the groups may have influenced discussion behavior. Although recent studies have minimized the effects of gender (Womack, 1985), other studies (Baird, 1976; Aries, 1982) have identified differences. Gender may have been a mediating factor which was not tested.

Finally, the fact that a student population was used may limit the generalizability of the results, although in similar situations, student groups have performed substantially the same, for example, as physician groups (Poole, 1981). Nevertheless, it is a potential limitation.

Task: The task stimulated both interest and conflict and was one with which the students were familiar. However, if the situation is compared with a "real-life" organizational situation, the outcome of the discussion did not directly affect the subjects, who would not have to live with the consequences of their decision. The stakes were not as high as they would be in a genuine organizational setting.

Experimental Conditions: Questions exist regarding the effect of
the experimental manipulation. The manipulation was intended to create three clearly identifiable groups in terms of the way disagreements were expressed, but the profile of the groups showed that they were more similar than different. For example, the kind of intensity associated with the concept of distributive expression explained in the theoretical rationale was not achieved successfully. This causes the results to be called into question and is the most likely explanation for the general lack of significance of the group level analyses.

**Operationalization and Measurement:** An examination of the results suggests that several measures were problematic. For example, all disagreements were counted as conflict. In retrospect, it seems that this operationalization was highly appropriate in predicting a relationship with satisfaction but not so with quality. For conflict to have a direct effect on quality, it makes sense that the content of the conflict, not just the amount or the expression, be considered. In addition, the discussions did not reach the hoped-for levels of intensity that were believed to affect outcome quality negatively.

In addition, the way the proposals were judged may have hidden the effects of conflict in that the proposals were evaluated as a whole, considering all suggestions which were submitted, and those groups that avoided conflict tended to allow all suggestions to be included. This probably accounts for the high quality scores achieved by the low conflict groups. A more direct effect of conflict may have been observed if only the top-ranked suggestion had been considered.

**Reliability and Validity:** The internal reliability of the various measures employed ranged from moderate to good. The amount of conflict
and satisfaction measures were good, but the perceived management style instrument varied considerably depending on the particular index, from good to moderate. The latter measure, perceived management style, was not a critical component of the study, however.

Interrater reliability ranged, too. For example, coders agreed on the type of resolution and the broad estimates of conflict expression, but were not so reliable when it came to the subcategories. The few analyses involving the subcategories are, therefore, questionable.

The rationale predicting the operation of the three types of conflict expression should be reevaluated. Distributive expression operated as expected, but there were few differences between the indirect and integrative expression. In several cases the means of the integrative and indirect groups on a variety of outcome measures were indistinguishable. The distinction between indirect and integrative expression may be artificial. The original rationale stated that integrative expression would foster satisfaction in that the ideas of all would be encouraged and would foster quality in that differences of opinion would be confronted openly. In retrospect, both indirect and integrative expression have the effect of supporting expression, and on the satisfaction measures they did operate differently from distributive expression. On the quality measure, although the results were not significant, distributive expression was associated with higher quality, and again the integrative and indirect measures operated as one. The key to the operation of any of the measures is the overall effect on the group. Indirect and integrative expression encourage discussion from all members. Distributive expression encourages a critical examination
of issues, even though this examination may appear confrontative. The indirect vs. integrative distinction does not hold, but the indirect/integrative vs. distributive does operate consistently.

The various conflict measures, observed and perceived, were highly consistent, which is encouraging with respect to the validity of the study. The correlations between the perceived management style measure and the observed conflict expression measures were good, but could have been stronger. Additional study is needed to ensure that the salient behaviors perceived by the participants are the same in meaning as the ones evaluated by the coders.

**Recommendations**

This study highlighted some of the difficulties encountered in conducting small group research. Real, naturally occurring groups are the most desirable for purposes of generalization, but they are the most difficult to manipulate. For example, tighter control of the discussion process would have been more desirable for pinpointing differential effects of a variety of discussion types. Ideally, a confederate could have been employed to ensure greater control, but then the group no longer can be called a genuine group. A variety of studies are needed, including naturalistic and experimental studies, before confidence can be placed in findings which do demonstrate differences.

First, it makes sense to continue looking at both perceptual and observed measures of the same concepts and behaviors. In this study, although there was significant relationship between perceived and observed measures, the variance accounted for was slight and in some instances the two types of measures operated differently.
This study advocated separating the concepts of conflict expression and conflict resolution, and the variables reacted differently in some instances. Continuing to consider these as different is valuable, but perhaps even further distinctions need to be made. For example, an exhaustive examination of the conflict episodes revealed that a conflict episode has three identifiable parts. First, there is the initiating statement of disagreement that starts the episode. Then, the parties involved engage in communicative behavior which is designed to "do something" with the episode -- resolve it, win an argument, clarify the issues, or whatever. This is closely akin to management of the conflict, but also includes behaviors that perpetuate the episode. Finally, there is a termination, which indicates how that particular episode was resolved. All three things should be examined in relation to outcome variables like satisfaction and quality.

This study dealt with the distribution of verbal remarks, and sequencing was not considered. A next logical step would be to examine the sequencing of statements within the conflict episode.

The variable which behaved most consistently of the expression measures was distributive expression. The groups frequently were so close in terms of the indirect and integrative measures that they may in fact be indistinguishable. Perhaps a different conceptualization is needed. Indirect expression may make no difference to outcome, and distributive expression is the key.

This study attempted to make the distinction between the amount of conflict and the way conflict is expressed. An additional distinction may be in order, and that is the consideration of the content of the
conflict. Task-irrelevant conflict appears to have affected satisfaction in this study but was unrelated to quality. Expression, amount, and content may each affect quality, separately or interactively. This needs to be explored.

This study represents another attempt to clarify the elusive relationship between conflict and quality of outcome. Satisfaction measures behave in predictable ways, but quality continues to be capricious. Nevertheless, practitioners consistently advocate the use of integrative activities in the handling of conflict episodes as superior for achieving both satisfaction and quality (Pareek, 1983; Lippett, 1982; Labovitz, 1980). The results of this study suggest caution in following such advice. If agreement and support are the key criteria determining success of a particular decision, integrative expression may safely be advocated. However, if objectively determined or externally determined quality is the key concern, integrative expression or resolution may have no bearing. As Wall et al. (1984) noted, there is no good reason to believe that happy groups demonstrate superior performance than dissatisfied ones. Until empirical results clearly demonstrate a relationship between quality and integrative behaviors, advice to proceed integratively when quality is the most important consideration is premature.
APPENDIX A-1

INTRODUCTION

President Jennings has adopted as a major theme of his administration the concept of "excellence," and several current educational projects are underway that stress the excellence at OSU. As part of this project, Dr. Jennings is interested in the suggestions students have for increasing the quality of undergraduate education. This is particularly true since the Lantern has published several recent unflattering articles critical of the quality of undergraduate education at OSU. Allegations like those made in the Lantern hurt the image of academic excellence that Dr. Jennings and others hope OSU will maintain.

DESCRIPTION OF THE PROJECT

Your group, along with others from Communication 110, is being asked to investigate the problem and come up with recommendations that will ultimately improve the quality of undergraduate education at OSU. On the day you are scheduled to participate in this project, we ask that you come prepared with 3 recommendations of your own. Then your group will be asked to discuss the problem and come up with a group solution. Your discussion will be tape recorded, and a summary of all the proposals will eventually be given to President Jennings.

The proposals submitted by all the groups will be judged by a panel of experts on the basis of their ability to meet three criteria. First, the proposals must be workable. In other words, they must have a good chance of actually improving the quality of undergraduate education. Secondly, they must be economically feasible and reasonable. They will not be able to be implemented if they are too costly to the University, which is already experiencing fiscal problems. Finally, they must not create social or political problems for the University. You may, as a group, submit as many recommendations as you wish, but you must come to consensus -- unanimous agreement -- on which is your top-ranked recommendation.

You will be given until your research day to think about the problem and possible solutions. However, PLEASE DO NOT discuss possible solutions with other group members ahead of time. On your research day, you are to meet at your regular class time in Room 330 Derby Hall. You'll use your regular class hour to discuss the problems, develop your proposal, and submit it in writing so the judges can evaluate it.

AWARDS/BONUS POINTS

Two sets of awards will be given at the conclusion of the project. First, the group whose proposal is judged best will be awarded $100.
Second, each of the groups that participate will have the opportunity to compete for an additional $100 AND 10 bonus points toward their Communication 110 grade. On the day of your discussion, you will be given additional instructions regarding the way you are to conduct your discussion. The group which does the best job, as judged by a panel of experts, of following those additional instructions will receive $100, and each member of that group will receive 10 bonus points.

CONDITIONS

Several conditions must be met before a group will receive any award. First, the entire group must participate in the project. This is a study in group decision-making, and partial groups will not work. Second, the group members must complete all aspects of the project (finish the discussion, submit the proposal, and complete the post-project questionnaires). You should be able to finish the entire project in less than one hour.

PLEASE DO NOT DISCUSS YOUR IDEAS OR THE PROJECT ITSELF WITH OTHER MEMBERS OF YOUR GROUP PRIOR TO YOUR SCHEDULED DISCUSSION SESSION.
Your task today, as you remember, is to come up with a group proposal to improve the quality of undergraduate education at Ohio State. You may submit as many recommendations in your proposal as you wish, but you must come to consensus (that is, unanimous agreement) on which is your top-ranked recommendation. Your recommendations, along with a brief rationale for why you believe each recommendation should be included, are to be submitted in writing on the sheet provided.

You will have 30 minutes to complete your discussion. When the time is up, an experimenter will remind you and ask you to finish writing down your recommendations. You'll have five additional minutes to do this. At that point, the experimenter will collect your proposal whether or not you are finished.

DISCUSSION INSTRUCTIONS

You may recall that you were to receive additional instructions regarding how to conduct your discussion. A discussion format that has been found to work well in tasks like this is one of harmony. You are to conduct your discussion in a harmonious way by avoiding disagreements and smoothing over opinion differences in order to agree with each other. That is the pattern you are to use throughout your discussion today, and the group as a whole is responsible for seeing that these instructions are followed.

When the experiment is over, two awards will be given. $100 will go to the group whose proposal is judged the best overall. In addition, the group which does the best job of following the discussion instructions it has been given will also receive $100 and each member of that group will receive 10 bonus points toward his/her Communication 110 grade.

REMEMBER -- YOUR INSTRUCTIONS ARE TO CONDUCT YOUR DISCUSSION IN A HARMONIOUS WAY AND TO AVOID OR SMOOTH OVER ANY DISAGREEMENTS.
Your task today, as you remember, is to come up with a group proposal to improve the quality of undergraduate education at Ohio State. You may submit as many recommendations in your proposal as you wish, but you must come to consensus (that is, unanimous agreement) on which is your top-ranked recommendation. Your recommendations, along with a brief rationale for why you believe each recommendation should be included, are to be submitted in writing on the sheet provided.

You will have 30 minutes to complete your discussion. When the time is up, an experimenter will remind you and ask you to finish writing down your recommendations. You'll have five additional minutes to do this. At that point, the experimenter will collect your proposal whether or not you are finished.

DISCUSSION INSTRUCTIONS

You may recall that you were to receive additional instructions regarding how to conduct your discussion. A discussion format that has been found to work well in tasks like this is one that involves open examination of issues. You are to conduct your discussion in a frank and open way, examining your differences candidly, and not shying away from lively debate. However, you must also remember that interpersonal relationships are important, too, so keep in mind, during your discussion, the ultimate good of the entire group and the feelings of the individual members. This is the pattern you should follow in your discussion today, and the group as a whole is responsible for seeing that these instructions are followed.

When the experiment is over, two awards will be given. $100 will go to the group whose proposal is judged the best overall. In addition, the group which does the best job of following the discussion instructions it has been given will also receive $100 AND each member of that group will receive 10 bonus points toward his/her Communication 110 grade.

REMEMBER -- YOUR INSTRUCTIONS ARE TO CONDUCT YOUR DISCUSSION BY OPENLY EXAMINING AND CONFRONTING DISAGREEMENTS WHILE ALSO KEEPING IN MIND THE FEELINGS OF THE INDIVIDUAL MEMBERS AND THE GOOD OF THE GROUP AS A WHOLE.
APPENDIX A-4

REVIEW OF THE TASK

Your task today, as you remember, is to come up with a group proposal to improve the quality of undergraduate education at Ohio State. You may submit as many recommendations in your proposal as you wish, but you must come to consensus (that is, unanimous agreement) on which is your top-ranked recommendation. Your recommendations, ALONG WITH A BRIEF RATIONALE FOR WHY YOU BELIEVE EACH RECOMMENDATION SHOULD BE INCLUDED, are to be submitted in writing on the sheet provided.

You will have 30 minutes to complete your discussion. When the time is up, an experimenter will remind you and ask you to finish writing down your recommendations. You'll have five additional minutes to do this. At that point, the experimenter will collect your proposal whether or not you are finished.

DISCUSSION INSTRUCTIONS

You may recall that you were to receive additional instructions regarding how to conduct your discussion. A discussion format that has been found to work well in tasks like this is one that involves open examination of issues. You are to conduct your discussion in a frank and open way, examining your differences candidly, and not shying away from lively debate. Your objective is to try to have your own ideas adopted in the final proposal, so be sure to argue firmly for your own point of view. This is the pattern you should follow in your discussion today, and the group as a whole is responsible for seeing that these instructions are followed.

When the experiment is over, two awards will be given. $100 will go to the group whose proposal is judged the best overall. In addition, the group which does the best job of following the discussion instructions it has been given will also receive $100 AND each member of that group will receive 10 bonus points toward his/her Communication 110 grade.

REMEMBER -- YOUR INSTRUCTIONS ARE TO CONDUCT YOUR DISCUSSION BY OPENLY EXAMINING AND CONFRONTING DISAGREEMENTS AND ARGUING FIRMLY IN FAVOR OF YOUR OWN IDEAS.
APPENDIX B

Instructions

Below are some statements that describe the way other people have sometimes felt about their participation in group discussions. Think about the discussion you have just completed, then respond to each statement in terms of the extent to which you STRONGLY AGREE, AGREE, NEITHER AGREE NOR DISAGREE (ARE NEUTRAL), DISAGREE, or STRONGLY DISAGREE. Circle the appropriate response to the right of the statement.

1. I felt my ideas were stifled by the group. ____________________
2. Overall, I would describe my interactions with the other group members as very satisfying. ____________________
3. I came away from the discussion feeling resentful toward the group. ____________________
4. While working on this exercise, I would describe my frustration due to the behavior of the other group members as very high. ____________________
5. I would choose to work with this same group in a real life situation. ____________________
6. Overall, I am very satisfied with the group's performance while working on the exercise. ____________________
7. I felt very comfortable during the group discussion. ____________________
8. The other members did not pay attention to my ideas during the group discussion. ____________________
9. I am satisfied with the group's final proposal. ____________________
10. I could have come up with a better proposal if I had worked alone.  

11. I came away from the group meeting feeling bad about the final proposals.  

12. I don't like the group's final choice of the top-ranked recommendation.  

13. I believe our proposal is the best possible proposal.  

14. I am very frustrated with the quality of the final proposal.  

15. The group discussed an alternative proposal I liked better.  

16. I accept completely the choice of the top-ranked recommendation of our group.  

17. The proposal we came up with was better than I could have done on my own.  

18. Our group experienced much open conflict.  

19. Our group interaction could best be described as friendly.  

20. There were a lot of arguments during our group discussion.  

21. The group members did not get along very well with each other.  

22. I would describe the amount of open conflict experienced by our group as very high.  

23. The group members tended to agree on most issues.  

24. My group experienced very little open conflict.  

25. Our group interactions could best be described as hostile.  

26. Our group members got along very well with each other.
APPENDIX C
CODING MANUAL: EXPRESSION OF CONFLICT

Rationale
The three basic dimensions which provide the framework for this coding scheme have been utilized in previous research (Sillars, 1980, 1981; Sillars et al., 1982; Love, 1984; Wall et al., 1984). The dimensions are indirect/avoidance, integrative, and distributive. Indirect or avoidance acts minimize overt acknowledgement of a disagreement or conflict. Integrative acts indicate the assumption of a problem-solving stance, whereby a solution is sought which maximizes the gratification of concerns for all parties to the conflict. Integrative acts are characterized by verbal openness. Distributive acts assume that there can be only one "winner" to a conflict and are characterized by verbal competitiveness.

Two dimensions are reflected. The first, directness vs. indirectness, relates to the degree to which a conflict is explicitly acknowledged. With integrative and distributive acts, conflicts are directly acknowledged. The second, provisionalness vs. certainty, relates to whether acknowledgement of a disagreement is made in a way which implies that other constructions of the situation are possible, or whether the disagreement/statement made indicates that the speaker will not consider other alternatives.

Within the three main dimensions are eleven subcategories. These were developed using a combination of deductive and inductive techniques. The Verbal Tactics Coding Scheme was used as the basis, but the specific subcategories were developed following a preliminary analysis of the data and were modified as needed.

Procedures
The unit of analysis is the speaking turn, but not all speaking turns are coded. If, for example, none of the categories fit an utterance, that utterance is not coded. This happens most frequently when a group, within a conflict episode, launches off into a tangential discussion that does not relate directly to the conflict. Also, some speaking turns are coded twice if the speaker clearly changes focus within a given speaking turn.

Coders are instructed to establish first whether the act should be coded, then the generic placement of the act (that is, is it indirect, integrative or distributive), and finally the specific code of the act. This scheme is designed to be used with audio- or videotaped discussions with supplemental written transcripts of the discussion. Transcripts alone do not supply the nonverbal cues which sometimes are the only clues as to the appropriate coding of the utterance.

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INDIRECT/AVOIDANT EXPRESSIONS OF CONFLICT

Avoidance or indirect statements do not deal directly with the conflict issue, do not explicitly acknowledge the presence of conflict.

1-1 \textbf{Indirect expression of disagreement.} For example, "Do you really think that will work?" If said in a particular way, this indicates that the speaker disagrees, but is said so indirectly that it almost doesn't seem like a disagreement.

1-2 \textbf{Topic shifting} This is anything that doesn't deal directly with the conflict but attempts to get the talk away from the issue providing the conflict. For example, "Did I tell you what my roommate did yesterday?" if said during a disagreement regarding the training of teaching associates.

1-3 \textbf{Overt attempts to smooth over.} For example, statements that indicate that people shouldn't argue: "Now don't argue, we can figure something out."

INTEGRATIVE EXPRESSIONS OF CONFLICT

These are statements that directly acknowledge the fact that conflict exists, but there is a supportiveness of the other person's viewpoints, an "I" focus (a focus on attempting to clarify or provide rationale for one's opinion) and a provisionalness—instead of being certain about the way something should be, there is a tentativeness, a willingness to explore other viewpoints and entertain other solutions.

2-1 \textbf{Direct, provisional disagreement.} This is a direct statement which indicates that the speaker's disagreement/opinion is not fixed in stone. For example: "I don't think that the University would let us change that." Tone of voice is important here, because the same words, said in a different way, could indicate certainty.

2-2 \textbf{Providing description, rationale, clarification.} Giving reasons for why the speaker disagrees or why s/he holds a certain opinion, without overt attempts to persuade. For example: "Last year my roommate tried to transfer and she lost a lot of her credits and so I think that it would be better if our proposal included something about transfer credit."

2-3 \textbf{Soliciting description, rationale, clarification.} Asking another speaker to give reasons for his/her disagreement or opinion. Making sure that one has understood another. Examples: "Why do you think that?" "In other words, you mean that we shouldn't have all classes repeated, just the important ones?"
2-4 **Problem solving.** Willingness to entertain alternative views, or to find commonalities among proposals. Solution-oriented peace-making. Examples: "Maybe we can find some way to combine these two ideas." "Actually, each of you is talking about something different, so we could make each one of them a separate recommendation."

2-5 **Direct support.** Direct indications of agreement with another member, lending moral support to a member. Examples: "You're right, that would cost too much." "Roger, that's a really good idea!"

DISTRIBUTIVE EXPRESSION OF CONFLICT

There is a focus on getting the other person to change his/her mind, ideas, opinions. It carries a win/lose orientation, indicates a lack of understanding or support, and is characterized by certainty (no doubt that one's ideas are correct.)

3-1 **Direct, certain statements** Indication of disagreement with no doubt, or "opinionated" expressions. For example: "That won't work, it costs too much." "No, you're wrong." There is politeness here (to distinguish it from 3-3).

3-2 **Non-coercive compliance gaining.** Overt attempts to persuade or convince the other. The focus is on the other. Example: "But don't you see that if we made all the TAs take a proficiency test that would solve the communication problem."

3-3 **Coercive compliance gaining.** Impolite or hostile attempts to persuade, threats, insults. Examples: "If you don't agree with the rest of us, we won't finish and we won't win the money." "You're rude!" "Bullshit!" "Don't be stupid, Craig!" There is no politeness here, as there would be with 3-1.
APPENDIX D

OCCI
Form B

INSTRUCTIONS: Below are some statements other people have made to describe the way their groups have handled conflicts. Think about the discussion you have just completed, then respond to each statement by circling the appropriate number along the continuum following each statement. For example, if you STRONGLY AGREE that the statement describes your group's handling of conflict, then you would circle the number "7". If you STRONGLY DISAGREE that the statement describes your group, then you would circle the number "1". If you NEITHER AGREE NOR DISAGREE (YOU ARE NEUTRAL), you would circle the number "4".

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. We blended our ideas with others to create new alternatives for resolving a conflict.</td>
<td>SD</td>
<td>N</td>
<td>SA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. We shyed away from topics that were sources of disputes.</td>
<td>SD</td>
<td>N</td>
<td>SA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Group members insisted that other members accept their positions during a conflict.</td>
<td>SD</td>
<td>N</td>
<td>SA</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4. Group members suggested solutions that combined a variety of viewpoints.</td>
<td>SD</td>
<td>N</td>
<td>SA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Members steered clear of disagreeable situations.</td>
<td>SD</td>
<td>N</td>
<td>SA</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6. We gave in on our ideas when others also gave in.</td>
<td>SD</td>
<td>N</td>
<td>SA</td>
<td></td>
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<td></td>
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<tr>
<td>7. Group members tended to avoid people they suspected of wanting to discuss a disagreement.</td>
<td>SD</td>
<td>N</td>
<td>SA</td>
<td></td>
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<td></td>
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<tr>
<td>8. We integrated arguments into a new solution from issues raised in a dispute.</td>
<td>SD</td>
<td>N</td>
<td>SA</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>9. Members stressed points by hitting their fists on the table.</td>
<td>SD</td>
<td>N</td>
<td>SA</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>10. We went 50-50 to reach a settlement.</td>
<td>SD</td>
<td>N</td>
<td>SA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
11. Members raised their voices when trying to get other members to accept their positions. SD N SA 1 2 3 4 5 6 7
12. We offered creative solutions in discussions of disagreements. SD N SA 1 2 3 4 5 6 7
13. Group members kept quiet about their views in order to avoid disagreements. SD N SA 1 2 3 4 5 6 7
14. Members frequently gave in a little if the other members would meet them halfway. SD N SA 1 2 3 4 5 6 7
15. Members downplayed the importance of disagreements. SD N SA 1 2 3 4 5 6 7
16. Group members reduced disagreements by saying they were insignificant. SD N SA 1 2 3 4 5 6 7
17. Members met the opposition at the midpoint of their differences. SD N SA 1 2 3 4 5 6 7
18. We asserted our opinions forcefully. SD N SA 1 2 3 4 5 6 7
19. Members dominated arguments until the other members understood their position. SD N SA 1 2 3 4 5 6 7
20. We worked together to create solutions to disagreements. SD N SA 1 2 3 4 5 6 7
21. We tried to use everyone’s ideas to generate solutions to problems. SD N SA 1 2 3 4 5 6 7
22. We offered trade-offs to reach solutions to disagreements. SD N SA 1 2 3 4 5 6 7
23. We argued insistently for our own stances. SD N SA 1 2 3 4 5 6 7
24. Members withdrew when someone confronted them about controversial issues. SD N SA 1 2 3 4 5 6 7
25. Members sidestepped disagreements when they arose. SD N A 1 2 3 4 5 6 7
26. We tried to smooth over disagreements by making them appear unimportant. SD N A 1 2 3 4 5 6 7
27. Members stood firm in their views during conflicts. SD N A 1 2 3 4 5 6 7
28. We made our differences seem less serious.

29. Members held their tongues rather than argue.

30. We eased conflicts by claiming our differences were trivial.
APPENDIX E

CODING MANUAL: RESOLUTIONS

The focus here should be on the actual outcome itself, not the attempts to resolve the conflict. For example, it may be that a group tried to resolve a disagreement integratively, but the actual resolution did not incorporate several suggestions into the outcome. In that case, only the outcome is coded.

NON-RESOLUTION

Here, a conflict is abandoned before resolution is reached, usually through a topic shift. For example, consider the following exchange: TAs have to take teacher training now. No, they don't. Yes, they do! If after the following exchange the group goes on to discuss something else, the issue is unresolved. Most of the disagreements over facts remained unresolved, and those instances where the group gets involved in a series of contradictions (Yes they do. No they don't.) usually remain unresolved.

INTEGRATIVE RESOLUTION

The final outcome incorporates the concerns of more than one party to the disagreement, and there is a combination of ideas. For example, in a discussion of whether classes should include more practical application skills, one person said that it would be impossible to do and the other said that it was definitely something that was needed. The final outcome said "Certain classes, where appropriate, would incorporate practical training." This would be an integrative outcome.

DISTRIBUTIVE RESOLUTIONS

Here, only one party's (a party can include more than one person -- it means one side to the issue) ideas get used in the final outcome. For example, in a disagreement over whether classes should be repeated more than once a year, one party said all should be repeated and the other said it wasn't necessary to have all repeated. The final outcome said that ALL classes should be repeated. This is a distributive outcome.
APPENDIX F-1
INSTRUCTIONS FOR THE JUDGES

Enclosed are typed copies of the proposals submitted by the Communication 110 groups on ways to improve the quality of undergraduate education at Ohio State, along with a supply of evaluation forms.

It is important that we get a reasonable spread of scores so that a range of quality is established. Therefore, please read these instructions first before you evaluate the proposals.

First, read through all the proposals and arrange them in order from the best to worst.

Then, numerically evaluate them, using the evaluation forms provided and total up the scores on the individual items to arrive at an overall score for each group.

Finally, look through the overall scores you have assigned. If you have a lot of scores that are identical or very close, please try to reevaluate the proposals so as to spread the overall quality scores out as much as possible.
APPENDIX F-2

EVALUATION SHEET FOR JUDGING GROUP PROPOSALS

Please evaluate each group in accordance with the following criteria. Sum the items to arrive at the group’s overall score, and complete the information requested at the bottom of this sheet.

WORKABILITY: To what extent will this proposal actually work in bringing about the desired outcome of improving the quality of undergraduate education at OSU?

Definitely Will Work
Will Not Work
7 6 5 4 3 2 1

ECONOMIC FEASIBILITY: To what extent is this proposal within the University’s economic capabilities?

Well Within Reason
Not At All Within Reason
7 6 5 4 3 2 1

SOCIO-POLITICAL FEASIBILITY: To what extent will this proposal cause disadvantageous social or political consequences for the University?

Will Cause No Problems
Will Cause Serious Problems
7 6 5 4 3 2 1

OVERALL EFFECTIVENESS: Overall, how would you rate this proposal in comparison with the others?

Much Better
Much Worse
7 6 5 4 3 2 1

GROUP NUMBER
TOTAL SCORE
JUDGE’S NAME
### APPENDIX G

<table>
<thead>
<tr>
<th>Quality of Outcome</th>
<th>Number of Conflicts</th>
</tr>
</thead>
<tbody>
<tr>
<td>77.0</td>
<td></td>
</tr>
<tr>
<td>71.0</td>
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<td>65.0</td>
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<tr>
<td>59.0</td>
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<td>53.0</td>
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<td>47.0</td>
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<td>41.0</td>
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<td>35.0</td>
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<td>29.0</td>
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<td>23.0</td>
<td></td>
</tr>
<tr>
<td>17.0</td>
<td></td>
</tr>
</tbody>
</table>

Scattergram of quality of outcome with number of conflicts.
REFERENCES


Knutson, T. J. and Kowitz, A. C. (1977). Effects of information type and level of orientation on consensus achievement in substantive
and affective small group conflict. Central States Speech Journal, 28(1), 54-63.


