NETWORK ANALYSIS OF THE SYMMETRIC AND ASYMMETRIC
PATTERNS OF CONFLICT IN AN ORGANIZATION

THESIS

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By

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Missing from extant conflict literature is an examination of both symmetric and asymmetric conflict ties. To address this void, network analysis was utilized to examine the responses (both symmetric and asymmetric conflict ties) of 140 employees and managers in four divisions of a large agency of the Federal Government.

The study was limited to conflict over scarce resources. Conflict management methods were examined as well as the perceptions of how respondents both cope with and feel about conflict. The results indicate that when two people in a conflict setting are structurally equivalent they both report actions and feelings that are opposite from those of the other person. This finding, an inverse contagion effect, has been termed diffusion resistance.
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CHAPTER I

REVIEW OF LITERATURE

Introduction

The present research project applies network analysis to a study of conflict in an organization. Whereas previous research has tended to look at conflict in terms of dyads and the attributes of those dyads, the present study takes an holistic view of the organization as a system.

Following the work of Burt (1991) and others, the present study examines the roles and interactions of superiors and subordinates in an organization as part of a fabric of relationships. Power and other factors, often described in personal terms in research undertaken from other perspectives, are herein analyzed in structural terms.

The present study breaks some new ground in looking at asymmetrical conflict. Asymmetrical conflict is discussed in detail at a later point. Lines for further research are suggested. But in order to look at conflict in a new light, and before one can project where new research is needed, the foundations of scholarship in the field of communication must be presented and understood. The following review of literature attempts to place the present study of organizational conflict (both symmetric and asymmetric) in a broader intellectual landscape.
Organizational conflict has been a prevalent topic in research over the past years. Recently the examination of conflict in superior-subordinate dyads has received much attention. Conrad (1991) notes possible reasons for the increase in organizational conflict research. He states that "Perhaps because supervisors spend approximately one-fifth of their time managing conflict, or because graduate programs discuss conflict so frequently, related research has mushroomed" (p. 135). Baron (1984) suggests that "Conflict is a common part of life in modern organizational life...practicing managers report dealing with conflict and its effects occupies fully 20% of their time" (p. 272). Rahim (1990) goes as far to say that "conflict is a serious problem in modern organizations...it wastes precious human resources that would be better directed to other activities" (p. 1).

The amount of time devoted to dealing with conflict in organizations also caught the attention of the American Management Association (Thomas & Schmidt, 1976). Thomas and Schmidt found, over the past ten years, that the ability (through training) to manage conflict has become more important to managers than the traditional training in leadership, motivation, decision-making, and planning (p. 315). With the American Management Association's attention more directed to conflict in organizations, the amount of
research in organizational conflict has drastically increased in recent years.

Perspectives on Studying Organizations

Various approaches are utilized when studying human communication; the same comment can be made about the study of organizational communication. Kreps (1990) points to five approaches to organizational communication: classical theory, human relations/human resource, social system, Weick's model, and organizational culture theory. Fisher (1978, cited in Krone, Jablin, & Putnam, 1989) reports on four different perspectives. These perspectives include mechanistic, psychological, interpretive-symbolic, and systems interaction. Putnam (1983) simplifies the picture by portraying two opposite approaches to the study of organizational communication: interpretive (including naturalistic theory and critical theory) versus functionalist.

Following Fisher's taxonomy of, one may understand the mechanistic perspective as focusing on the transmission of messages from one point to another (Krone, Jablin, & Putnam, 1989). Typical research from a mechanistic perspective "primarily focuses on the channels that allow for the flow of information" (Krone, Jablin, & Putnam, 1989, p. 23). Network analysis is often used in studies from the mechanistic perspective. Often, however, only the channels are uncovered to detect, for example, whether appropriate
formal lines of communication are being utilized (Krone, Jablin, & Putnam, 1989, p. 23).

The psychological perspective "focuses specifically on how characteristics of individuals affect their communication" (Krone, Jablin, & Putnam, 1989, p. 25). Typical research aims at uncovering intra-individual processes, such as self-monitoring, perceptions of locus of control, and conceptual filters, as well as each variable's effect on the subjects' communication (Krone, Jablin, & Putnam, 1989).

The interpretive-symbolic perspective "posits that by virtue of their ability, individuals are capable of creating and shaping their own social reality" (Krone, Jablin, & Putnam, 1989, p. 27). This perspective concentrates on shared meanings among members of an organization.

Morgan (1986) follows the interpretive-symbolic perspective and, thus, proposes analyzing metaphors when examining organizational life. Some common metaphors that are useful when studying organizations include the organization viewed as a machine, a brain, a culture, and a political system (Morgan, 1986).

When the organization is viewed as a culture, research has "focused on the sense-making practices of organization members, as manifested in their use of organizational symbolism" (Mumby, 1987, p.113). This manifestation is based on the belief that organizational members "actively
participate in the construction of organizational reality through organizational discourse [narratives]" (Mumby, 1987, p. 113). The cultural perspective has been linked to a critical or interpretive view of organizations (Mumby, 1987; Putnam & Pacanowsky, 1987; Tompkins & Cheney, 1985).

The final perspective identified by Fisher, systems-interaction, "concentrates on external behaviors as the fundamental unit of analysis" (Krone, Jablin, & Putnam, 1989, p. 30). "The locus of communication in the systems-interaction perspective is patterned sequential behavior, that is, the grouping of sequences of communicative behaviors rather than in a individual's conceptual filters or in shared interpretations of events and activities" (Krone, Jablin, & Putnam, 1989, p. 30). Research typically tracks interaction patterns over time in an attempt to explain the overall communication system (Krone, Jablin, & Putnam, 1989).

While Fisher's review is useful, Kreps' taxonomy and Putnam's simplification are more helpful in pointing to the recent development of a large and thought-provoking literature on and from the cultural and interpretive perspectives on organizational communication. Considering the recency of this literature, its popularity, its relevance to the present study, and its potential long-term significance, the literature review now will focus on several representative authors and issues on the current
scene. These will be addressed in a systematic manner. In each case, the position will be summarized and then the connections to network analysis will be drawn out.

At a foundational level, Mumby (1988) is interested in the idea of organizations. He argues that "...we say structures into existence...." (p. xi). His outlook on organizations is "rooted in the hermeneutic and phenomenological traditions" and "places considerable emphasis on the relationship between symbolic forms and the articulation of power structures in organizations" (p. 14). Drawing upon Habermas' analysis of "interests," Mumby sees organizational meaning as a product of various power interests. These interests are connected to the "deep structure" of organizational behavior (p. xiv).

Mumby's work is relevant to the current project, because he recognizes that "symbolically structured power and domination exist in the context of material practices and actual social structures" (p. 73). Ideology and storytelling, for example, are not just ideational. They are rooted in the everyday practices of social actors. Network analysis may be one of the new tools for describing everyday practices in organizations.

Noting that organizations must be placed in a wider social context, Deetz (1983) advocates a movement from description, to understanding, to evaluation, to education, and to emancipation. The study of organizational
communication has a social purpose--change. Therefore, one must not accept organizations at face value but, instead, one must examine how they came to be. Whose interests are being served? In the course of this analysis, Deetz argues that ideology, once formed, protects the taken-for-granted reality and that even irrational organizational behavior may be purposive.

Deetz's analysis is helpful for a network analysis, because he distinguishes between surface structure and deep structure. Structuralists/functionalists sometimes are accused of seeing an organization as a container and for accepting surface structure as a given. But surface and deep structure may be interconnected. Giddens' (1976, 1979) notion of "structuration," for example, suggests how surface changes and relations clearly influence the deep structure. Deetz also is useful when he offers the view that "Critical research has no predisposition toward any particular method. Many types of quantitative and qualitative methods may be necessary and appropriate" (p. 170). He continues: "A number of different procedures and analyses are necessary in the reciprocal moves between explaining and understanding" (p. 170). Thus, one may argue that network analysis per se is not unthinkable for a critical theorist like Deetz and that a sensitive application of network analysis may be useful.
Putnam (1983) stands within the interpretive school of organizational communication research. She identifies naturalistic research and critical research as divisions of the broader school. Her own emphasis is toward the study of meanings. She sees organizations as an array of disparate groups and views organizational communication primarily as symbolic processes.

However, Putnam accepts the "inevitability of multiple paradigms" (p. 7). She goes so far as to contend that there is something positive in the fact that "The interpretive approach with its emphasis on interpersonal and organizational meanings stands in opposition to the dominant functionalist views of organizational life" (Putnam, 1983, p. 31). Rival perspectives, then, are inevitable and interdependent. Two differing perspectives thrive on the opposition. Whether one names the opposing perspectives interpretivists versus functionalists or cultural theorists versus network analysts, they are partners, according to Putnam. Her 1983 book, therefore, adopts a "pluralistic perspective" (p. 7).

O'Hair and Kreps (1990) advocate applied communication research. Kreps position is hard to identify; it is eclectic. He calls attention to the functions of external as well as internal communication in an organization, and he stresses the role of information and communication in the organizing process (Kreps, 1990). Kreps has an affinity for
the work of K.E. Weick (1979), including Weick's nonlinear view of causality.

The work of O'Hair and Kreps is relevant to the present study for two reasons. First, they endeavor to go beyond the traditional approaches to research on organizational communication. The present study also tries to break some new ground. Second, in stressing applied research, such as the applications of an interpretive approach, they come close to Deetz's call for change. The present network analysis also has the potential for applications in the change process.

Finally, some of the work of Tomkins and Cheney must be mentioned in this brief summary of significant current research outside of a structuralist/functionalist/network analysis perspective. Their research on account analysis is a promising blend of theory and application. An account is "the actors statement about why he or she performed certain acts and what social meaning he or she gives to the actions of himself or herself" (Tomkins & Cheney, 1983, p. 129). Uncovering meaning through the analysis of narratives is a creative approach to the interpretive study of organizational communication. Relevant work in a similar vein also has been done on police officers by Trujillo and Dionisopoulos (1987) in their article, "Cop Talk, Police Stories, and the Social Construction of Organizational Drama." These kinds of studies add a narrative and
qualitative element to the kinds of descriptions available from network analyses.

The present study is grounded in network analysis as a way of understanding organizational conflict from a communication standpoint. Monge and Eisenberg (1987) suggest the use of this type of research as the best approach for studying organizations. The present study falls under the mechanistic perspective for understanding organizations, however, the study does not fit cleanly into this perspective. Conflict concerning scarce resources (explained below) may have no formal communication lines. Rather, the underlying assumption in network analysis is that the patterns of interaction which are like driving motors, probably are a mixture of informal and formal processes.

Network analysis may be reconciled with the other approaches (mentioned immediately above) in one or a combination of three ways. First, one may contend that interpretive, cultural, and critical research must reconcile itself to network analysis, not the other way around. It may be noted in this regard that none of the works cited immediately above mentions Ronald Burt or other current research from the perspective of network analysis. Second, one may follow Putnam in arguing that structuralism or network analysis is enriched by its opposition to interpretive studies, and vice versa. Third, one may affirm
that interpretive research and network analysis supplement one another: "...social theory must be conducted in terms of some approach but none of these by itself can justify ultimate claims" (R. H. Brown, cited in Putnam, pp. 7-8).

While each of these explanations has some merit, the current study follows Deetz in a hybrid version of the third explanation of the relationship between network analysis and other research paradigms. According to Deetz, "A number of different procedures and analyses are necessary in the reciprocal moves between explaining and understanding" (p. 170). Network analysis not only supplements interpretive research, and vice versa, but the two approaches are necessary because explaining and understanding while interconnected are not identical.

One shortcoming of the interpretive perspective is that scholars find it extremely difficult to hold together symbolic processes and material conditions. Network analysis might be able to perform this function. Another shortcoming of the interpretive perspective is the possibility that structures may be reduced to individual cognitions. On the other hand, network analysis recognizes that structures are intersubjective, "...they exist only in interaction...they are properties of social practices and as such are transpersonal" (Poole & McPhee, 1983, p. 210). Network analysts begins with "...a set of relations, from which they derive maps and typologies of social
structure...." (Wellman & Berkowitz, 1988, p. 3). Network analysis focuses solely on relations between people and, thus, is the logical choice of methodology to study conflict in an organization. Conflict, after all, is interactional. Finally, interpretive approaches to organizational communication construe interests and symbolically structured power in terms of domination and emancipation. This ideological and political program is worthwhile. However, the present study does not focus on power, nor on domination in the traditional or Marxist senses of the concepts. Instead, this analysis specifically treats asymmetric conflict as a function of social structure and attempts to fill a gap in the literature.

Perspectives on Conflict

The increase of research dealing with organizational conflict has yielded many definitions of conflict. In fact, "scholars disagree about what conflict is" (Fink, 1968, cited in Hocker & Wilmot, 1985, p. 11). Unfortunately, these multiple definitions have resulted in conflict becoming something of an elastic concept in the social sciences. This section will, therefore, present some of the most commonly used definitions in the literature.

Robbins (1978) defined conflict as "...any kind of opposition or antagonistic interaction between two or more parties" (p. 67). This type of antagonistic interaction provokes frustration and hostility among the interactants.
In addition, Rahim (1990) defined conflict as "... incompatible activities where people at least temporarily interfere with and obstruct each other's behavior" (p. 17). In this case, frustration and hostility result when conflict parties view each other as obstacles. Therefore, the activities of the conflict parties are incompatible since they obstruct one party's attempts to achieve goals.

In organizational life, incompatible activities involve instances of competition. Competition is an active demand by persons for some organizational resource. For this reason, competition is often viewed as an obstacle which creates incompatible activities among members of an organization. For example, consider the situation when member A of an organization is committed to appearing as the brightest member to the supervisor and member B develops an innovative program that the supervisor feels is exceptionally promising. Because of the attention directed towards member B, member A may perceive that the supervisor is viewing member B as more competent. In this situation, member A perceives that member B's activities are incompatible with member A's goals, since member A wants to be considered brighter (more competent) by the supervisor. In this case, the supervisor's attention can be considered a resource. Furthermore, it must be noted that incompatible activities can either be real or perceived as real by the conflict parties (Hocker & Wilmot, 1991).
In addition to instances of competition, organizational conflict is also said to occur "when members engage in activities that are incompatible with those of colleagues within their network...who utilize the services or products of the organization" (Roloff, 1989, p. 496). Some researchers have come to the conclusion that conflict arises when two or more parties are interdependent, and each party's goals are more or less incompatible with the other party's goals (e.g., Pondy, 1967; Schmidt & Kochan, 1972; Walton, 1969). Brett (1984) maintains that "Conflict arises between two or more parties...when they are linked in a power-dependency relationship, that is, each wants something from the other that is not easily attainable elsewhere" (p. 664). Although this summary of perspectives on conflict is by no means exhaustive, it suggests that many different definitions of conflict have similar components. These components include incompatible activities, incompatible goals, and scarce resources. Hocker and Wilmot (1991) have offered the most comprehensive definition of conflict. According to them, conflict is defined as "...an expressed struggle between at least two interdependent parties who perceive incompatible goals, scarce resources, and interference from the other party in achieving their goals" (p. 12). Furthermore, incompatible (opposing) goals are a fact of life (Hocker & Wilmot, 1991).
Incompatible goals can be either real, or perceived as real (Hocker & Wilmot, 1991). When incompatible goals are perceived as real, the organizational member acts as if the incompatible goals are real. Therefore, incompatible goals, whether real or not, affect the behavior of the interactants. Furthermore, perceived or real incompatible goals are manifest in two forms. First, the conflict parties may have the same goals. They may want the same thing and "they perceive the situation as one where there isn't enough to go around [scarce resource]" (Hocker & Wilmot, 1991, p. 18). The parties therefore see that their goals are incompatible with the others' goals. Second, the conflict parties may have different goals, but in order for one party to achieve those goals another party would have to forfeit goals. This scenario is best described when cast into an organizational setting. For example, when one person wants to "see seniority rewarded while another may want to see work production rewarded, they [both] struggle over which goal should be rewarded" (Hocker & Wilmot, 1991, p. 18-19). "Regardless of whether or not the goals of the conflict parties are similar or different, perceived incompatible goals are central to all conflict struggles" (Hocker & Wilmot, 1991, p. 19).

Hocker's and Wilmot's (1991) definition, combined with Brett's (1982) definition of conflict, re-emphasizes that what each person wants is not necessarily easily attainable
from any other member in the system. The recognition that attaining goals is a difficult and complex endeavor is one basis for conflict in organizations. If the scarce resources (e.g., information, products, or services) were easily acquired from other members of the system without resistance, there would be no conflict. In essence, some conflict occurs when one party is constrained by the control which other parties exercise over access to scarce resources. Like incompatible activities and goals, the scarcity of resources (products or services) can be either real or perceived.

In human communication, understood as symbolic activity, there is always the possibility of a margin of error in perceptions and attribution. Interactants also may face considerable cultural differences, as well as complexities in interaction management and coordination of meaning. Rather than addressing these cultural, interpersonal, and symbolic dimensions of conflict assumed to co-mingle with other components of conflict (incompatible activities, incompatible goals, and scarce resources) mentioned in the literature, the present study will focus on conflict arising as a result of scarce resources. This choice makes sense for methodological reasons, namely, that a structural analysis may provide insight into variables not otherwise readily available for analysis. The choice also
makes sense in studying organizational communication because scarce resources in many ways is a systemic issue.

Reasons for Focusing on Scarce Resources in Conflict

Boulding (1965) noted that "only when there is scarcity in the economists' sense can there be conflicts, for the only thing that conflicts can rationally be about is the distribution...of some good which is both scarce and valued" (p. 173). Schellenberg (1982) further added that "significant conflict arises only as a result of monopolistic organizations or immobility [and scarcity] of resources" (p. 52). Brett (1984) stated that "conflict arises from conditions, for example...scarcity of resources outside the parties" (p. 665).

The notion that conflict arises outside of the conflict parties directly relates to the most common topics of conflict--policies, procedures, planning of activities, performance appraisals, recognition, and promotions (Renwick, 1975). These topics of conflict are considered scarce resources according to Hocker's and Wilmot's (1991) definition and can be considered as operating outside of the conflict parties' control. These outside forces fueling conflict are created and sustained by the system in which conflicting parties are embedded. An understanding of this system, or network, will provide insight into how and why conflict over scarce resources affects the whole organization.
The implications of limiting this study of conflict to those situations concerning scarce resources is that, if there is an excess amount of destructive conflict, the interpersonal environment surrounding the scarce resource somehow must be changed. However, to change the interpersonal environment by changing the patterns of conflict implies that conflict may be understood in terms of conflictive interaction.

Rahim (1990) argues that "conflict between individuals or groups within an organization helps uncover persistent problems so that they can undergo careful scrutiny" (p. 1). Rahim (1989) also believes in the "importance of being tied into the informal communication network so that the manager may become aware of conflict issues in their early stages" (p. 19). An informal network permits the manager to "diffuse the situation early or to be prepared to deal with it in a logical and well-thought-out manner" (Rahim, 1989, p. 19). In this sense, "conflict sometimes serves as an impetus for change" (Rahim, 1990, p. 1).

If communication patterns in the organization are important in the early detection of problems, then the thesis that the analysis of networks of conflict within an organization may detect serious conflict before it erupts gains credence. Burt (1991) stresses that "The central tenet of network analysis is that the causal motor behind what people feel, believe and do lies in the patterns of
relations between actors in a situation, as opposed to the attributes of the individual actors" (p. 4). "Your race, age, sex, and so on, matter less than the pattern of relations that position you in social structure. Under this central tenet, any explanation of beliefs and behaviors requires an analysis of how actors are connected to one another in the situation where beliefs or behaviors are observed" (Burt, 1991, p. 4-5). Coombes and Avrunin (1988) also stated that there are "systematic structural properties running through the spectrum of all conflicts and that these abstractions are relevant to the process of [managing] conflict" (p. 1).

Wellman and Berkowitz (1988) stated that "Although many mainstream [social scientists] do use the structural location of persons to explain their acquisition of norms and values, they still treat persons as individuals acting in response to their internalized norms" (p. 33). As a result, social scientists "find purportedly sociological regularities when persons who have similar personal attributes behave similarly in response to shared norms" (p. 33). Furthermore, "Such explanations, concerned as they are with aggregated sets of individual motives for action, are ultimately psychological and not sociological in character, as they [social scientists] neglect the ways in which variations in structured access to scarce resources determine opportunities and constraints for behavior"
Therefore, social scientists view the relationship between the system and the people in terms of "shared consciousness, commitments, normative orientations, values, systems of explanations" (Howard, 1974, cited in Wellman & Berkowitz, 1988, p. 33). In contrast, structural analysts suggest that "social scientists should explain behavior by analyzing the social distribution of possibilities: the unequal availability of resources--such as information, wealth, and influence--and the structures through which people may gain access to them" (p. 33). Thus the emphasis is on treating "norms as effects of structural location, not causes" (p. 33). Studying the interaction surrounding conflict over scarce resources is therefore a fruitful topic for investigation.

The core of social conflict over scarce resources is interaction. "This interaction has an abstract structure, and that concern for peaceful [management] of social conflict may be more effectively implemented when this structure is understood in a way independent of a specific context...the process of abstraction is critical for developing new methods and techniques for the construction of general theory" (Coombes & Avrunin, 1988, p. 2).

Kabanoff (1985) advances this view of interaction when he notes that "the more positions a person holds, or the greater the centrality of a person's position, the more information a person will have and the greater the
opportunities the person has for influencing others" (p. 118). Kabanoff (1985) further adds that by identifying the "common underlying concerns in diverse conflict situations, the potential for more effective management decision making, training, and planning is created, as well as facilitating the development of broader and richer models of conflict" (p. 135). Rahim (1990) pointed out that:

... important problems interfere with research progress on communication and interaction during conflict. People can threaten, promise, cry, demand, plead, aggress, and use many other strategies in conflict. These strategies can be accompanied by warmth, coldness, anger, and other nonverbal messages. Research is further complicated because the impact of any strategy depends, in part, on the context in which it occurs. How people respond to a threat depends upon other messages sent with a threat. Relatedly, observation schemes are difficult to compare and can become quite complex (p. 16).

For this reason "most research has been primarily experimental in social psychological laboratories...studies are needed to test the generalizability of the findings to work and other settings" (Rahim, 1990, p. 17). Burt (1991) stresses that a problem arises when "attempts are made to generalize attribute based descriptions across societies and over time...the problem is that the connection between..."
attributes and social structures changes over time and across societies" (p. 13). Thus, the connection between attributes and social structure is not a causal relationship, it is simply a "...correlation, determined when a society is observed" (Burt, 1991, p. 13).

How Organizations Perceive Conflict

Perception is a main component of conflict, and many of the previous definitions of conflict involved the perception of incompatible activities, incompatible goals, and scarce resources among conflict parties. At this point, it is important to discuss the overall perception of conflict within organizations. Conflict in organizations, as in interpersonal conflict research, is viewed as having both positive and negative effects.

Negative Effects

The beliefs of the proponents of negative effects were summarized by Stamatis (1987), who observes that conflict is "generally regarded as a negative force that creates tension, lowers productivity, and disrupts employee relationships" (p. 50). This negative force is due, in part, to the process of socialization. As Robbins (1978) points out, "since our earliest years...authority figures in social groups all have historically reinforced the belief that disagreement bred discontent, which acted to dissolve common ties and could eventually lead to destruction of the system" (p. 68).
Organizational climate seems to indicate how conflict is viewed by individuals in the working environment. If the organizational climate views conflict as negative, then employees embedded in that climate will likely view conflict as negative. By way of example, Renwick (1975) described a consultative type of organizational climate which "... places a great deal of emphasis on maintaining harmony and good human relations" (p. 454). This type of climate can be directly related to the socialization assertion of Robbins (1978). With a negative perspective concerning conflict and a consultative type climate, there is a decreased chance of managing conflict productively. Most of the conflict that does occur in consultative type environments is typically destructive in nature (Renwick, 1975). These destructive tendencies are mainly due to the fact that the environment does not allow for manageable conflict to be expressed until it becomes so widespread and intense that it is no longer manageable (Renwick, 1975).

If the organization views conflict as positive, however, then the individuals working in the organization may view conflict as positive. Because of this positive view of conflict, workers may feel more comfortable expressing their conflictive feelings before their actions become unmanageable.
Positive Effects

When an organization views conflict as positive, the organization may reap benefits from conflict, as long as the conflict is managed productively and remains at a frictional level. Frictional conflict means that conflict is often minor and does not alter the organizational structure (Howat & London, 1980). Benefits of frictional conflict include "...maintaining optimal levels of stimulation, producing high quality ideas, calling attention to problems that require change, and fostering internal cohesiveness and unity of purpose" (Howat & London, 1980, p. 172). When frictional conflict is either explicitly or implicitly permitted to be expressed within an organization, it allows for areas that need improving to be recognized in an early stage before the problem becomes too large to manage.

Brett (1984) maintains that a manageable level of conflict keeps organizations responsive to their environments and allows them to adapt readily to change. In adaptation and change processes communication plays a vital role in maintaining a manageable level of conflict. As Hocker and Wilmot (1991) point out, "Communication and conflict are inextricably tied" (p. 13). In short, they suggest that "communication often creates conflict... reflects conflict...and is the vehicle for the productive or destructive management of conflict" (Hocker & Wilmot, 1991, p. 13). Roloff (1989) observed that "Conflict is part of
much human experience...given a gap between organizational members at different levels of the authority structure, conflict could afford the opportunity for greater feedback, adaptation, and innovation" (p. 484-485). Turner and Weed (1983) expand the notion of intra-organizational conflict to a more global setting. They maintain that "Organizations are operating in a changing world with all kinds of new situations arising that the organization has to adjust to if it is going to prosper" (Turner & Weed, 1983, p. 90).

Thus, the effects of intraorganizational conflict are, in part, created by organizational climate, the relative ability to express sources of friction, and socialized attitudes about conflict. Climate, expressiveness, and socialized attitudes all may be understood as system-level antecedents.

Outcomes of Conflict

In addition to the effects of how an organization views conflict, research efforts sometimes look at the outcomes or effects of conflict within an organization. Baron (1984) maintains that conflict can yield important positive outcomes. These positive outcomes include considering new ideas carefully, facilitating more analysis of problems facing the organization, and paving the way to better solutions to those problems (Baron, 1984). Howat and London (1980) believe that other potential positive outcomes of conflict are "maintaining optimal levels of stimulation,
producing high quality ideas...and fostering internal cohesiveness and unity of purpose" (p. 172). These positive outcomes occur when the intensity of the conflict is frictional.

On the other hand, chaotic conflict can create long-term negative outcomes on an organization. In fact "because the unpleasant feelings and negative attitudes generated in such cases tend to persist, they may continue to exert negative effects on organizational effectiveness long after the issue that initiated the conflict has been resolved" (Baron, 1984, p. 272-273).

The most common outcomes of organizational conflict involve feelings of frustration, dissatisfaction, hostility, and anger (Kabanoff, 1985). Behavioral expressions of conflict such as aggression are likely to be the "least common and most difficult outcomes to predict" (Kabanoff, 1985, p. 127). In short, because of the feelings associated with conflict, how employees deal with conflict "can quickly move from a constructive mode, capable of generating positive outcomes, to a destructive one, much more likely to yield negative results" (Baron, 1984, p. 272).

Richmond, Wagner, and McCroskey (1983) found that previous research has shown conflict to be related to both organizational productivity and/or employee satisfaction. Employee satisfaction (not related to productivity) is "tied to absenteeism and turnover rates which are major financial
drains on profit and non-profit organizations alike" (Richmond, Wagner, & McCroskey, 1985, p. 27). Within this framework, it is also necessary to examine how dyadic-level conflict occurs.

Superior-Subordinate Conflict Research

Conflict Management Methods in Research

Within the framework of conditions at the organizational system-level, research efforts have focused on defining the antecedent interpersonal variables of organizational conflict. (e.g., Conrad, 1983; Evan, 1965; Howat & London, 1980; Kabanoff, 1985; Musser, 1982). Many of these variables are discovered by studying superior-subordinate dyads in organizations. Superior-subordinate conflict research often is based on Blake's and Mouton's (1964) classic definition of five methods of conflict management methods. Conrad (1983) summarized these conflict management methods as withdrawal (avoiding); smoothing (playing down the differences and emphasizing common interests), compromising (splitting the differences and searching for an intermediate solution), forcing (competitive win-lose situation), and confrontation (open exchange of information so that a mutually beneficial decision can be made).

Researchers of superior-subordinate conflict often take the variable analytic perspective of studying either superiors or subordinates. Such a perspective seeks to gain
insight into the conflict dynamics of organizationally-defined roles, particularly as members of the organization interacted with one another. This line of research tends to emphasize the "product" of the superior-subordinate relationship, not the relationship itself, where the "product" is usually a dependent variable measuring which conflict management method is preferred by either party. In addition, the vast majority of superior-subordinate conflict research concentrates on preferences that superiors have for particular methods of conflict management. "All too much of the recent literature on [organizational conflict] focuses solely on the manager's [superior's] strategy" (Musser, 1982, p. 267). Given the fact that dyadic conflict occurs within the larger structure of patterns of organizational communication, however, what is needed now is a simultaneous analysis of the conflict relationships among all members of an organization.

As described earlier, the main goals of organizational conflict research are to try to predict the choice of conflict management methods that superiors or subordinates prefer and to determine which are most commonly utilized by superiors and subordinates (e.g., Burke, 1970; Musser, 1982; Renwick, 1975). Some results of this type of investigation include Burke's (1970) study, which found that confrontation was the most common method of conflict management utilized by superiors. Following confrontation, in descending order,
were smoothing, forcing, compromise, and withdrawal (Burke, 1970). On a somewhat different order, Renwick (1975) found that superiors were more likely to "... rely on confrontation, compromise, smoothing, and forcing, in that order" (p. 452). Perhaps these research inconsistencies are due to the fact that this type of variable analytic research tends to be bound by the particular situation or context and time during which the conflict occurred. While it is important to know the conflict management techniques utilized by superiors, it is more feasible for this study to examine the patterns of conflict in an organization in an attempt to account for all possible techniques utilized by both superiors and subordinates.

Some research concerning superior-subordinate dyads focuses on the use of power (Conrad, 1983), influence (Kabanoff, 1985), and superiors' acceptance of subordinates' disagreement with them as predictors of the likely methods of conflict management to be chosen. These studies, however, do not specifically explore why a choice is made. "Thus far, the majority of research has concentrated on the description of the communication strategies and the identification of disputant characteristics that are related to the use of certain strategies" (Rahim, 1990). This type of superior-subordinate research usually reports which strategy is chosen and how frequently.
Conrad (1991) urges that superior-subordinate conflict research centering around the choice of management methods should be abandoned in favor of more "communication-centered designs" (p. 147). Furthermore, research on superior-subordinate conflict has recently been criticized because there is "little evidence that scores on conflict style [method] scales predict either participants' choices of communicative strategies or their actual communicative practices" (Conrad, 1991, p. 147).

A final note on the superior-subordinate paradigm may be found in Marxist theory. An emphasis on symmetrical conflict may arise from a management-oriented ideology. Who more than anyone else has an interest in managing or controlling conflict? The answer, of course, is managers.

**Sources of Superior-Subordinate Conflict**

Research has identified many sources of conflict. These sources include differences in attitudes (Musser, 1982), personalities (Conrad, 1983), beliefs (Musser, 1982), perceptions (Renwick, 1975), status (Turner & Weed, 1983), values (Robbins, 1978), goals (Thomas & Schmidt, 1976), knowledge or factual material (Renwick, 1975), power (Turner & Weed, 1983; Brett, 1984), and influence (Kabanoff, 1985). Other sources of conflict in organizations are work/information overload and underload (Turner & Weed, 1983), need for control (Conrad, 1983), and competition for limited resources (Thomas & Schmidt, 1976). Rahim (1990)
states that "competition over scarce resources, ambiguity over jurisdiction or responsibility, internal complexity, and inadequate forms of communication" were prime sources for organizational conflict (p. 2). In order to understand the sources of conflict fully, researchers have aimed their studies at uncovering the topics of superior-subordinate conflict.

Topics of Superior-Subordinate Conflict

In addition to the sources of conflict, many topics of conflict have been uncovered within a superior-subordinate context. The most frequent topics of conflict center around administrative issues (Renwick, 1975). These issues usually concern policies and procedures, and the planning of activities. Performance appraisals, recognition, and promotions are also common topics for conflict (Renwick, 1975). Other topics of conflict include vague assignments, refusal to accept feedback, and unfair distribution of work (Rahim, 1990).

In almost all superior-subordinate conflict research, the subordinate is "implicitly viewed as a passive party in the conflict who responds reciprocally or subserviently to whatever strategy the supervisor chooses" (Musser, 1982, p. 267). Spykman (1964), drawing from Georg Simmel's theories, stated that the "relationship between the superior and the inferior assumes oftentimes the appearance of a one-sided
operation. It seems as if the superior exerts an influence which the inferior merely undergoes" (p. 95).

Spykman (1964) also argued that the relationship between superior and subordinate "always allows a certain amount of independence and spontaneity on the part of the subordinate" (p. 95). Furthermore, "In some cases of superiority and inferiority the amount of spontaneity and independence is great, in others small; but it is never wholly absent" (p. 95). It has also been argued that authority and prestige are non-existent without the active participation of those who follow (Spykman, 1964). In the case of organizations, where leaders are assigned, authority "descends into the individual [the assigned leader] from the outside" (Spykman, 1964). The actual transference of authority of the job to the job holder can not occur without "the active belief of those who submit to authority" (Spykman, 1964, p. 96). In this sense, "Authority is a sociological product requiring the spontaneous and active participation of the subordinates" (Spykman, 1964, p. 96).

Based on Spykman's (1964) arguments, the subordinates can not be viewed passively. Despite this scholarly interest in subordinates, it is interesting to note that superior-subordinate conflict is usually discussed in terms of the effectiveness of the superior's conflict management strategy with little attention directed towards the strategies of the subordinate (e.g., Burke, 1970).
Patterns of Conflict Interactions

While it is beneficial to know what the possible sources, topics, and outcomes of conflict interactions are, it is equally, if not more important, to define the effects of patterns of conflict interaction. Variable analytic conflict research often addresses instances of conflict which are constrained by both time and situation, but studying dyads in this manner does not take into account the social systems in which they are embedded. Wellman and Berkowitz (1989) pointed out that dyadic interactions do not occur in social vacuums. Unfortunately, in traditional variable analytic research paradigms, conflict dyads are extrapolated from the very systems which generated the conflict. Kelly (1970) maintained that "Conflict is determined by structural factors such as...the design of the career structure, or the nature of the class system...most research fails because it does not have the proper frame of reference. It fails to acknowledge the importance of the sociological forces" (p. 104). Burt (1991) further noted that "people [researchers] tend to forget the causal importance of relations and focus on correlates of more easily detected and communicated...attributes known to be socially significant" (p. 12).

Research must begin to focus on understanding the patterns of conflict interactions and how people choose the people with whom to interact in conflict in order to
understand fully the true nature of organizational conflict. Turner and Weed (1983) asserted that "Learning to read the situation [pattern of conflict] as well as people is a basic competency for anyone who wants to know how organizations work" (p. 30).

**Focusing on Symmetric Conflict Ties in Research**

One of the drawbacks of variable analytic conflict research is that it tends to ignore the directionality of conflict relationships and focuses, instead, upon symmetric conflict ties. A symmetric tie exists when person A has conflict with person B who, in turn, has conflict with person A. An asymmetric tie exists when person A has conflict with person B, but person B does not have conflict with person A.

For example, Conrad (1983) analyzed the responses gathered from thirty-five supervisors concerning their conflict with subordinates. Conrad made the data symmetric by comparing the supervisor's responses to those of their subordinates. Cases in which the subordinates reported that their supervisors "...typically used a mode of conflict management that differed from their supervisors' self-reports were excluded from the analysis" (p. 223).

In the context of this example "choice" (from the previous explanation of symmetric and asymmetric ties) refers to the reported choice of conflict management method used with another person. When subordinate A reported that
superior B used a forcing method of conflict management and superior B reported using a forcing method of conflict management, a symmetric tie was formed and therefore included in the study. However, when subordinate A reported that superior B used a different method than superior B reported, the tie was asymmetrical and thus discarded. Discarding examples that do not fit the paradigm is a prime example of how conflict research tends to ignore asymmetrical perceptions concerning conflict interactions between superiors and subordinates.

Richmond, Wagner, and McCroskey (1983) also made their data symmetric. This data transformation was accomplished by excluding data that were obtained for supervisors or subordinates for which no counterpart data were available, and, therefore, potential asymmetric ties were not included in any of the analyses.

In addition, some researchers force symmetry by selecting a conflict partner for a superior. For example, only one subordinate is chosen for one superior who has many subordinates (e.g. Howat & London, 1980). In this case, the randomly selected subordinate may not have been the most appropriate choice for reporting on the supervisor's ability to manage conflict. In fact, the subordinate may not have had any conflict with the supervisor. This practice approximates forcing a conflict situation that does not normally exist between the superior and the randomly chosen
subordinate. As described in the Conrad (1983) example, if the chosen subordinate does not accurately reflect the superior's self-report of conflict management method, then this dyad would also be discarded in the analysis. Again, asymmetrical conflict ties are ignored.

Even the definitions of conflict presented in this paper reflect the focus of research on strictly symmetrical conflict. As Robbins (1978) notes "...if a conflict is perceived, it exists whether or not that perception is accurate" (p. 68). Stagner (1965) indicates that "It must be recognized, none the less, that perception is not identical to reality...reality is not the same for observers belonging to two different groups" (p. 46-47). This argument is easily applied to superiors and subordinates since they make up two different groups within organizations. Further, each group could encompass several subcultures, with complex patterns of intra-group and inter-group interactions. Richmond, Wagner, and McCroskey (1985) further add that "Managers and subordinates could not agree on how active the manager was in managing conflict [and that the] lack of shared perception [was] disturbing" (p. 35-36). These findings add support to Kelly's (1970) finding that "most research fails because it does not have the proper frame of reference....It fails to acknowledge the importance of the sociological forces" (p. 104). It seems logical to assume that the sociological forces placed on superiors and
subordinates (who occupy two distinct formal structural positions) differ significantly and can result in differences of perception.

It further seems logical that, if person A perceives conflict with person B, who does not perceive the conflict, person A would still behave as if he or she were engaged in conflict. Thus, asymmetrical conflict ties would have a different structure and, perhaps, a different impact than symmetrical conflict ties on the social system (the interactions among organizational members) within the organization. For example, asymmetric conflict relationships may be present in a network because one actor may remember the conflict and the other actor does not, or because it was more important to one than the other. To adjust for this problem, Burt (1991) suggests the use of network analysis, which "generates stronger more cumulative research results than predictions from attributes because it grounds explanation in the bedrock of patterns responsible for certain attributes being socially significant" (p. 13).

Systems Theory and Network Analysis

With conflict eloquently tied to communication by Hocker and Wilmot (1991), it is equally important to integrate communication and conflict to systems theory and network analysis. Under general systems theory a system is defined as a set of interrelated parts coordinated to accomplish a set of goals (Churchman, 1968, cited in Rogers
& Kincaid, 1981). In other words, members (interrelated parts) of an organization are considered a system because their activities are directed towards achieving the organization's goals. Furthermore, "Systems theory is holistic, concentrating on wholes, the relationships between parts, interactions of the system with its environment, and with control or self-regulation of direction" (Rogers & Kincaid, 1981, p. 43). In essence, "the central credo of systems theory is the statement that the whole is greater than the sum of its parts" (Rogers & Kincaid, 1981, p. 43).

Communication has generally been studied in terms of linear models. Most of these models are one-way linear models such as the source-message-channel-receiver viewpoint (Berlo, 1960). To some degree, conflict has also been studied through linear models. For example, when studying conflict management method preference among superior-subordinate dyads, researchers often assume that one party sends a message indicating conflictive attitudes through some sort of channel to the receiver. As stated earlier, the receiver (typically the subordinate) is "implicitly viewed as a passive party in the conflict who responds reciprocally and subserviently to whatever method of conflict management the supervisor chooses" (Musser, 1982, p. 267). Rogers and Kincaid (1981) further urged that "communication [in this case, conflict] can be better understood if it is not broken up into a sequence of acts
(source-message-channel-receiver), but rather as complete cycles of communication [conflict]" (p. 31). In the study of human communication "...emphasis should be placed upon information-exchange relationships, rather than on individuals as the units of analysis" (Rogers & Kincaid, 1981, p. 32). A focus on relationships within a network encourages researchers of organizational conflict to lessen their reliance on superior-subordinate dyads and include the entire system in which they are embedded. The analytical tool for placing emphasis on the relationships among actors in a system may be found in network analysis.

Network analysis provides many structural models for studying communication systems. A model is typically defined as a "representation of real-world phenomenon in more abstract terms which can be applied to other cases at other times" (Rogers & Kincaid, 1981, p. 32). For the purpose of this study, the structural models of network analysis will be interpreted in terms of conflict interactions.

Since systems theory is holistic, "it assumes that the complex interactions among the parts of a given system would be destroyed by the dissection of the system through atomistic research procedures...[thus] systems should be studied as a total unit, not as separate units" (Rogers & Kincaid, 1981, p. 46). Network analysis is the main tool
for studying entire systems through analysis of the patterns of interactions among the system's members.

Network Analysis and Conflict

At this point in the review of literature, a discussion of how network analysis may be applied to the study of organizational conflict is essential. The significance of the present study is that it applies network analysis to conflictive patterns of communication. This analysis will explore how the patterns of conflict constrain performance within the organization, define the roles and power positions of the interactants in the conflict network, and suggest how they impact the organization. Instead of taking variables and applying them to social theory, a perspective will be adopted that takes social theory and applies it to variables, namely conflict interactions.

As stated earlier, in network analysis the "causal force originates in the structure of relations that define a situation" (Burt, 1991, p. 11). For the purpose of this study, the structure of relations will be defined by the conflict interactions among members in the organization that will be under investigation. Adopting this perspective means that the cause of conflict will be sought in the ties among the members of an organization engaged in conflictive interactions. As Burt (1991) noted "Theoretical clarity comes from having to be explicit about how patterns of relations combine to generate causal force. Network
analysis shifts the focus of research attention from what to how; from a search for factors that matter to a search for how factors that matter have their effect" (Burt, 1991, p. 11).

The review of literature to this point has indicated that the focus of the studies presented was on the factors (variables) that matter in conflict situations. However, these studies do not provide answers as to why and how those variables had an effect on the organization. When researchers examine conflict in an organization, the effects of it may be obvious, but understanding what factors initiate and sustain conflict are less important than understanding how patterns of conflict interactions influence the consequences of conflict in human organizations.

How people are positioned within the conflict network can be determined by strictly focusing on the social system created by conflictive interactions. Persons with whom person A has conflict, and who have conflict with person A, positions person A in the conflict network (including both symmetric and asymmetric ties). From the position(s) each organizational member occupies, a number of structural models can be applied to gain insight into how the pattern of conflict affects the organization as a whole, instead of isolated instances of conflict between dyads which have symmetric ties.
Network Analysis

An understanding and definitions of structural data and the structural models involved in network analysis are needed at this point to highlight further the need for conducting structural analysis of conflictive interactions.

Guidelines for Data Collection

Burt (1991) cited Lindzey's and Byrne's five guidelines for collecting sociometric choice data. The first guideline is that "Systems boundaries should be made clear" (Burt, 1991, p. 61). Clear boundaries simply means that the respondents should know all of the possible choices involved in the study. For this study, a list of all possible alters and their codes was given to the respondents. Second, "Under many circumstances, it is preferable to specify the number of choices to be made" (Burt, 1991, p. 61). The circumstances of this study did not necessitate a limit on the number of choices. Third, "the kind of relation being requested should be made clear to respondents" (Burt, 1991, p. 61). The kind of relation requested was made entirely clear through the following statement and question which appeared on the questionnaire: "Scarce resources within the organization may include, but are not limited to, a lack of time to meet deadlines, lack of information, lack of appropriate/reliable equipment (such as fax machines and telephones), lack of state-of-the-art equipment, and a lack of personnel. With whom do you have conflict about scarce
resources similar to the ones listed above?" The fourth guideline for collecting sociometric choice data is that "citations should be confidential (Burt, 1991, p. 61). This guideline was maintained by having respondents use only the code numbers of the names of the persons with whom they have conflict concerning scarce resources. The fifth guideline is that "questions should be gauged to the respondents level of understanding" (Burt, 1991, p. 61). An inspection of the questions reveals that they were clearly gauged to the understanding level of the organizations members.

**Data**

The data used in network analysis are termed structural data. The data consisted of four binary matrices (see Table 1) and were analyzed using STRUCTURE 4.2 (Burt, 1991). In this study, employees were asked to choose with whom they had conflict concerning scarce resources. Employees chose their conflict partners from a randomly ordered list of names of employees in their "division". Each person had an assigned code number 0-N. The codes were then used to create the binary data matrices. Each of the employees (termed ego or alter) occupies one row and their choices are recorded in the appropriate column of their alters (the people whom they chose as likely candidates for conflict). Zeros in the columns are "null" ties--this means that the actor (ego) in that row did not choose a person in a column as a likely candidate for conflict interaction. Ones in the
columns indicate that the actor occupying that row chose those alters.

Once the raw data are entered into STRUCTURE 4.2, the binary choice data are transformed into direct measures of relations as a function of the path distance, a concept which is explained below. The symbol "i" stands for the ego (row person in a binary matrix, the "chooser") and j is the alter (column person in a binary matrix, the "chosen"). The symbol $z_{ij}$ stands for the reported relation. The $z_{ij}$ equals 1 when i chooses j, and equals 0 when i does not choose j. The $z_{ij}$ are then read by STRUCTURE 4.2 as direct measure of relations. In terms of this study, the relation defined is conflictive interactions over scarce resources.

Path Distance

A path distance is a measure of indirect ties. "The path distance from actor i to actor j, $pd_{ij}$, is the minimum number of choices i requires to reach j" (Burt, 1991, p. 63). If i chooses j as a conflict partner, then $pd_{ij}$ equals 1. If i chooses q as a conflict partner and q chooses j as a conflict partner than $pd_{ij}$ equals 2. "STRUCTURE 4.2 finds path distances by raising the input matrix of choice data to successive powers" (Burt, 1991, p. 63).

There are many advantages of using path distances in network analysis. As pointed out earlier, there is a need for including the whole pattern of conflictive interactions when conducting research, thus including direct and indirect
relations. Burt (1991) indicated that "the lack of a citation from person i to person j needn't indicate the lack of relationship from i to j...it merely indicates the i doesn't see j as one of the people with whom he [or she] has the strongest of the requested kind of relationship" (p. 66). Including both direct and indirect connections provides a more complete understanding of how conflict works within an organization.

**Tie Strength**

The frequency decay function is used to transform binary choice data to measures of tie strength for structural equivalence analysis (Burt, 1991). "Two actors are structurally equivalent to the extent that they have identical relations with every person in every network within a social structure" (Burt, 1991, p. 124). Structural equivalence will be discussed fully later in this chapter. The following equation is used to transform (normalize) choice data to measures of tie strength:

\[ z_{ij} = \begin{cases} 
1, & \text{if } i = j \\
1 - \frac{f_{ij}}{N_i}, & \text{if } i \text{ can reach } j \\
0, & \text{if } i \text{ cannot reach } j 
\end{cases} \]

"where \( N_i \) is the number of individuals that i can reach including herself in any number of choices and \( f_{ij} \) is the number of individuals that i can reach in the minimum number of choices needed to connect her with j" (Burt, 1991, p. 69). The term "reach" comes from graph theory and means that
a person can have contact with another either directly or indirectly.

This type of transformation is necessary because "the rate at which the strength of a relation decreases with the increasing length of its corresponding path distance should vary with the social structure in which it occurs" (Burt, 1991, p. 69). By using the frequency decay function, "decay is a function of the number of people reached at the path distance compared with the total number of people reached at the boundary of an individual's social circle" (Burt, 1991, p. 69). In essence, the "larger the group over which you have to distribute network time and energy, the weaker the relationship you can sustain with any one member of the group, and the stronger the relations with the people connected most directly to you" (Burt, 1991, p. 70). In conflict terms, the more people an actor has conflict with at greater path distances, the weaker the conflict, and the conflict with those most closely connected to the actor will be greater in intensity.

**Network Density**

"Density is the average strength of relations in a group or network (mean $z_{ij}$) ... within a whole network of unconstrained choice, density increases with the number of choices drawn for each person and decreases with network size" (Burt, 1991, p. 100). In order to maximize density, "measure relations as a function of path distances..."
because relations will be created between people whose only connection is through intermediaries" (Burt, 1991, p. 101).

The recognition that intermediaries play a role is a significant concept when studying conflict. The very nature of conflict within an organization is dependent on intermediaries. Consider an employee immersed in an organizational climate that views conflict as negative. The employee will likely not openly express his or her conflict with the superiors but may express them to colleagues. In any case, the conflict still exists, yet the supervisor(s) may only suspect its existence.

In analyzing implicit or covert conflict, path distances and network density are crucial. Hostility may be formed at lower levels in the organization, but no one has been able or willing to bring the hostility to the people at the upper levels of the organization. In addition, because of the size of the organization, the strength of the tie between supervisors and subordinates may be very weak due to the span of control of the supervisor. On the other hand, the subordinate may only have one supervisor so the strength of the conflict tie will be greater since more time and energy are directed at the one supervisor.

Structural Models

Equivalence

For clarity, STRUCTURE 4.2 measures "equivalence from raw patterns of network relations based on path distances"
normalized by the frequency decay function" (Burt, 1991, p. 133). Equivalence means that "similar actors have similar patterns of relations with others" (Burt, 1991, p. 8). In conflict terms, equivalence means that similar actors will have conflict with similar others (the same alters), because "pattern similarity defines social boundaries around reference groups and feelings of relative deprivation, creating homogeneous beliefs and behavioral tendencies among equivalent actors" (Burt, 1991, p. 8). Therefore, the causal force of equivalence "lies in role playing within a shared frame of reference" (Burt, 1991, p. 8). This structural model compensates for Kelly's (1970) finding that "most research fails because it does not have the proper frame of reference" (p. 104). By using structural equivalence, a shared frame of reference is established based on the conflictive interaction of actors with similar others.

Actors who are equivalent (detected by identical profiles of relations) "make up a social category, a group termed a position, jointly occupied by equivalent actors. Their pattern of relations, abstracted from the actors in the position, defines a status with a role-set, a set of relations with other statuses" (Burt, 1991, p. 124). In this sense, a role is "not defined by relations with specific individuals; rather, abstracting from actors, it is defined by relations with other roles" (Burt, 1991, p. 124).
Much research on roles in conflict focuses on superior-subordinate dyads. By applying structural equivalence to an organization as a whole, roles in a conflict situation will not be defined by individuals. The analysis, instead, accounts for the whole system. Rather than looking at instances of conflict between superiors and subordinates, this study will examine the interlocking roles in conflict interactions by considering actors as occupying equivalent positions. Instead of profiling a superior's conflictive relations to his or her subordinates on a dyadic basis, "role equivalence focuses on the pattern of triads in which [the superior] is involved" (Burt, 1991, p. 125).

Burt (1991) defines a triad as one ego and two alters. In a triad, the relations involved are from the ego to each of the alters and between the alters themselves. Selecting the triad as the unit of analysis opens a wide horizon for conflict research. Moving from a focus on dyads to a focus on triads allows for an understanding of the relationship between the two alters. In superior-subordinate conflict research, a whole relationship is typically ignored. In fact many relations are often ignored since an ego can be involved in \((N-1)(N-2)/2\) possible triads within an organization. In network analysis, relations within these triads are the basis for formulating ego's role. As Burt (1991) notes, "characterizing a triad of ego and two alters by ego's relation to and from alters and relations between
the alters yields a typology of triads, and ego's role refers to her involvement in each type of triad" (p. 125).

Since ego's role is defined by his or her involvement in triads, asymmetric ties must also be included in the study of conflict through network analysis. Triads are defined by ties that are directional in nature. For example, ego reports having conflict with both alter A and alter B, but only alter A reports having conflict with ego. In traditional conflict research, the only tie that would be examined would be the symmetric tie between ego and alter A, because ego perceives conflict with alter A, but alter B does not recognize ego's conflict with him or her. As discussed above, directional ties are often corrected for and ignored in conflict research (e.g., Conrad, 1983).

In addition, alters' identities are "defined by their relations with each other and ego...they are no longer individuals who receive and send relations...each is now a kind of intersection between two relationships, a relationship with ego and a relationship with the other alter" (Burt, 1991, p. 131). The impact on conflict research is that the alter (frequently the subordinate) is no longer implicitly viewed as a passive party in the conflict relationship (Musser, 1982). Alters are now active "intersections" in conflictive triads.

Where traditional conflict research focuses on the superior, subordinates will be analyzed equally through
network analysis. In other words, superiors in an organization will not be the only actors identified as egos. Superiors will also be analyzed as alters (possibly of their own subordinates). This conceptual move further opens up the study of organizational conflict by refocusing the emphasis equally across organizational stratifications such as superiors and subordinates.

"The network structure of a role has an identifiable signature as a pattern of these component microstructural orientations toward others" (Burt, 1991, p. 131). Each triad type is considered a role component. Structural role equivalence defines the person's role in the network by the "relative frequency of the role which a person as ego plays within each of the triad types within a network" (Burt, 1991, p. 131). Therefore, two actors (i and j) are role equivalent to the extent that they are "identically involved in the role components tabulated in their respective triad patterns" (Burt, 1991, p. 131).

Role equivalence is determined by calculating the Euclidean distance between actors i's and j's \(d_{ij}\) respective triad patterns by using the following equation (Burt, 1991):

\[ d_{ij} = \left[ \sum (t_{ij} - t_{ij})^2 \right]^{1/2} \]

where summation is across all 36 possible types of triads (q) and "equivalence declines with increasing distance between actors i and j" (Burt, 1991, p. 131). Applied to
conflict, this calculation simply means that a central person involved in large groups experiencing conflict will not be equivalent to a central person with (the same triad pattern) involved in a small group engaged in conflict.

It must be remembered that "structurally equivalent actors have similar relations to and from every actor, so all relations from each position to every position are similar to their average, their density" (Burt, 1991, p. 145). When individuals in a network are unique and therefore not equivalent to any other actor, they are put into what is termed a residual group (Burt, 1991).

**Autonomy**

Structural autonomy is defined as the "relative ability to negotiate relations to personal advantage" (Burt, 1991, p. 9). "The key variable [in autonomy] is constraint: interlocked relations that limit ego's freedom of movement in the aggregate and with respect to each ego-alter relationship" (Burt, 1991, p. 177). In addition, range and brokerage are used to analyze structural autonomy. Range refers to the fact that communication between kinds of actors occurs over bridge (typically weak) relations" (Burt, 1991, p. 9). Therefore, an analysis of range detects those bridges between two different kinds of actors. Brokerage analysis will be used in order to define structural autonomy within the network. "Holes in social structure are entrepreneurial opportunities to promote and take advantage
of competition between contacts where the causal force lies in contact with disorganized others" (Burt, 1991, p. 8).

**Power Analysis**

Where autonomy has to deal with the freedom one has within one's network of contacts, power "concerns [one's] ability to dominate the whole system" (Burt, 1991, p. 188). Power analysis may use either individual actors or positions (equivalent groups of actors) as units for study.

Power is derived from the social concept of prominence, which results when an actor is the object of known relations from others (Burt, 1982). This concept is central to a definition of conflict as a struggle for scarce resources. Coleman (1973), in an elegant discussion of prominence and power, argued that an actor is powerful to the extent that the actor controls scarce resources valued by other powerful actors. In conflict terms the model suggests that a prominent, powerful person in a conflict network is perceived as having control over access to the valued resources motivating the conflict. Power analyses include detecting choice status, extensive relations, and exclusive relations.

**Choice Status.** Choice status is simply a count of all the alters who can reach ego. This number is then divided by the total number of actors who could have chosen ego as a
conflict partner. Choice status is thus defined by the following equation:

\[
\text{choice status of } i = \frac{\sum \delta_{ii}}{(N-1)}
\]

Choice status varies from 0 (when no one reaches i) to 1 (when everyone else reaches i). The interpretation of choice status is somewhat misleading because being the object of relations from others does not indicate if those relations with others are strong or weak (Burt, 1991).

**Extensive Prominence.** To adjust for problems associated with estimates of choice status, researchers have developed models of extensive prominence. The following equation is used to determine extensive prominence (Burt, 1991):

\[
\text{extensive relations to } i = \frac{\sum_j [z_{ij}/\max(z_{ij})]}{N-1}
\]

This equation "weights relations by their strength where \(\max(z_{ij})\) is j's strongest relation to anyone else" (Burt, 1991, p. 189) in network \(k\).

These results may also be misleading because extensive prominence does not discriminate for the amount of time and energy alters are devoting to conflict.

**Exclusive Prominence.** In order to discriminate differences in the energy among system actors devoted to relationships which result in prominence, the following equation is used:

\[
\text{exclusive relations to } i = \frac{\sum_j [z_{ij}/\sum_z z_{ij}]}{(N-1)} \quad \text{"where the bracket now contains the proportion of j's network time}
\]
and energy allocated to interaction with i" (Burt, 1991, p. 190).

**Power.** Actors are presumed to have power to the degree to which they are the objects of exclusive relations from powerful others (Burt, 1991). Power is calculated using the following equation:

\[
power \text{ of } i = p_i = \sum \left[ \frac{z_{ji}}{\sum z_{ji}} \right] p_i
\]

"...where the sum is across all N actors, including ego. The relation is a proportional strength relation from j to i. It measures the extent to which i has an exclusive relation from j" (Burt, 1991, p. 190).

**Purpose of the Study**

Since the bulk of previous research projects on conflict have employed variable-analytic models which ignore directionality and the social context in which conflict occurs, the conclusions of these studies about the effects of conflict become suspect. This study has been designed to focus on conflictive interaction and how those interactions position an actor in a network (system) and how that position affects the consequences of conflict (e.g., the conflict management method utilized and how respondents both cope and deal with conflict). The defining factor of this system, as mentioned in chapter one, is conflictive interactions concerning scarce resources. It must be noted that scarce resources, as outlined by this study, are the cause of conflict and that the conflict interactions
concerning scarce resources consequently places or embeds a person in the network. While scarce resources are not themselves a variable, this study has used them as the catalyst for conflict and, therefore, these resources are operationalized as the cause of conflict.

Thus, for this particular study, a causal model can be described as a process where scarce resources lead to conflict which in turn leads to network positioning. It is unclear at this point whether the position in a network also starts this process over again. For example, if a person’s location in a network changes, and different resources are scarce, it is unclear how that would specifically change that person’s conflict interactions and consequently the network. It seems logical that a person’s position in a system defines what a person perceives as scarce resources, however, this study does not provide a means of uncovering whether or not this is a cyclical causal model. In essence, scarce resources directly effects conflict and indirectly effects network positioning.

In summation, the dual purpose of this study is to investigate the structure of conflict relations in organizations and to define the effects of those structures on the consequences of conflict. These effects will be examined by testing the following hypotheses and research question:
H1a: There will be a significant inverse relationship between conflict tie strength and the methods of conflict management used.

H1b: There will be a significant positive linear relationship between the degree of opportunity available in conflict relationships and the methods of conflict management used.

H2a: There will be a significant inverse relationship between conflict tie strength and perceptions of how respondents cope with conflict.

H2b: There will be a significant positive linear relationship between the degree of opportunity available in conflict relationships and the perceptions of how respondents cope with conflict.

H3a: There will be a significant inverse linear relationship between conflict tie strengths and perceptions of how respondents feel after conflict.

H3b: There will be a significant positive linear relationship between the degree of opportunity available in conflict relationships and the perceptions of how respondents feel after conflict.

H4: Models of power in conflict networks will be significantly and linearly related to conflict management method, and the respondents'
perceptions of how they cope with conflict and feel after conflict. More specifically:

**H4a:** There will be a positive linear relationship between choice status and conflict management method, and the respondents' perceptions of how they cope with conflict and how they feel after conflict.

**H4b:** There will be a positive linear relationship between extensive prominence and conflict management method, and the respondents' perceptions of how they cope with conflict and how they feel after conflict.

**H4c:** There will be a positive linear relationship between exclusive prominence and conflict management method, and the respondents' perceptions of how they cope with conflict and how they feel after conflict.

**H4d:** There will be a positive linear relationship between power and conflict management method, and the respondents' perceptions of how they cope with conflict and how they feel after conflict.

**RQ1:** What effect does the directionality of conflict ties have on each of the hypotheses stated above?
CHAPTER II

METHODOLOGY

Subjects

Subjects were 140 employees and managers in four divisions of a large agency of the Federal Government located in the Southwest. There were 49 female subjects and 91 male subjects. The number of subjects is adequate to provide sufficient power for all statistical analyses done to test the appropriate hypotheses (see Tests of Hypotheses and Research Questions below).

Data Collection

Data were collected simultaneously from each employee in each of the four divisions. Each division received a scheduled time period in which all employees in that division met together in a special location. The questionnaire was administered by the researcher and the purpose of the study and instructions for completing the questionnaire were explained orally to subjects. A cover letter stating the purpose of the study also accompanied the questionnaire. Time was then allowed for subjects to ask questions about procedures and the like. The researcher remained in the room so that any individual questions which arose during the completion of the questionnaire were responded to directly.
Instrumentation

Data were collected in two formats (see the attached questionnaire in the Appendix). The questionnaire used to collect the data was negotiated and agreed to by members of the sponsoring organization. Although requests were made to gather additional data, the assessments contained in the agreed upon questionnaire are adequate to test the hypotheses and research question. The first format in which data were collected is shown on pages 1-3 of the questionnaire. This format, which was designed by Helt (1991) to permit the mass administration of data collection necessary to perform network analyses, meets all of the criteria for the collection of network data specified by Lindzey and Byrne (cited in Burt, 1991).

Subjects first received a randomly ordered list of employees in their division. Each employee had been assigned a unique number and were identified only in that way in the final report. Subjects were then asked to use this list to complete two matrices. One matrix has been designed specifically for the sponsoring organization to collect data involving task related matters and the use of structural models in issues concerning total quality management. These data were not reported in this thesis. The relational content of the other matrix is based upon conflict interactions over scarce resources in the organization. Data collected in this matrix were used in
the thesis. The order of presentation of these two matrices was randomly ordered for each subject. Subjects first listed their own numbers and then listed the numbers of the other employees with whom they interact about the specified relational content of the matrix. Subjects were able to indicate that they interacted with none of their peers in their division or as many as $N-1$ peers in their division. In the final data matrix, subjects' identification numbers are the row numbers and the numbers they listed are the column numbers. Thus, wherever subjects listed a number that row and column cell in the matrix will be coded "1" indicating a direct tie from the respondent (i) to the subject listed (j). This procedure enabled the examination of the directionality of conflict ties and the development of all other models needed to test the hypotheses and the research question.

The second format used for data collection (see pages 4-5 of the questionnaire in the appendix) followed more traditional social scientific techniques. The first seven questions were designed to collect demographic data. The next 17 questions were included to assess method of conflict management used by subjects, the perceptions of how respondents cope with conflict, and the perceptions of how respondents feel after conflict. The first five scales were adapted from Blake and Mouton (1964) by Renwick (1975). The methods are, in order of their appearance on the
questionnaire, forcing (method 1), compromising (method 2), smoothing (method 3), confronting (method 4), and withdrawing (method 5). The next 12 scales were specifically designed for this research using conflict outcomes discussed in the research literature (see Helt, 1992). Of these 12 scales, 6 scales were designed to assess how subjects coped with conflict and 6 scales addressed how subjects felt after a conflict episode.

Tests of Hypotheses and Research Question 1

All data collected in this study were analyzed using STRUCTURE 4.2, UCINET, and SPSS. The alpha level for all statistical procedures was set to .05. To enable tests of the hypotheses and research question the following analytic steps were taken.

First, conflict matrices collected in each of the four divisions were structurally analyzed separately using STRUCTURE 4.2. It should be pointed out that because all network models generated (e.g., tie strength, constraint, and power) are mathematical, grounded in graph theory, and are not probability models, they are directly comparable across all four matrices. Thus, no statistical tests of significance were needed or appropriate for making such comparisons.

Second, the reliabilities of the responses to the interval scales designed to measure type of conflict management, perceptions of how respondents cope with
conflict, and the perceptions of how respondents feel after conflict interactions were checked using K-R models. Items which decreased reliability were eliminated from further analyses before variable scores were generated.

Hypotheses 1a, 2a, and 3a were tested using measures of conflict tie strengths generated by STRUCTURE 4.2. The mean of these measures for each subject was standardized to adjust for differences in the size of personal conflict networks. The resulting standardized mean conflict tie strengths were used as predictor variables in three simple regression models. The criterion variables in each of these models were conflict management type, perceptions of how respondents cope with conflict, and perceptions of how respondents feel after conflict interactions.

Hypotheses 1b, 2b and 3b were tested using the constraint models generated by STRUCTURE 4.2. The difference between constraint imposed ($c_{ij}$) and energy invested in a conflict relationship ($p_{ij}$) equals the amount of opportunity available in that conflict relationship. Thus, these difference scores were derived for each conflict relationship each subject had, and then the mean opportunity scores for each subject were calculated. These means were standardized to adjust for the differences in personal conflict network sizes reported by each subject, and used as the predictor variable in three simple regression models, with measures of conflict management type, perceptions of
how respondents cope with conflict, and perceptions of how respondents feel after conflict interactions used as the criterion variables.

Hypothesis 4 was tested using models of choice status, extensive prominence, exclusive prominence, and power generated by STRUCTURE 4.2. Because these models for individual subjects are based upon all patterns of interaction within the matrix, they did not need to be standardized to adjust for differences due to the size of personal conflict networks. These models were used as predictor variables in three multiple regression procedures, with conflict management type, perceptions of how respondents cope with conflict, and perceptions of how respondents feel after conflict interactions used as the three criterion variables.

Research Question 1 was investigated in the following manner. The network models used to test the four hypotheses were created in two ways using either symmetric or asymmetric ties. STRUCTURE 4.2 transformed asymmetric ties to symmetric ties using the following procedure.

\[ Z_{ij} = \max(Z_{11}, Z_{1i}) \]

This procedure set \( z_{ii} \) and \( z_{ij} \) within a network to the value of whichever was stronger. A symmetric relationship between two actors existed whenever there was contact between them. Once symmetric and asymmetric models had been generated they were tested using the procedures described above.
CHAPTER III

RESULTS

In the results reported below, alpha was set to .05 for all tests of statistical significance.

Reliability Tests

Both the measures of the perceived methods of coping with conflict and the affective consequences of conflict were tested for their reliability using a split-half (odd-even) procedure. Subjects' responses to both measures were adjusted for the directionality of the wording of the items, and then the odd and even items were summed and these sums were correlated. The reliability estimates for both measures within each division ranged from .73 to .87.

Hypotheses 1a, 2a, and 3a

Hypotheses 1a, 2a, and 3a were tested using a procedure which examined the aggregate impact of the structure of network relations upon the outcomes of conflict (i.e., conflict management methods, perceptions of the effectiveness of the conflict coping techniques, and perceptions of the affective state which resulted from the conflict). This procedure is referred to as social contagion (Burt, 1992). In essence, it is a regression procedure which adjusts the linear model by weights which
reflect the proximity (and thus influence) of each alter in ego's personal network on ego's social behavior.

There are two possible methods used to define network weights. The first is based upon cohesion analysis and theoretically presumes that influence occurs as a result of the strengths of communication ties within ego's clique groups. The second is based upon equivalence, and presumes that influence occurs as a function of competition among actors who communicate with similar others. The latter method was chosen to define weights because of the relational nature of the networks used in this study and because Burt (1991) has argued that equivalence is the most effective way of defining network effects on social behavior.

Network weights are defined using the following procedures. First, ego's proximity (pr) to alters is calculated.

\[ pr_{ij} = d_{\text{max},ij} - d_{ij}, \]

where "d" is the path distance between i and j.

Second, the weights which indicate the degree of influence each alter has on ego are defined.

\[ \omega_{ij} = (pr_{ij})^v / \Sigma_i (pr_{ij})^v, \]

where the higher the value of \( \omega_{ij} \), the greater the influence of j on i. The exponent \( v \) is set to indicate the degree to which more distant alters influence ego's behavior. The higher the value of \( v \), the more influence less proximate
alters have on ego. Burt (1991) has argued that in low density networks, such as conflict networks, \( v \) be set to 1.000 so that the effect of all alters can be accounted for in determining ego's social behavior. In effect, the network weights thus become a simple proportional measure of the proximity of each of ego's alters divided by the sum of the proximity of ego to all other alters in ego's personal network. As a consequence, the aggregate network effect on ego's social behavior becomes an adjusted regression model.

\[
y_i = \alpha + \beta(y'_i) + e,
\]

where \( y'_i \) is the weighted sum of alter responses (\( \sum \omega_i y_i \)).

In network analysis, this technique has a distinct advantage over traditional regression models because the weighting procedure adjusts for any intercorrelations among the tie-strengths of relations among actors and thus compensates for potential problems caused by multicollinearity.

The concept of social contagion presumes that the relationships among network actors has a positive influence on the behavior of those actors (Burt, 1991, 1992). Thus, for example, a positive or negative attitude held by ego is assumed to be the result of positive or negative attitudes held by ego's alters. Due to the nature of conflict, however, hypotheses 1a, 2a, and 3a asserted inverse relationships between the dependent variables (\( y_i \)) and the weighted responses of alters in the network. This inverse
contagion effect will hereafter be referred to as "diffusion resistance".

The impact of diffusion resistance in hypotheses 1a, 2a, and 3a was analyzed separately for each division because the patterns of conflict relations were so distinct in each division.

**Hypothesis 1a**

The results of the diffusion resistance tests for each conflict management method for each division are reported in Figures 1-4. It was necessary to treat each method as a discrete dependent variable because Renwick (1975) defined each of these separately. As stated in Chapter II, method 1 is forcing, method 2 is compromising, method 3 is smoothing, method 4 is confronting, and method 5 is withdrawing.

As can be seen in Figures 1-4, patterns of network relations and the directionality of conflict ties (e.g., asymmetric, symmetric) had different impacts on each conflict management method. The correlations reported in each of those figures are simply the standardized values of $\beta$ ("b"). Three positive correlations were noted. Two involved method 2, compromising (asy. = .248; sym. = .170), while the third involved method 5, withdrawing (asy. = .012).

When examining all divisions each conflict management method emerges as significantly and inversely related to
FIGURE 1: Diffusion Resistance - Div. 1
Methods of Conflict Management

Values of Correlations

<table>
<thead>
<tr>
<th></th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymmetric</td>
<td>-0.668</td>
<td>-0.014</td>
<td>-0.244</td>
<td>-0.234</td>
<td>-0.042</td>
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<tr>
<td>Symmetric</td>
<td>-0.828</td>
<td>0.170</td>
<td>-0.182</td>
<td>-0.283</td>
<td>-0.209</td>
</tr>
</tbody>
</table>

Conflict Management Methods

Correlations > -0.423 are significant
Value of \( \nu \) set to 1.000
FIGURE 2: Diffusion Resistance - Div. 2
Methods of Conflict Management

Values of Correlations

Conflicts Management Methods

Correlations > -.325 are significant
Value of $n_u$ set to 1.000
FIGURE 3: Diffusion Resistance - Div. 3
Methods of Conflict Management

Values of Correlations

<table>
<thead>
<tr>
<th>Method</th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymmetric</td>
<td>-0.572</td>
<td>-0.652</td>
<td>-0.802</td>
<td>-0.253</td>
<td>-0.494</td>
</tr>
<tr>
<td>Symmetric</td>
<td>-0.337</td>
<td>-0.347</td>
<td>-0.388</td>
<td>-0.104</td>
<td>-0.190</td>
</tr>
</tbody>
</table>

Conflict Management Methods

Correlations > -0.349 are significant
Value of \( n_u \) set to 1.000
FIGURE 4: Diffusion Resistance - Div. 4
Methods of Conflict Management

Values of Correlations

Asymmetric
Symmetric

<table>
<thead>
<tr>
<th></th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymmetric</td>
<td>-0.308</td>
<td>0.248</td>
<td>-0.001</td>
<td>-0.658</td>
<td>-0.498</td>
</tr>
<tr>
<td>Symmetric</td>
<td>-0.769</td>
<td>-0.534</td>
<td>-0.074</td>
<td>-0.444</td>
<td>-0.638</td>
</tr>
</tbody>
</table>

Conflict Management Methods

Correlations $>-.423$ are significant
Value of $nu$ set to 1.000
patterns of conflict relations. Nevertheless, the strength of the relations between conflict structures and aggregate network effects on diffusion resistance differs as a function of each particular pattern of relations within divisions.

Hypotheses 2a and 3a

The results of the tests of hypotheses 2a and 3a are shown in Figures 5-8. As can be seen in these figures, the results of the tests of these hypotheses parallel the results of the test of hypothesis 1a. Across all divisions methods of coping with conflict and the affective outcomes of conflict are significantly and inversely related to patterns of network tie strengths, but differentially so within each division and as a function of the directionality of the ties.

It is interesting to note that the correlations concerning how respondents cope with conflict are altered more as a function of directionality than the correlations concerning how respondents feel after conflict. Since how respondents cope with conflict can logically affect how conflict parties feel after conflict, the argument for the inclusion of all ties, regardless of directionality, gains support.

Tests of Hypotheses 1b, 2b, 3b, 4, and Research Question 1

Because hypotheses 1b, 2b, 3b, and 4 utilized independent variables generated as a consequence of network
FIGURE 5: Diffusion Resistance - Div. 1
Conflict Outcomes

Values of Correlations

<table>
<thead>
<tr>
<th></th>
<th>COPE</th>
<th>FEEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymmetric</td>
<td>-0.809</td>
<td>0.044</td>
</tr>
<tr>
<td>Symmetric</td>
<td>0.022</td>
<td>0.276</td>
</tr>
</tbody>
</table>

Conflict Outcomes

Correlations > -0.423 are significant
Value of nu set to 1.000
FIGURE 6: Diffusion Resistance - Div. 2
Conflict Outcomes

Values of Correlations

Asymmetric
Symmetric

Conflict Outcomes

Correlations > -.325 are significant
Value of nu set to 1.000

<table>
<thead>
<tr>
<th>Asymmetric</th>
<th>Symmetric</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE</td>
<td>FEEL</td>
</tr>
<tr>
<td>-0.342</td>
<td>-0.476</td>
</tr>
<tr>
<td>-0.169</td>
<td>-0.452</td>
</tr>
</tbody>
</table>
FIGURE 7: Diffusion Resistance - Div. 3
Conflict Outcomes

Values of Correlations

Asymmetric  Symmetric

<table>
<thead>
<tr>
<th></th>
<th>COPE</th>
<th>FEEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymmetric</td>
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<td>-0.771</td>
</tr>
<tr>
<td>Symmetric</td>
<td>-0.204</td>
<td>-0.641</td>
</tr>
</tbody>
</table>

Conflict Outcomes

Correlations > .349 are significant
Value of \( \nu \) set to 1.00
FIGURE 8: Diffusion Resistance - Div. 4
Conflict Outcomes

Values of Correlations

### Conflict Outcomes

Correlations > -0.423 are significant
Value of $nu$ set to 1.000

<table>
<thead>
<tr>
<th></th>
<th>COPE</th>
<th>FEEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymmetric</td>
<td>-0.283</td>
<td>-0.308</td>
</tr>
<tr>
<td>Symmetric</td>
<td>-0.579</td>
<td>-0.211</td>
</tr>
</tbody>
</table>
structures, they were tested utilizing simple regression procedures adapted in the following ways.

First, the weighted variables generated for each actor in the tests of hypotheses 1a, 2a, and 3a were used as dependent variables. This was necessary because, as was argued above, differential patterns of relations clearly influence the responses of network actors.

Second, because the independent variables in each of these hypotheses were comparable across networks they were calculated and then the results of these calculations were combined across the networks to produce a single matrix of responses for each independent variable. Each matrix of independent variables was then regressed against each matrix of weighted dependent variables. The results of the tests of each hypothesis are summarized in Table 1.

Hypothesis 1b

Conflict opportunity relations were defined by subtracting the energy invested in each relationship by each actor from the constraint imposed on each actor by that relationship. These difference scores were then summed for each actor and treated as an independent variable. As can be seen in Table 1, Hypothesis 1b was confirmed. Each conflict management method was significantly and positively related to the amount of conflict opportunity, regardless of the directionality of the conflict ties.
Table 1

Tests of Hypotheses 1b, 2b, 3b, and 4

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Asymmetric b</th>
<th>Symmetric b</th>
<th>Dependent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity</td>
<td>.624</td>
<td>.296</td>
<td>Method 1</td>
</tr>
<tr>
<td></td>
<td>.723</td>
<td>.489</td>
<td>Method 2</td>
</tr>
<tr>
<td></td>
<td>.831</td>
<td>.395</td>
<td>Method 3</td>
</tr>
<tr>
<td></td>
<td>.783</td>
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<td></td>
<td>.619</td>
<td>.387</td>
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<td></td>
<td>.722</td>
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</tr>
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<td></td>
<td>.631</td>
<td>.444</td>
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<td>Choice Status</td>
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<td>.069</td>
<td>Method 1</td>
</tr>
<tr>
<td></td>
<td>.046</td>
<td>.072</td>
<td>Method 2</td>
</tr>
<tr>
<td></td>
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<td>Extensive Power</td>
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<td>.198</td>
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<td></td>
<td>.397</td>
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<td>Preeminent Power</td>
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</tr>
<tr>
<td></td>
<td>.711</td>
<td>.201</td>
<td>Affect</td>
</tr>
</tbody>
</table>

Note. b's > .195 are significant
It is evident from Table 1 that there is more opportunity in conflict discovered when conflict ties are analyzed asymmetrically as opposed to symmetrically. The most significant method of conflict management, method 3 (.831), or smoothing, yields the most opportunity in asymmetric conflict interactions.

In essence, by utilizing a smoothing method of conflict management, the most opportunity for gaining scarce resources is obtained. In contrast, when analyzed symmetrically, the most significant method of conflict management is method 2 (.489), or compromise. From this example, and from Table 1, asymmetric conflict methods have greater positive correlations with opportunity than does symmetric correlations. In fact, all five symmetric correlations, across the five methods of conflict management, are drastically increased when compared to the correlations for asymmetric opportunity.

Hypothesis 2b

As can be seen in Table 1, the perceived method of coping with conflict under each directional condition was significantly and positively related to the amount of opportunity available in conflict networks. Once again, in both directional conditions, the positive correlation found in the asymmetric network (.722) was more significant than the positive correlation found for the symmetric network (.679).
Hypothesis 3b

Hypothesis 3b was also confirmed. Regardless of the directionality of the ties, the amount of opportunity available in conflict relationships was significantly and positively related to the perceived affective consequences of the conflict. These findings indicate that as the degree of opportunity increases (in both directional conditions) the perceived affective consequences are positive. Thus, the more opportunity available in a network yields more positive feelings concerning conflict over scarce resources.

Hypotheses 4a-d

As can be seen in Table 1, with the exception of choice status, all of the asymmetric measures of power were positively and significantly related to conflict management methods, perceived methods of coping with conflict, and the perceived affective consequences of conflict. Neither asymmetric or symmetric models of choice status were significantly related to the dependent variables. The failure to confirm Hypothesis 4a was due to the lack of variability in the choice status measures. Choice status, as defined above, is simply a measure of the extent to which each actor is reachable by other actors. Thus, the failure to confirm Hypothesis 4a may be a Type II error.

The results of hypothesis 4b yielded the least significant results (see Table 1). As mentioned above, all asymmetric correlations proved to be significant, however,
when the network was analyzed symmetrically the correlations between extensive power and methods 2, 3, and 5 were not found to be significant. As stated in Chapter I, these results may be misleading because they did not discriminate for time and energy alters devoted to the conflict over scarce resources. In contrast to the results of conflict management methods, both dependent variables dealing with coping (asy. = 411, sym. = .329) and affect (asy. = .537, sym. = .289) were found to be significantly and positively related to extensive power regardless of directionality. Once again correlations for the asymmetric network were stronger than those for the symmetric network.

As can be seen in Table 1, all correlations involving exclusive power, regardless of directionality, have been found to be significant, thus supporting hypothesis 4c. One interesting finding is that both asymmetric and symmetric ranking of significant correlations for conflict management methods yielded the same order: confrontation (asy. = .725, sym. = .463), smoothing (asy. = .621, sym. = .396), compromise (asy. = .443, sym. = .254), forcing (asy. = .331, sym. = .236), and withdrawal (asy. = .389, sym. = .222). It must further be noted that the asymmetric correlations were still found to be stronger than the symmetric correlations concerning exclusive power. Asymmetric correlations were also found to be stronger for both dependent variables concerning how respondents cope with conflict (asy. = .396,
sym. = .271) and how they feel after conflict (asy. = .699, sym. = .327).

Hypothesis 4d was also confirmed. Preeminent power is present when actors are the objects of exclusive relations from powerful others. By looking at the correlations (seen in Table 1) one finds that, once again, there is more power existing in the asymmetric network than in the symmetric network. The order of significant correlations concerning conflict management methods also differs as a function of directionality. In addition, both of the other dependent variables, coping (asy. = .399, sym. = 362) and affect (asy. 711, sym. = .201) are positively related to power but each varies as a function of directionality.

The most unobtrusive methods of managing conflict are withdrawal, smoothing, compromise, confrontation, and forcing, in that order. It is interesting to note that, as can be seen in Table 1, the most power in the asymmetric network lies (in descending order) in using withdrawal (.805), smoothing (.777), compromise (.695), forcing (.506), and confrontation (.499). In traditional terms, power usually results in the use of the most forceful methods of conflict management. The discovery of a completely opposite order (with the exception of the last two methods reversed) is truly a unique finding.

These findings could be a result of including many subordinates' responses along with superiors' responses.
Since subordinates have been found to use more unobtrusive methods of conflict management including the responses of subordinates may have de-emphasized the powerful conflict strategies of the superiors who constitute the minority. To repeat, more power was found to exist in the asymmetric network. Therefore, it is logical that the collective power of the subordinates, who are the majority, tends to produce many preeminent powerful others, who tend to control how conflict is managed, rather than having the tone of conflict set by the minority group of superiors. Traditional research, which adjusts data to focus solely on symmetric ties, has found that superiors tend to have more power. Perhaps the findings of this study will open up new horizons for future researchers concerning the apparent hidden power of subordinates in conflict situations.

Research Question 1

The results summarized in Figures 1-8 and Table 1 demonstrate the impact and the importance of the directionality of ties on conflict outcomes. Even when both types of ties result in significant outcomes, the effect sizes \( b' \) differ considerably. Clearly, this study has demonstrated that future researches in conflictive relations must account for both the directionality of conflict ties and the impact of the patterns of those relations on different conflict outcomes.
CHAPTER IV

DISCUSSION

What is missing from extant literature, as highlighted in Chapter I, is the inclusion of all ties regardless of directionality. As seen from the results of this study, directionality plays a vital role in the study of organizational conflict. What needs to be done now is further studies either replicating this study or concentrating on other components of conflict such as incompatible goals or incompatible activities. Perhaps these future studies would lead to a more concise definition of conflict rather than many diverse definitions all addressing similar components. A concise definition of conflict would elicit a more concrete concept rather than a somewhat elastic concept of conflict.

The inverse contagion effect, diffusion resistance, was an interesting finding. What needs to be uncovered is why, when people who are structurally equivalent to each other, feel or act the opposite of each other in a conflict setting. Perhaps this idea is better left to more qualitative research. While the nature of conflict is dynamic, it is interesting to note that most subjects both felt and coped with conflict in an opposite manner than their conflict partners. Furthermore, focusing on conflict
over scarce resources may be responsible for diffusion resistance. It seems logical that, when resources are scarce, they are somewhat coveted by those who control them and, when others need access to those resources, those needing the access may be more defensive and react in an opposite manner than those who control the resources.

Perhaps parties involved in conflict punctuate the event differently. While this study did not address how parties view the others with whom they are involved in conflict, the inverse relationship is left partially unexplained. While diffusion resistance has been proven to exist, the perception of how subjects perceive their own actions studied in conjunction with how people perceive their conflict partners' actions may provide more insight into diffusion resistance. As this study has included the directionality of conflict ties (both asymmetric and symmetric), future studies should include both aspects of subjects' perceptions. While this study examined the subjects' perception of their own actions, it is equally important for future studies to include subjects' perceptions of conflict partners' actions as well.

Limitations

One limitation of this study was that the organization was only examined on one day. The questionnaire did not ask for specific instances or examples of conflict from subjects. Although the only responses required involved
subjects listing with whom they had conflict concerning scarce resources, the specifics of that conflict were not acquired. It is likely that ties existed between subjects based on different instances of conflict in their work environment. The purpose of this study did not include examining sources or topics of conflict, but uncovering specific examples of conflict across time may provide even more information concerning the nature of conflict in this organization.

Another limitation may have been that some subjects did not take the questionnaire seriously and reported only safe answers concerning who they had conflict within the organization. Due to the negative perception of conflict that often exists, participants may have felt that this questionnaire, although anonymous, would reflect on them at a later time. This limitation was minimized as much as possible through thorough explanation of the study, however, some subjects exhibited some uneasiness during the process. If time would have allowed it, the method of questionnaire completion would have been altered. Perhaps not having the whole division in one room at one time would have further minimalized response bias. Upon reflection, having the superiors in the room with their subordinates while filling out the questionnaires may have caused some hesitation in the subordinates.
Conclusions

The scales developed for this study involving how respondents addressed conflict and felt in conflict situations were derived from the review of literature. An important aspect of the present study is that these scales now have been tested. The results indicate that the scales have passed the preliminary tests of validity and reliability. This validation is an important step in the study of organizational conflict.

Directionality of ties was also proven to be important in this study. With the significant difference found between asymmetric and symmetric ties, it may be possible that researchers are not accurately examining organizational conflict. As can be seen from the results reported in Table 1 (excluding choice status), asymmetric analyses yield higher correlation of opportunity, extensive power, exclusive power, and preeminent power, than the symmetric analyses of the same variables. These results indicate that more power exists in the asymmetric system than the symmetric system. As a result, people in the asymmetric network have the power to influence the conflict more than previously was thought to be the case.

Traditional superior-subordinate symmetric research has approached how actors address conflict from the standpoint that subordinates need to be empowered in order to ratify chaotic conflict situations. Using asymmetric ties in
analyses to gain a more complete picture of organization conflict yields opposite results. It seems that addressing diffusion resistance is more critical than the concept of empowering the subordinates. The impact of the patterns of conflict on the conflict outcomes, how people address conflict and feel after conflict, has also been demonstrated and must be included in future studies. How people feel about conflict depends on how much opportunity they have in the relationship. The more opportunity, the more positively they cope with conflict.

Since conflict opportunity is a result of subtracting the time and energy invested in the relationship from the constraint imposed on the actor by that relationship, to increase the occurrence of positive coping methods, an organization where possible must decrease constraints placed on individuals. Constraints are a key factor in opportunity in conflict networks. If time and energy are increased, but the constraints remain constant, the persons involved in that relationship will not have much opportunity. Therefore, decreasing constraints is the first priority in increasing opportunity. On the other hand, if constraints are reduced and time and energy invested in that relationship are increased at the same rate, the degree of opportunity will remain constant as well.

What is needed, in an ideal scenario, is to decrease scarce resources and make them more easily attainable. An
alternative is that perceptions in an organization might change so that resources are not perceived as scarce or unattainable, or that superiors and subordinates perceive themselves as equivalent in access to resources. These changes would allow the degree of opportunity, or the perception of opportunity, to swell since the constraints would be lessened and the availability of resources would decrease the time and energy needed to acquire resources. Of course this discussion postulates an ideal situation, which normally is difficult for an organization to achieve. Perhaps future studies could concentrate on scarce resources that the organization was unaware of and that are in the organization's power to make easily attainable. Or, given the current interest in teams and total quality management, investigators might study how a group's perceptions of resources may change.

As Chapter 1 indicated, conflict may be viewed as a means of uncovering problem areas. Therefore, future research on conflict in organizations may be especially valuable if it is aimed at understanding how organizations redefine resources, modify attitudes toward resources, change patterns of interaction with respect to resources, and uncover scarce resources. This research must likely be conducted on a situational basis due to the fact that both constraints and time and energy must be understood in terms of the specific context.
However, the utility of network analysis may lie in its power to explicate both formal and informal patterns of interaction. This study has suggested that network analysis may open doorways into understanding asymmetric conflict and other previously neglected aspects of communication within organizations.
INTRODUCTION

This research project is conducted by Kimberly Helt under the guidance of Dr. H. Thomas Hurt. Ms. Helt is a graduate student working on her Master of Arts degree in the Department of Communication Studies at the University of North Texas. This survey will provide the necessary information to complete her thesis requirement for graduation.

This study is designed to look at the patterns of communication behavior typically termed conflict. Conflict usually carries a negative connotation due to the socialization process at work in the United States. Conflict is used here in a very positive light.

Technically, conflict is defined as an expressed struggle between at least two interdependent parties who perceive incompatible goals, scarce resources, and interference from the other party in achieving their goals. For the purpose of this study conflict will refer to differences in priorities, goals, objectives and needs among interdependent job positions. For example, when you are dependent on another area of the company to provide you with necessary information before you can proceed with your task, the other area may not perceive your request for that information as crucial as you do. In other words, they may not feel that answering your request is at the top of their list of priorities while it is at the top of your list of priorities.

An extensive review of literature has shown that conflict is positively related to job effectiveness and job satisfaction. Conflict is also shown to be inevitable in any interdependent system. When resources are abundant in an organization, little competition or conflicting needs for those resources occur. However, when resources are scarce, conflicting goals, needs, and priorities concerning those scarce resources are prevalent.

It must be noted that only through conflict may change occur. This makes sense because conflict tends to reveal areas that may need improving. When these areas need improvement, appropriate steps are usually taken to correct the problem and return the area to a higher level of efficiency. Usually this type of improvement consists of allocating scarce resources more effectively. This process of change through conflict allows an organization to remain responsive to its market. When the market changes, an organization will likely have to allocate their resources differently to effectively service the new market.

Basically, conflict patterns are used to determine how much constraint is placed on the various job positions within an organization. Specifically, this study looks at the constraints placed on job positions due to the lack of necessary resources or the availability of those resources. This, in no way, reflects the individual occupying the particular job position. The goal of this study is to pinpoint the optimal level of organizational conflict to determine the precise means of allocating resources and increasing organizational efficiency.

This is a confidential study and names will not be used in the final analysis. Please answer all of the questions on this survey as thoroughly as possible.

THANK YOU FOR PARTICIPATING IN THIS STUDY
To maintain confidentiality, a computer-generated random list of employees is provided below. Please use the numbers to the left of the names for your responses. When finished please destroy this page and return only pages 2, 3, and 4 to the survey coordinator.

<table>
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FROM WHOM DO YOU SEEK ADVICE ABOUT JOB-RELATED ACTIVITIES?

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<th>Consecutive list of others' numbers</th>
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Scarce resources within this organization may include, but are not limited to, a lack of time to meet deadlines, lack of information, lack of appropriate/reliable equipment (such as fax machines and telephones), lack of state-of-the-art equipment, and a lack of personnel.

**WITH WHOM DO YOU HAVE CONFLICT ABOUT SCARCE RESOURCES SIMILAR TO THE ONES LISTED ABOVE?**

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PART TWO

PLEASE CIRCLE THE APPROPRIATE NUMBERED RESPONSE WHERE APPLICABLE

(1-2) YOUR NUMBER: ___________ (3) SEX: M 1 F 2 (4-5) AGE: ___________


(7-8) LENGTH OF TIME IN CURRENT JOB/POSITION (In years: if less than one year, write in 01): ___________

(9-10) LENGTH OF TIME WITH ORGANIZATION (In years: if less than one year, write in 01): ___________

JOB TITLE: ___________

(11) YOUR SALARY RANGE (OPTIONAL): Below $10,000 1 $10,000 - $15,999 2

$16,000 - $21,999 3 $22,000 - $27,999 4 $28,000 - $33,999 5

$34,000 - $39,999 6 $40,000 - $44,999 7 $45,000 & up 8

(12) SELECT THE HIGHEST DEGREE EARNED:

High School 1 Associates 2 Bachelors 3 Masters 4 Doctoral 5

PART THREE

In general, when conflicts about scarce resources arise, any or all of the five ways listed below may be used to deal with them. For each statement, please circle the number that indicates how likely it is that you will use that way of dealing with conflicts about scarce resources that occur between you and the person(s) you specified in PART ONE.

(13) Use the power of my knowledge or position in the organization to win acceptance of my point of view. Very Unlikely 1 2 3 4 5 Likely

(14) Search for an intermediate point of view, try to find a compromise. Very Unlikely 1 2 3 4 5 Likely

(15) Play down the differences and emphasize common interests. Very Unlikely 1 2 3 4 5 Likely

(16) Bring the problem clearly into the open and carry it out to resolution, even if feelings are likely to get hurt. Very Unlikely 1 2 3 4 5 Likely

(17) Refrain from argument, try not to get involved. Very Unlikely 1 2 3 4 5 Likely
YOUR NUMBER: 

In general, when conflicts about scarce resources arise between you and the other person(s) you indicated in PART ONE, how likely are you to deal with those conflicts in the following ways?

<table>
<thead>
<tr>
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<th>Very Unlikely</th>
<th>Very Likely</th>
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<tbody>
<tr>
<td>(18) Constructively</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>(19) Reasonably</td>
<td>1 2 3 4 5</td>
<td></td>
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<tr>
<td>(20) Deceitfully</td>
<td>1 2 3 4 5</td>
<td></td>
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<tr>
<td>(21) Destructively</td>
<td>1 2 3 4 5</td>
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<tr>
<td>(22) Honestly</td>
<td>1 2 3 4 5</td>
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<tr>
<td>(23) Irrationally</td>
<td>1 2 3 4 5</td>
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In general, after you have finished having a conflict about scarce resources with one or more of the people you indicated in PART ONE, how likely are you to feel the following ways?

<table>
<thead>
<tr>
<th></th>
<th>Very Unlikely</th>
<th>Very Likely</th>
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</thead>
<tbody>
<tr>
<td>(24) Frustrated</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>(25) Relieved</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>(26) Mad</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>(27) Good</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>(28) Satisfied</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>(29) Unhappy</td>
<td>1 2 3 4 5</td>
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