Do Conflict Management Styles Affect Group Decision Making? Evidence From a Longitudinal Field Study

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This study examined the relationship between group conflict management styles and effectiveness of group decision making in 11 ongoing, naturally occurring workgroups from 2 large U.S. organizations. The major postulate of the study was that groups develop norms regarding how they will manage conflicts that carry over to affect other activities, such as decision making, even when these activities do not involve open conflict. To determine the impact of conflict management style on decision effectiveness, a longitudinal design was used that identified conflict management styles in the initial portion of each team’s series of meetings and then analyzed a group decision taken in a meeting near the end of that series. Group conflict management styles were determined using observational methods, and decision effectiveness was measured using multiple indices that tapped member, facilitator, and external observer viewpoints. Task complexity also was considered as a possible moderating variable. The findings suggest that groups that developed integrative conflict management styles made more effective decisions than groups that utilized confrontation and avoidance styles. Groups that never developed a stable style were also less effective than groups with integrative styles.

In about 40 BCE, Roman statesman Publilius Syrus wrote, “Agreement is made more precious by disagreement.” This maxim is tested when conflicts emerge in groups. In some cases, groups are able to work through conflicts successfully, and this has been said to strengthen their ability to work together in the future (e.g., Jehn,
1995; Pelled, Eisenhardt, & Xin, 1999; Walton & Dutton, 1969). In other cases, conflicts end with winners and losers or in an impasse, and this is thought to set the stage for future conflicts and to undermine cohesiveness, ultimately reducing group effectiveness (Folger, Poole, & Stutman, 1997; Pondy, 1967). However, there is little systematic evidence regarding these suppositions beyond anecdote and isolated case studies. This study attempts to address this gap in the literature through a systematic investigation of the manner in which conflict styles established early in a group’s life influence its later activities.

Most studies of conflict within groups have focused on the immediate outcomes of the conflict episode, such as decision quality, satisfaction, or commitment to the solution (e.g., Alderton & Frey, 1986; O’Connor, Gruenfeld, & McGrath, 1993; Pelled et al., 1999; Sambamurthy & Poole, 1992; Wall, Galanes, & Love, 1987; Wall & Nolan, 1986, 1987). When groups work through conflicts, however, they are not simply resolving an immediate situation; they are also establishing patterns of behavior that may apply in the future. Important in their own right, these patterns seem likely to influence distal outcomes as well.

This study utilized data gathered from long-term videotaped observation of groups in two organizations to determine how conflict management patterns established early in a group’s history influenced subsequent decision-making behavior. In addition to meeting the requirements for testing longitudinal effects, this design had the advantage of studying groups with meaningful goals embedded in organizational contexts—groups subject to the various exigencies Putnam and Stohl (1996) identified in their discussion of bona fide groups.

The following sections define our constructs and develop a hypothesis regarding the influence of conflict management styles on group decision-making effectiveness; this is followed by a consideration of task complexity as a moderating variable. Following this, we describe the methods used in the study and the results we obtained.

Group Conflict Management Styles

A common approach to studying conflict in group and organizational settings is to use the individual as the unit of analysis. From Thomas and colleagues’ influential perspective (Ruble & Thomas, 1976; Thomas, 1976; Thomas & Kilmann, 1978), an individual’s conflict style is a behavioral orientation and general expectation about one’s approach to conflict. This conception of conflict style does not preclude the individual from changing styles or enacting behaviors not typically associated with a particular style, but asserts that individuals choose (though often not consciously) a pattern of principles to guide them through episodes of conflict. These
patterns of principles are translated into actions and reactions that can be conceived of as a "style." Following Thomas (1976) and Folger et al. (1997), conflict management style is defined here as a general and consistent orientation toward the other party and the conflict issues, manifest in observable behaviors that form a pattern and share common characteristics over time. Thus, observable interaction is central to the definition of conflict style.

Although several schemes exist for classifying conflict management style, the categories of avoidance, distributive, and integrative styles are the most replicated and easily understood (Folger et al., 1997; Jarboe & Witteman, 1996; Sillars, Colletti, Parry, & Rogers, 1982; Wall & Nolan, 1987). Avoidance describes behavior that serves to minimize addressing the conflict explicitly (Sillars et al., 1982), either ignoring it or quickly shifting conversation to a different issue; it is both unassertive and uncooperative. A distributive style is a confrontive approach that results in one side conceding to the other. Putnam and Wilson (1982) state that tactics commonly used to resolve disagreements in this style include (a) directive communication about the issue, (b) persistent argument for one's own position, and (c) an attempt to take control of the interaction. Finally, an integrative style is one in which parties employ cooperative behaviors intended to pursue mutually favorable resolutions (Walton & McKersie, 1965). Integrative conflict management implies an attempt to come to the best (or at least an acceptable) solution for all concerned parties. The attention for the present purposes, then, is on conflict management rather than conflict resolution, as individuals or groups may make valiant efforts to arrive at an ideal solution, but find that some suboptimal outcome must be accepted (Poole, Holmes, & DeSanctis, 1991). Integration is best conceived in terms of the process used in confronting and working through the conflict, even if it ends in a less-than-ideal resolution.

Conflict management styles have generally been studied as individual characteristics or tendencies. Here we will consider conflict style at the group level, as a typical interaction pattern a group enacts when members deal with oppositions and disagreements. Previous studies have shown the utility and feasibility of identifying group conflict styles (Poole & Roth, 1989a, b; Sambamurthy & Poole, 1992), which should be embodied in group norms about how to handle disagreements. Bettenhausen and Murnighan (1985) discussed norms as emerging from members’ “scripts” concerning how the group should respond to tasks or problems; their analysis suggests that group conflict management styles should emerge as norms from an interplay among members’ individual conflict management styles. For instance, a six-person group composed of four members who generally enact integrative conflict management styles and two avoiders might develop a norm favoring avoidance if one of the avoiders “goes ballistic” when confronted with a particular threatening
situation. The process of norm formation is complex and depends on the particular combination of individual styles that exists in a group and on the resources available to members to influence others to adopt and maintain a particular stylistic choice. Kuhn (1998) reports a number of detailed case studies of how group conflict management norms evolve that suggest that norm formation is a product of the particular skills of members and of the exigencies of the group situation, rather than a simple, formulaic combination of individual styles.

As group conflict management styles are enacted, they should reinforce the norms that support them (Bettenhausen & Murhnighan, 1985; Poole, Seibold, & McPhee, 1996), embedding these norms more firmly into group structures. As these norms become more firmly established and sedimented, they should articulate with other norms not related to conflict management. This, in turn, should increase the tendency to draw on them in situations that do not have overtones of conflict. This process of normative articulation and integration helps provide an explanation of the influence of conflict management styles on activities such as decision making.

That group conflict management styles emerge as norms during group interaction suggests guidelines for measuring them. The most obvious approach—to ask members to identify their group conflict management norms—does not seem especially workable in view of the fact that people are often unaware of the norms that guide their behavior (Garfinkel, 1967; Goffman, 1959). Moreover, participant identification of group conflict styles is likely to be contaminated by perceptions of members’ individual styles, as members are likely to attribute incorrectly their own individual style to others (Thomas & Pondy, 1977). These considerations suggest that a better way to determine group conflict management style is to observe group interaction (Poole, 1983; Poole & Roth, 1989a). Conflict management style will tend to generate a more-or-less consistent pattern of behavior and, therefore, allow it to be inferred from behavioral observation.

Influence of Conflict Management Styles on Decision-Making Effectiveness

When decisions involve open conflict, a group’s conflict management style is likely to exert a direct influence on its decision making. Additionally, conflict management patterns may exert two types of indirect influence on decision making, even when that decision making does not involve open opposition. First, many of the same skills and operations involved in managing conflicts come into play when groups make decisions. Groups must entertain alternatives, respond to others’ objections, work out compromise positions, and coordinate collective action, among
other behavior. Norms that evolve during conflict episodes seem likely to influence these interactions. Second, a group’s conflict management style may affect relationships among members by influencing the communication climate as well as the roles members assume.

Investigations of conflict during decision making suggest some specific ways in which this relationship between conflict management and decision making might occur. Putnam (1986) argued that a conflict managed effectively can improve decision making by “expanding the range of alternatives, increasing close scrutiny of decision options, fostering calculated risks and enhancing cohesiveness. When managed ineffectively, conflict results in dysfunctional behaviors and low group productivity” (p. 177). In like manner, Sambamurthy and Poole (1992) noted that the effectiveness of decision making depends on a group’s ability to (a) extract a range of competing interpretations about the issues in the decision context, and (b) synthesize these interpretations into a decision acceptable to the entire group. Thus, conflict management is of great importance in decision making, because members’ competing interpretations must be “handled in a way that diverse perspectives are not stifled, members’ commitment is maintained, and group cohesiveness is built” (p. 225). These analyses suggest that both distributive and integrative conflict management styles will result in decision making outcomes that are superior to those obtained with the avoidance style, because these styles surface diverse perspectives and interpretations, whereas avoidance does not. Further, an integrative conflict management style should result in outcomes superior to the distributive style, because it involves more open discussion (Poole & Roth, 1989b; Putnam, 1986) and more cooperation among members (Pood, 1980; Sillars et al., 1982, Wall & Nolan, 1987), which should help the group in synthesizing information to derive a common solution.

Distinguishing the caliber of various decision-making outcomes in natural groups is no simple task, however. Thus, our conceptual definition of decision-making effectiveness incorporates both performance and subjective outcomes (McGrath, 1984). Performance outcomes are those that can be consensually measured, such as the number of widgets a group assembles or the assessment of decision quality made by an outside observer. Subjective outcomes, on the other hand, are measured in relation to such constructs as member satisfaction with the product or process. There is some evidence that group members judge the effectiveness of decisions on the basis of the group process; that is, if their group process resembles what they believe a good decision-making group should do, they rate the decision making as effective (Gladstein, 1984). Even acknowledging this bias, however, it would be rash to completely reject member evaluations of their decisions. A combination of insider and outsider perspectives is likely to provide a superior conceptualization of effectiveness, because it could consider the multiple
motivations members may hold as well as evaluations made by outsiders.

The functional theory of group decision making (Gouran & Hirokawa, 1996; Gouran, Hirokawa, Julian, & Leatham, 1993; Hirokawa & Scheerhorn, 1986; Mayer, 1998; Pavitt, 1994) explains how interactional norms formed in conflict situations can influence decision making, even when decisions do not involve conflict. Functional theory posits that “group interaction affects decision-making performance by directly shaping the quality of vigilance (or critical thinking) that leads to a final group choice” (Hirokawa & Rost, 1992, p. 269). Vigilance depends on fulfilling the following functions: (a) analyzing the problem, (b) establishing goals and objectives, and (c) evaluating positive and negative qualities of solutions or options. Clearly, interaction patterns fostered by the various conflict styles can either promote or inhibit these three functions. Developing either an integrative or distributive style will cultivate the group’s ability to surface key issues, which should contribute to problem analysis and critical evaluation of options. An integrative style should help the group establish interactional norms that promote inclusive, consensual goal-setting and the ability to analyze problems and propose solutions through a critical discussion that incorporates several perspectives, and therefore fosters positive subjective and performance outcomes. In contrast, a distributive style should promote norms that militate against collaborative goal setting and analysis, because it creates a “win-lose” mindset. Avoidance is likely to inhibit all three functions because it encourages suppression of differences and either fast, unreflective decisions or indecisiveness. Hence, we posit the following hypothesis:

H1: Groups with an integrative conflict management style will have the highest level of effectiveness in their decision-making activities; groups with a distributive conflict management style will be moderately effective; groups with an avoidance conflict management style will be least effective.

This hypothesis focuses on “main effects” of conflict style. However, the norms promoted by different styles will be brought to bear in specific contexts, so it is necessary to consider the moderating properties of task.

A Moderator: Task Complexity

Task complexity is a composite variable defined by the number of goals the group has, the number of paths that can be taken to achieve those goals, and the amount of cooperation among members required to carry out the task. Highly complex tasks are those that contain a large number of goals, many paths to achieve those goals, and demand high levels of cooperation because of the great amount of equivocal information given
to the group (Driver & Streufert, 1969; Weick, 1979). Poole and Roth’s (1989b) contingency model posited that task complexity would affect decision development by influencing (a) the sequencing of group activity, (b) the complexity of decision-making interaction, which refers to a group’s re-cycling through decision-making phases and experiencing interruptions, and (c) the degree of disorganization of group interaction. Poole and Roth found that an organized, linear decision path resulted when groups faced intractable, high complexity tasks, whereas group decision paths were less organized for lower complexity tasks and more favorable internal group situations. They interpreted this to indicate that complexity encourages groups to focus on the task at hand and to pay more attention to keeping work organized. In a related analysis, Wright (1975) argued that task complexity and decision-making effectiveness were related in a curvilinear fashion, forming an inverse “U” graph. Segal (1982) found some support for this contention: In her groups, decisions tended to be less efficient and effective if the task was either too simple or too complex, and most effective if the task was moderately complex. Together, these findings suggest that groups behave differently under different levels of task complexity.

It seems likely that varied combinations of task complexity and conflict management style may influence the fulfillment of the functions required of effective decision-making processes. For example, a group undertaking a low to moderate complexity task is relatively unconstrained by the task, and its “natural” tendencies are likely to emerge in interaction. In such cases, the relationship described in H1 would be expected to determine decision-making effectiveness because the group’s typical norms will guide the decision process. In contrast, a group facing a high complexity task will be forced to focus on the pressing matters at hand. Such a group might be less likely to fall back on existing routines, habits, and norms; it would likely devote its energy to planning its attack on the problem and monitoring and organizing its discussion more self-consciously. As a result, the typical norms formed through management of previous conflicts are less likely to be in force for high complexity tasks than for low complexity tasks. In short, the relationships described in H1 might not hold for high complexity tasks, because previously established norms would not influence group interaction as strongly. This is a rather tentative expectation at this point, so we pose it as a research question:

RQ1: What is the relationship among the level of task complexity, conflict management style, and group decision-making effectiveness?

To investigate the hypothesis and the research question, a study combining quantitative and qualitative procedures was employed. The next section explains this design in greater detail.
METHOD

Overview

The study’s design employed direct observation of established groups over a considerable period of time. Three issues motivated our design choices. First, we needed to study groups that had sufficient history to have developed norms such as stable conflict management styles. Second, it was important to ensure that group conflict management style and decision-making effectiveness were measured independently of each other. This required a rather long series of meetings, so that we could use the first half of the series to identify group conflict style and then sample a decision meeting from meetings toward the end of the series. Third, because group conflict management style was a characteristic of the group as a whole (rather than a sum of members’ individual styles), we needed to be able to observe group interaction directly.

The requirement for multiple sessions stretching over months or years made a laboratory study impracticable, so we used data from a field study that videotaped group meetings in their natural context. We studied established groups that engaged in a full range of activities and worked on specific goals for a period of time ranging from 8 to 20 months. Using ongoing as opposed to contrived groups had the additional advantage of increasing external validity.

The Sample

The participants in this study were members of 11 groups in two large organizations; a description of each group and the meetings sampled appears in Table 1. These groups usually met twice monthly, with meeting duration averaging 2 hours. Each met for a minimum of 1 year, and at least 15 audio- or videotaped meetings existed for each team. For each group, at least four episodes of conflict were selected from the recorded meetings, as was one meeting in which a decision was made. The conflict episodes were spaced over the first half of the study (see Table 1) to ensure that observations of conflicts were likely to tap into habitual patterns established over time. The decision meeting was sampled well after the final conflict meeting.

Both organizations were involved in quality improvement programs in which small decision-making groups played a significant role. The first organization, “ABC,” is a large branch of the U.S. government; the division studied here is located in a single metropolitan district. Each ABC quality team was an ad hoc group, assembled to address a particular problem. Members volunteered for the quality improvement program, and
TABLE 1
Description of the Teams in the Study

<table>
<thead>
<tr>
<th>Group</th>
<th>Task or purpose</th>
<th>Leadership</th>
<th>Members’ positions</th>
<th>Meetings sampled for conflict style</th>
<th>Meeting sampled for decision making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aries</td>
<td>To improve accounts receivable automation program</td>
<td>Appointed by team</td>
<td>Mid-level, some manager and supervisor</td>
<td>1 week, 6 weeks, 11 months, 12 months</td>
<td>19.5 months</td>
</tr>
<tr>
<td>Cancer</td>
<td>To reduce inappropriate customer referrals to walk-in service area</td>
<td>Appointed by QC, never changed leader</td>
<td>Only one with direct knowledge; others from many divisions</td>
<td>1 week, 4 weeks, 5 weeks, 8 weeks</td>
<td>8.5 months</td>
</tr>
<tr>
<td>Taurus</td>
<td>To improve the Information Service Division’s (ISD) customer service</td>
<td>Appointed by team</td>
<td>Director of ISD, top managers from ISD, union representative, some members from other divisions</td>
<td>2 months, 2.5 months, 3.5 months, 5 months, 7 months</td>
<td>17 months</td>
</tr>
<tr>
<td>Gemini</td>
<td>To address problems in internal mail delivery</td>
<td>Originally appointed by QC, never changed by team</td>
<td>Mid-level managers; some salaried employees without supervisory responsibility</td>
<td>1 week, 7 weeks, 8 weeks, 11 weeks, 6 months</td>
<td>12 months</td>
</tr>
<tr>
<td>Leo</td>
<td>To analyze new employee training as conducted by “On-the-Job” trainers</td>
<td>Appointed by team</td>
<td>Most mid-level managers; a few members without supervisory responsibility</td>
<td>3 weeks, 9 weeks, 11 weeks, 6 months</td>
<td>12 months</td>
</tr>
<tr>
<td>Virgo</td>
<td>To improve processing of unpaid agreed accounts receivable deficiencies in collections division</td>
<td>Appointed by team, but chair rotated among team members</td>
<td>Mid-level managers; some members without supervisory responsibility</td>
<td>9 weeks, 13 weeks, 15 weeks, 7 months</td>
<td>11 months</td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Group</th>
<th>Task or purpose</th>
<th>Leadership</th>
<th>Members’ positions</th>
<th>Meetings sampled for conflict style</th>
<th>Meeting sampled for decision making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Libra (ABC)</td>
<td>To improve the performance review process for accounts receivable employees</td>
<td>Appointed by QC, not changed by team</td>
<td>3 supervisors with direct task experience; others in many divisions</td>
<td>1 week, 3 weeks, 5.5 months, 9 months</td>
<td>14.5 months</td>
</tr>
<tr>
<td>Scorpio (ABC)</td>
<td>Improve the handling of “Personnel Files” in the Human Resources (HR) department</td>
<td>Appointed by QC, not changed by team</td>
<td>Included former chief of HR; union and management members from many divisions</td>
<td>3 weeks, 5 weeks, 2.5 months, 4.5 months</td>
<td>8 months</td>
</tr>
<tr>
<td>Aquarius (XYZ)</td>
<td>Oversaw all subgroups in Organizational Technologies Group (OTG); administrative duties (team direction &amp; resource allocation)</td>
<td>Appointed by organizational structure: Leader was director of OTG</td>
<td>OTG’s top managers and manager of each subgroup within OTG</td>
<td>2 weeks, 6 weeks, 2 months, 7 months</td>
<td>9 months</td>
</tr>
<tr>
<td>Capricorn (XYZ)</td>
<td>In charge of automating computer operations at three remote data centers</td>
<td>Appointed at beginning of project</td>
<td>Leader was only member with supervisory responsibility outside of team</td>
<td>1 week, 2 weeks, 7 months, 8 months</td>
<td>12 months</td>
</tr>
<tr>
<td>Pisces (XYZ)</td>
<td>To provide information and direction to XYZ regarding networking technologies</td>
<td>Appointed by OTG structure</td>
<td>Leader was one of top managers in OTG; no others had supervisory responsibility</td>
<td>1 week, 6 months, 6.5 months, 7 months</td>
<td>8.5 months</td>
</tr>
</tbody>
</table>

NOTE: Teams are listed by task or purpose, type of leadership, member level in the formal structure of the organization and responsibility, the length from the study’s commencement that conflict episodes were sampled, and the length from the study’s commencement that the decision meeting took place. In parentheses under each team name is the organization from which the team was drawn.
teams were heterogeneous in terms of functional areas and organizational experience. In general, the structures influencing interaction were similar across teams, and were typical of large-scale quality improvement programs (DeSanctis, Poole, Desharnis, & Lewis, 1992). After completion of (or failure to complete) a task, teams usually disbanded, though some continued with decision implementation.

The second organization, “XYZ,” is one of the largest publicly-held corporations in the world, and is considered representative of other major U.S. corporations (DeSanctis, Poole, Dickson, & Jackson, 1993). Data for this study were collected from a unit within the Organizational Technology Division responsible for implementation and use of information technologies. From its inception, XYZ’s quality program was intended to help ongoing, intact work groups and committees engage in participative and structured decision making. Each team used the quality process to define a set of outputs and measure the quality of those outputs.

In both organizations, the quality process included a facilitator assigned to help each team achieve the goals of the quality program. At ABC, facilitators were either regular ABC employees or one of the two quality coordinators (appointed by a “Quality Council,” or QC), and often took an active role by directing teams’ appropriation of the quality program. At XYZ, the facilitators were much less active. Members of the human resources department, they rarely contributed to discussion to avoid undermining the team leader’s formal authority.

Team meetings at both sites were videotaped using cameras mounted near the rear ceiling of a common meeting room. Participants seemed somewhat self-conscious because of the taping during the first few meetings, but after a short time they no longer appeared to be affected by our recording. That the taping did not bother the groups significantly is evidenced by the fact that the members engaged in joking, gossip, and conflict behavior that is characteristic of natural organizational groups, yet is generally “edited out” when outsiders are present. In addition to the taping, members filled out questionnaires at the end of most meetings.1

Data were collected in two phases. In the first phase, we identified at least four separate meetings in which an episode of conflict occurred by reviewing recorded meetings and by analyzing notes on group interaction prepared for a previous study. Of the 47 episodes identified in this study, 45 were on videotape and 2 were on audiotape. Three observers, working independently—two of them blind to the hypothesis and research question—viewed the meetings within which the conflict episodes occurred. They were first asked to verify the existence of the conflict episode by indicating when it began and ended. They then coded the type of conflict management approach evident, following procedures described in the measurement section.
In the second phase, meetings in which teams made meaningful decisions were identified and evaluated. Meaningful decisions were defined as those that would exert substantial influence over the group’s future interaction, either through completion (or approaching completion) of a stage in the quality process or through achieving closure on a strategic direction for the team. To identify meetings in which teams made significant decisions of this sort, we viewed videotaped meetings and examined the notes prepared by researchers on a previous project. After identifying a “decision meeting,” the first author and one other coder (who was blind to the purposes of the study), working independently, viewed each meeting in its entirety. Across the 11 meetings, there was a complete agreement between coders on the existence of a meaningful decision, as specified in our definition. Following this, both observers completed questionnaires assessing decision making and task complexity, as described below.

Measurement

Group conflict management style. Group conflict management style was identified by determining how conflict was handled on at least four separate occasions (following Wall et al., 1987) over at least 4 months. The shortest time elapsed between the first and last observed conflict was 7 weeks; the average length was 5.8 months (see Table 1). The degree of consistency in style exhibited over these episodes gave us an indication of whether a consistent conflict style characterized the group and, if so, what that style was. This observational approach guards against the social desirability bias that would occur if participants were asked to identify their own conflict styles (Canary & Spitzberg, 1987).

To ensure systematic analysis, the coding process was partitioned into three steps: (a) identification of four or more significant episodes of conflict, (b) coding the group’s response to the conflict in each episode, and (c) analysis of patterns in the coding across episodes to identify group conflict management style, if one existed. To undertake the first step, the coders were trained in the rules for defining conflict episodes from the Group Working Relationships Coding System (GWRCS; Poole & Roth, 1989a, Sambamurthy & Poole, 1992), and then were presented with a short description of the group, its overall task, and the context of each episode. These descriptions were written in a factual, neutral style to minimize response bias. Coders then viewed the taped conflict episodes and indicated whether they observed an opposition in the recorded sequence and the point at which the conflict ended. Cohen’s kappa was used to estimate unitizing reliability for the identification of conflict episodes.² Employing a conservative definition of agreement (unanimity across the three coders), kappa was calculated as a satisfactory .95.
In the second step, coding conflict management approach for each separate episode, three independent coders, working separately, applied the GWRCS to each episode of conflict to identify group approaches to conflict. The unit of coding is a short segment of group interaction (one minute in this case; episodes were thus composed of many units). In the GWRCS, a conflict episode is defined to be initiated by the expression of a disagreement, or opposition, during which there is the formation of opposing sides, and the group is faced with a choice between these sides. An episode of conflict continues as long as the group’s interaction pertains to the original issue. The episode ends when the opposition dissipates, through (a) a win-lose settlement, indicated by capitulation (a distributive approach), (b) tabling the conflict (an avoidance approach), or (c) coming to a mutually agreeable solution through open discussion (an integrative resolution). Scott’s (1955) \( Pi \) was computed at .92, indicating that reliability was acceptable.

The third step was analysis of the pattern of conflict management approaches across episodes to determine whether groups had characteristic conflict management styles. In this analysis, the coding was supplemented by information derived from in-depth case studies of each group reported in Kuhn (1996). Three criteria were used to make judgments on group conflict styles. First, we determined each team’s most frequently chosen conflict response based on the coding. This gives a rating of style operationalized as the group’s most common approach to conflict. The second criterion was the team’s change in style, or evolution, over time. Studies of group development, such as Tuckman (1965), Schutz (1966), LaCoursiere (1980), Whee lan (1994), and Franz and Jin (1995) show that groups and their communication patterns change and consolidate as they develop. On the basis of this research, we would expect that groups might develop a characteristic conflict management style by evolution through the episodes. If a team used a style consistently in its last episodes, and if the set of episodes indicated a developmental pattern, then the style exhibited in later stages was considered the team’s characteristic style. Finally, we considered the significance of the issues causing the conflicts, assessed in the case studies for each conflict episode. Significance was defined as the importance of the issue to the team’s overall task achievement or to its effective functioning as a team. Groups would be expected to pay greater attention to the conflict when the issues were highly important, suggesting that important episodes are more meaningful indicators of the team’s conflict style.

These criteria are listed in their order of precedence in making classifications of conflict style. Preliminary classifications were made based on the first criterion; following this, the second and third criteria were used to check the initial classification and to alter it if necessary. Finally,
the case studies were searched for confirming or disconfirming information. Overall, this process provided a more holistic and detailed account of conflict management than would be available by simply examining the proportion of conflicts resolved in a given manner (see Table 2 for results).

*Decision-making effectiveness.* In line with our attention to both performance and subjective outcomes, we operationalized this variable by combining information from three sources—member, quality program facilitator, and external observer (a researcher)—to create an overall evaluation of the decision-making session. Before describing how they were combined to assess decision-making effectiveness, we will provide more detail on each of the seven measures.

(1) **Member GRQ.** A 29-item Group Reaction Questionnaire (GRQ) asked members to evaluate their decision meeting at the conclusion of meetings (see Appendix A). A factor analysis indicated that all items loaded on one dimension, labeled “perceived effectiveness.” All items were used to compute an average on the team’s overall score across members. Cronbach’s alpha for the GRQ ratings by members was .79. A standard for GRQs averaged across teams from each organization was used to classify the meeting as positive (1 standard deviation above the mean), neutral (within ±1 SD from the mean), or negative (1 or more SD below the mean).

(2) **Member Quick Poll.** After some meetings, members answered two questions that assessed satisfaction with the outcome of their meeting and satisfaction with the group’s overall progress, independent of their perceptions of processes in the group. Averages for the group were computed for the meeting and compared to the mean for all groups in the sample to classify meeting outcomes as positive, neutral, or negative. To assess reliability, we computed an inter-item correlation across members on the two questions. The result of this indicated that members were consistent in their responses to the quick poll questions (r = .57, p < .01, N = 29).

(3) **Member Comments.** After most meetings, members critiqued their meeting; these were offered orally, recorded on videotape, and transcribed. They were then classified as positive, neutral, or negative by the two authors who, working independently, achieved 94.11% agreement.

(4) **Facilitator GRQ.** The GRQ was also given to facilitators at the end of meetings; these were classified as positive, neutral, or negative, as described above. Factor analysis again indicated a single dimension. Cronbach’s alpha for the facilitator ratings on the GRQ was .77.

(5) **Facilitator Comment.** Facilitators often (but not always) participated in the critique session at the conclusion of team meetings. Comments were transcribed and coded as positive, neutral, or negative. The authors made these classifications independently and achieved 88.89% agreement.
### TABLE 2
Conflict Management Styles by Team and Episode

<table>
<thead>
<tr>
<th>Team</th>
<th>Episode 1</th>
<th>Episode 2</th>
<th>Episode 3</th>
<th>Episode 4</th>
<th>Episode 5</th>
<th>Episode 6</th>
<th>Conflict style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aries</td>
<td>Avoidance</td>
<td>A-I*</td>
<td>Avoidance*</td>
<td>Distributive*</td>
<td></td>
<td></td>
<td>Avoidance</td>
</tr>
<tr>
<td>Taurus</td>
<td>Integrative</td>
<td>Avoidance*</td>
<td>Integrative</td>
<td>I-D</td>
<td>Integrative*</td>
<td></td>
<td>Integrative</td>
</tr>
<tr>
<td>Gemini</td>
<td>Integrative</td>
<td>Integrative*</td>
<td>Distributive</td>
<td>Avoidance</td>
<td>Distributive*</td>
<td></td>
<td>Distributive</td>
</tr>
<tr>
<td>Cancer</td>
<td>Distributive</td>
<td>Distributive</td>
<td>Integrative</td>
<td>D-I*</td>
<td></td>
<td></td>
<td>Integrative</td>
</tr>
<tr>
<td>Leo</td>
<td>Integrative</td>
<td>D-A*</td>
<td>Integrative*</td>
<td>Avoidance</td>
<td></td>
<td></td>
<td>Mixed</td>
</tr>
<tr>
<td>Virgo</td>
<td>Integrative*</td>
<td>Distributive</td>
<td>Avoidance</td>
<td>Integrative*</td>
<td></td>
<td></td>
<td>Integrative</td>
</tr>
<tr>
<td>Libra</td>
<td>D-A*</td>
<td>Distributive*</td>
<td>Distributive</td>
<td>Avoidance*</td>
<td></td>
<td></td>
<td>Distributive</td>
</tr>
<tr>
<td>Scorpio</td>
<td>Integrative*</td>
<td>Distributive</td>
<td>Distributive</td>
<td>Avoidance*</td>
<td></td>
<td></td>
<td>Mixed</td>
</tr>
<tr>
<td>Capricorn</td>
<td>Distributive</td>
<td>Avoidance</td>
<td>Integrative</td>
<td>Avoidance</td>
<td></td>
<td></td>
<td>Avoidance</td>
</tr>
<tr>
<td>Aquarius</td>
<td>I-A*</td>
<td>Integrative*</td>
<td>Distributive*</td>
<td>Integrative</td>
<td></td>
<td></td>
<td>Integrative</td>
</tr>
<tr>
<td>Pisces</td>
<td>Distributive</td>
<td>Avoidance</td>
<td>Distributive</td>
<td>Distributive*</td>
<td></td>
<td></td>
<td>Distributive</td>
</tr>
</tbody>
</table>

NOTE: When only one style was assigned to an episode, the code is written out in full; for episodes coded as “mixed,” only the letter corresponding to the beginning and secondary style is shown. D-A, therefore, indicates first distributive, then avoidance. Episodes judged to be highly significant to the groups are marked with an asterisk.
(6) **Observer GRQ.** Two external observers viewed the videotape of each decision meeting and then completed this measure. As with the other raters, observers’ GRQ scores were classified as positive, neutral, or negative. Cronbach’s alpha was .63.

(7) **Observer Comments.** Observers followed a common protocol for making summary judgments and comments about meeting effectiveness, designed for a previous study. These comments were independently classified as either positive, negative, or neutral by the authors; the rate of agreement was 91.52%.

The evidence that ratings of group effectiveness may be influenced more by group process than by direct consideration of outcomes raises the question whether the data on decision-making effectiveness are confounded with the processual aspects of conflict style. To minimize this threat to validity, several steps were taken in the design of the study. First, the decision-making meeting was chosen to occur at least 1 month (and in most cases many months) after the meetings in which conflict management style was measured, helping to prevent cross-contamination between conflict and decision measures. Second, we relied most heavily on external observers’ ratings in deriving the overall assessment of decision-making effectiveness, because facilitators and members of the groups seemed especially likely to be sensitive to group stylistic tendencies. A rationale for this was provided by Kacen and Rozovski (1998), who found external observers’ evaluations to be more valid and reliable indicators of group efficacy than those of either members’ or direct observers. Third, to ensure independent coding of the conflict management and decision-making variables, different coders were used for the coding of conflict management and decision making (with the exception of the first author, who coded both conflict and decision-making sessions).

Table 3 displays the values of each of the seven measures for the 11 groups. The lack of a consistent pattern among the various measures across the set of 11 decisions suggests that measures were independent of each other. This lack of correlation among the seven measures also suggests that no implicit theory held across members, facilitators, and external observers. In view of this lack of pattern, it seems justifiable to conclude that groups receiving positive ratings across a number of measures had performed decision-making functions well and that groups that received negative ratings performed decision-making functions poorly. Those with a mixed set of classifications were placed in a “mixed” category.

Using as many of these seven measures as were available for each decision meeting, we derived a composite evaluation of each team’s decision-making effectiveness. If a majority of the available measures was rated as positive (as described above), the team’s overall decision making was classified as **good**; if a majority was rated as negative, the team’s
<table>
<thead>
<tr>
<th>Team and conflict style</th>
<th>Member GRQ quick poll</th>
<th>Member comments</th>
<th>Facilitator GRQ</th>
<th>Facilitator comments</th>
<th>Observer GRQ</th>
<th>Observer comments</th>
<th>Measure of long-term effectiveness</th>
<th>Overall effectiveness classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aries - Avoidance</td>
<td>-</td>
<td>Positive</td>
<td>5.4</td>
<td>Positive</td>
<td>3.84</td>
<td>Negative</td>
<td>Team disbanded</td>
<td>Mixed</td>
</tr>
<tr>
<td>Cancer 6.95</td>
<td>Positive</td>
<td>Positive</td>
<td>6.7</td>
<td>Positive</td>
<td>4.03</td>
<td>Neutral</td>
<td>Achieved solution; “success story”</td>
<td>Good</td>
</tr>
<tr>
<td>Taurus 6.8</td>
<td>Positive</td>
<td>Positive</td>
<td>5.5</td>
<td>-</td>
<td>4.93</td>
<td>Positive</td>
<td>Presented a solution to QC</td>
<td>Good</td>
</tr>
<tr>
<td>Libra 4.76</td>
<td>3.8 / 3.5</td>
<td>Positive</td>
<td>-</td>
<td>Positive</td>
<td>3.96</td>
<td>Neutral</td>
<td>Not available</td>
<td>Good</td>
</tr>
<tr>
<td>Scorpio Mixed</td>
<td>-</td>
<td>Positive</td>
<td>4.0 / 3.7</td>
<td>Positive</td>
<td>3.67</td>
<td>Neutral</td>
<td>Not available</td>
<td>Mixed</td>
</tr>
<tr>
<td>Leo 5.94 Mixed</td>
<td>Neutral</td>
<td>5.1</td>
<td>Neutral</td>
<td>Negative</td>
<td>3.29</td>
<td>Negative</td>
<td>Disbanded soon after decision meeting</td>
<td>Mixed</td>
</tr>
<tr>
<td>Gemini - Distributive</td>
<td>3.7 / 3.8</td>
<td>Negative</td>
<td>-</td>
<td>Negative</td>
<td>3.20</td>
<td>Negative</td>
<td>Never defined</td>
<td>Bad</td>
</tr>
<tr>
<td>Virgo 6.11 Integrative</td>
<td>Positive</td>
<td>Positive</td>
<td>4.4</td>
<td>Positive</td>
<td>4.54</td>
<td>Positive</td>
<td>Good problem statement; proposed a solution to QC</td>
<td>Good</td>
</tr>
<tr>
<td>Pisces - Distributive</td>
<td>3.5 / 3.5</td>
<td>Neutral</td>
<td>-</td>
<td>Negative</td>
<td>2.95</td>
<td>Negative</td>
<td>Not available</td>
<td>Bad</td>
</tr>
<tr>
<td>Capricorn - Avoidance</td>
<td>2.0 / 3.3</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td>3.47</td>
<td>Neutral</td>
<td>Not available</td>
<td>Mixed</td>
</tr>
<tr>
<td>Aquarius - Integrative</td>
<td>3.0 / 3.0</td>
<td>Negative</td>
<td>-</td>
<td>-</td>
<td>3.95</td>
<td>Positive</td>
<td>Disbanded for small, “decision-oriented” team</td>
<td>Good</td>
</tr>
</tbody>
</table>

NOTE: Each team’s conflict style appears under its name in the first column; its overall rating of effectiveness appears in the far right column. A dash indicates that the team or its facilitator did not complete that measure following their decision meeting. All evaluations are in comparison to sample averages.
overall decision-making effectiveness was rated as bad. Cases in which the group’s decision making received a combination of positive, negative, and neutral ratings on the available measures were classified as mixed. In mixed cases, we used the ratings provided by observers to arrive at a final classification.

Task complexity. Two independent observers rated the complexity of each decision task, using a six-item scale that asked them to rate several aspects of the group’s task based on the dimensions identified by Shaw (1981): task difficulty, solution multiplicity, interest, cooperation, requirements, task novelty, and ratio of mental to physical requirements (see Appendix B). Ratings were then dichotomized as either “high” or “low.”

Because these dimensions are causes of task complexity, rather than indicators, Cronbach’s alpha is not an appropriate measure of reliability. Bollen and Lennox (1991) contend that only moderate correlations among causal indicators is optimal. Thus, a percentage of intercoder agreement was computed for each of the six questions. Across the eleven groups, intercoder agreement was .91 on Questions 1 and 5, .82 on Questions 2 and 4, .73 on Question 3, and only .45 on Question 6. Because of the low reliability on Question 6, it was excluded from further analysis. With the remaining five questions, internal consistency was judged to be acceptable. This allowed us to classify the tasks facing six teams (Cancer, Taurus, Virgo, Pisces, Capricorn, and Aquarius) as high in complexity, whereas five teams (Aries, Libra, Scorpio, Leo, and Gemini) faced relatively low complexity tasks.

RESULTS

Group Conflict Management Styles

All groups managed at least 50% of their conflicts with the same approach (see Table 2), providing a preliminary classification of style. We then reconsidered the classifications in light of the two other criteria, evolution in style and the significance of conflict episodes, respectively. For instance, Virgo managed two of its four episodes integratively, with one episode each of distributive and avoidance. There was no evidence of an evolution in conflict approach over time, and Virgo’s two high significance episodes were managed integratively, leading us to characterize this team as integrative.

The latter two criteria changed the classification of three teams: Cancer, Scorpio, and Leo. According to Table 2 and the case studies, Cancer evolved to an integrative style over its episodes and managed its high significance conflicts integratively, and thus was classified as integrative. Scorpio, on the other hand, exhibited no clear trend across its episodes, and managed its
more significant conflicts by integration and avoidance; therefore, it was reclassified as “mixed” rather than distributive. Finally, Leo’s style was also classified as “mixed,” as its high-significance conflicts were not managed in any single style, revising the original integrative classification. In all, it seemed justifiable to conclude that 9 of 11 teams (82%) exhibited a stable style of conflict management.

The Impact of Group Conflict Management Style on Decision-Making Effectiveness

A 4 x 3 contingency table of conflict management style by overall decision-making effectiveness is shown in Table 4. A test for independence between the two variables indicated a significant relationship, \( \chi^2 (6, N = 11) = 10.56, p < .01. \)

Because integrative conflict management was hypothesized to lead to “good” decision making, a second test reduced the number of cells, and maximized expected cell frequencies, by dichotomizing the variables. By focusing on the relationship of interest, we collapsed the table to reduce any inflation in the chi-square value related to the small sample size. Because of the existence of many empty cells, we chose not to partition the table. Dichotomizing the variables only after testing the larger array helps avoid the danger of distortion discussed by Reynolds (1984), and has the potential to increase the confidence in the association reported in Table 4.

Therefore, conflict management style was classified either as “integrative” or as “nonintegrative,” and decision making effectiveness was classified as either “good” or “other.” This collapsed table (Table 5) also displayed a significant relationship: \( \chi^2 (1, N = 11) = 7.54, p < .01. \)

Although there are low expected frequencies in the cells and relatively low variance in the effectiveness variable, a clear pattern is evident in this data. To further examine the relationship, we analyzed the cell residuals for each cell in each contingency table, a procedure that examines intracell differences between observed and expected frequencies (Agresti, 1996; Kennedy, 1992). Although none of the residuals achieve significance, their pattern is informative. In Table 5, the residuals in the upper-left and lower-right cells are positive, whereas the others are negative. The upper-left cell, first, represents teams that manage conflicts integratively and were rated as good in decision making. The lower-right cell represents teams that manage conflicts in any other fashion (distributive, avoidance, or mixed) and were rated as either mixed or bad. (Note that no integrative groups were rated either mixed or bad, and only one of seven nonintegrative teams was rated as good in decision making.) All teams managing conflicts integratively were rated as highly effec-
tive, whereas the decision making of groups managing conflicts with other styles was very rarely rated as effective. Together, these results provide evidence favoring H1.

**Relationship Between Task Complexity, Conflict Style, and Decision-Making Effectiveness**

Because it locates associations among variables and can specify a model that fits three (or more) categorical variables, log-linear analysis was employed to answer RQ1. Log-linear models ordinarily require that 80% of the cells have an expected frequency of five or greater (Howell, 1992); violation of this assumption, however, is likely to lead to a reduction of the test’s power rather than an inflated Type I error (Milligan, 1980). Given the limitation of our sample, we nonetheless decided to examine the relationship, because (a) the risk of committing Type I error was relatively low, and (b) our use of this procedure is intended to explore RQ1; however tentative an answer might be to RQ1, the results could inform future analyses.

To minimize the impact of the small sample size, dichotomies were created for all three variables. Conflict management styles and decision-making effectiveness were dichotomized as described for Table 5. Thus,

### Table 4

<table>
<thead>
<tr>
<th>Conflict management style</th>
<th>Decision-making effectiveness</th>
<th>Row total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Good</td>
<td>Mixed</td>
</tr>
<tr>
<td>Avoidance</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Distributive</td>
<td>1.4</td>
<td>1.1</td>
</tr>
<tr>
<td>Integrative</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Mixed</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Column total | 5 | 4 | 2 | 11 |

NOTE: Contingency table for H1’s original chi-square test. In each cell, the top line is the observed count, the middle line is the expected count, and the bottom line is the standardized residual. An asterisk denotes a residual exceeding ±1.96.
six teams (Aries, Cancer, Taurus, Libra, Virgo, and Aquarius) were classified as high in decision-making effectiveness, whereas five teams (Scorpio, Leo, Gemini, Pisces, and Capricorn) were classified as low in effectiveness. Task complexity, as reported above, was rated either high or low. The tasks facing Aries, Libra, Scorpio, Leo, and Gemini were classified as low in complexity, whereas those facing Cancer, Taurus, Virgo, Pisces, Capricorn, and Aquarius were classified as high.

We fit several hierarchical log-linear models to our data, as shown in Table 6. As is the case with chi-square, log-linear models fit the data well when, for a given df, the likelihood ratio ($G^2$) is small and the $p$-value is large. Additionally, a higher-order model contains all lower-level terms, such that Model 7, the interaction between task complexity and decision-making effectiveness, also consists of main effect terms for these two variables. In log-linear analysis, it is often the case that more than one model provides a good fit for the data (Agresti, 1990, 1996). In such cases, choice of a model should be based on parsimony, but should also reflect a theoretical rationale. In Figure 6, two models (10 and 11) adequately fit the data. Model 11, with all two-way interactions, is not acceptable, because it lacks simplicity and provides only a marginally superior fit (i.e., the difference in $G^2$ is not significantly greater than Model 10). Therefore, the best-fitting model for our data consists of two 2-way partial associations: between conflict management style and task complexity (controlling for decision-making effectiveness) and between conflict management style and decision-making effectiveness (controlling for task complexity).

Although this model was produced from a small data set, we may use these findings to provide a tentative reply to our research question. There is evidence of an association between task complexity and conflict mani-
agement style, as well as between conflict management style and decision-making effectiveness. Groups with high task complexity were more likely to develop an integrative conflict style, whereas all five groups working on low-complexity tasks managed conflicts nonintegratively. Integrative conflict management styles are associated with decision making effectiveness for high-complexity tasks; nonintegrative styles are more likely to lead to ineffective decision making overall. Given the limitations of our data, however, we are unable to address other possible combinations of these variables.

In light of the tests for H1, task complexity may be seen as a moderator of the relationship between conflict management style and decision-making effectiveness. The model indicates an association between integrative conflict management style and effective decision making for high complexity tasks. For low complexity tasks, the relationship is less clear. No teams employed integrative conflict management, and of five teams that had low complexity tasks and nonintegrative conflict management styles, three were rated as low and two as high in decision making. Keeping in mind that we urge caution in drawing conclusions from these findings given our small sample, the log-linear model indicates that (a) there is no direct connection between task complexity and decision-making effectiveness; (b) high task complexity, coupled with integrative conflict management style, may be more likely to lead to effective decision making; and (c) nonintegrative conflict styles are associated with greater odds of ineffective decision making overall.

### TABLE 6
Log-Linear Models and Results

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>$G^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 [Conflict style]</td>
<td>6</td>
<td>14.93</td>
<td>.022</td>
</tr>
<tr>
<td>2 [Task complexity]</td>
<td>6</td>
<td>15.66</td>
<td>.018</td>
</tr>
<tr>
<td>3 [Decision effectiveness]</td>
<td>6</td>
<td>15.66</td>
<td>.018</td>
</tr>
<tr>
<td>4 [Conflict style][Task complexity][Decision effectiveness]</td>
<td>4</td>
<td>14.75</td>
<td>.005</td>
</tr>
<tr>
<td>5 [Conflict style * Task complexity]</td>
<td>4</td>
<td>8.28</td>
<td>.075</td>
</tr>
<tr>
<td>6 [Conflict style * Decision effectiveness]</td>
<td>4</td>
<td>8.28</td>
<td>.075</td>
</tr>
<tr>
<td>7 [Task complexity * Decision effectiveness]</td>
<td>4</td>
<td>14.78</td>
<td>.004</td>
</tr>
<tr>
<td>8 [Conflict style * Task complexity][Decision effectiveness]</td>
<td>3</td>
<td>8.19</td>
<td>.041</td>
</tr>
<tr>
<td>9 [Conflict style * Task complexity][Task complexity * Decision effectiveness]</td>
<td>2</td>
<td>7.40</td>
<td>.023</td>
</tr>
<tr>
<td>10 [Conflict style * Task complexity][Conflict style * Decision effectiveness]</td>
<td>2</td>
<td>1.63</td>
<td>.441</td>
</tr>
<tr>
<td>11 [Conflict style * Task complexity][Conflict style * Decision effectiveness][Task complexity * Decision effectiveness]</td>
<td>1</td>
<td>.174</td>
<td>.70</td>
</tr>
<tr>
<td>12 [Conflict style * Task complexity * Decision effectiveness]</td>
<td>0</td>
<td>.000</td>
<td>1.00</td>
</tr>
</tbody>
</table>

NOTE: Each line represents a plausible hierarchical log-linear model, its associated degrees of freedom, likelihood-ratio score, and approximate significance level. Higher level models include all associated lower level terms.
DISCUSSION

The overarching goal of this study has been to gain insight into the relationship between groups’ conflict management and decision making. We argued that the best way to understand this relationship is to study ongoing groups over significant portions of time, and therefore examined 11 groups embedded in two large U.S. organizations. In light of the results presented in the preceding section, we can draw conclusions about conflict and decision making, framed in terms of functional and contingency theories of group decision making.

Group Conflict Management Styles

As a basis for the investigation, we observed group conflict management styles that, as norms, emerged over time in interaction. Nine of the 11 groups displayed a consistent conflict management style, measured using the three-pronged process discussed above. This finding should be relevant to group communication researchers for at least two reasons. First, the procedure used here can guide future analyses of group-level constructs; the methods for studying conflict management style may be only one example of this general approach. Second, finding stable conflict management styles disputes theories of group development that posit a deterministic progression toward integrative conflict management. Several writers imply that, as groups move through developmental changes, they also progress toward integrative conflict management (Franz & Jin, 1995; Tuckman, 1965; Wheelan, 1994). Although developmental stages were not explicitly investigated, the 11 teams studied here showed little evidence of progressing toward an integrative style. Only Cancer’s episodes showed a clear development toward an integrative style, whereas several other teams either showed no progression or, like Gemini, moved from integrative to distributive. Although it is possible that failing to find such a progression may be an artifact of sampling only four episodes of conflict over each team’s life, these patterns call such teleological claims into question.

Relationship Between Conflict Management Style and Decision-Making Effectiveness

The tests for H1 indicate a significant relationship between conflict style and decision-making effectiveness. As hypothesized, the four integrative groups were rated as highly effective, but all three avoidance teams (including Leo, originally classified as having a mixed conflict style) received mixed scores. Further, the distributive teams (including Scorpio, originally classified as having a mixed style) varied in effectiveness (one was
good, one was mixed, two were bad). These results indicate that an interaction exists; we elaborate on this below.

Our findings suggest that teams that manage conflicts productively also perform other communication functions that allow them to make decisions satisfying to members, facilitators, and observers. A related conclusion is that the five highly effective groups (Cancer, Taurus, Libra, Virgo, and Aquarius) confronted contentious issues rather than avoiding or ignoring them. These groups were vigilant in their pursuit of resolutions to problems that stood in the way of their progress. Although conflict was time consuming and often appeared frustrating for members, integrative teams seemed to understand that certain problems necessitated their collective attention. For instance, Virgo encountered difficulty with one member’s “habit” of interrupting others as they spoke in meetings. It took several episodes of openly confronting this interaction disruption before a solution was reached, but after working through the issue, the team was better equipped to handle task issues. Roles and norms had been established through conflict in a way that enabled future performance—an unlikely outcome had the group avoided this issue.

As suggested by Hirokawa and Rost (1992), conflict can provide clear direction for a group and can allow a group to analyze its objectives. Conflict can assist a group in analyzing problems, negotiating goals and objectives, and making estimates of possible consequences. These are certainly in line with functional theory, but conflict can serve other functions as well. For instance, it establishes roles and relationships, and it can set norms for structuring a task. The groups in this study showed that conflict communication’s influence extends beyond the task-oriented functions suggested by vigilant interaction theory. Relational and structural functions are also central to decision making, and these are often performed in conflict interaction.

Relationships Between Task Complexity, Conflict Management Style, and Effectiveness

The log-linear analysis indicates that the best-fitting model for our data consisted of interactions between (a) conflict management style and task complexity, and (b) conflict management style and decision making effectiveness. Specifically, at high levels of task complexity, teams that managed conflict with an integrative approach were found to be more effective in decision making. There were, however, no integrative teams working on low-complexity tasks, allowing little comparison. Moreover, teams that managed conflict with other approaches were equally likely to be effective as ineffective on low-complexity tasks (there was insufficient data for high-complexity tasks for these teams).
The results of this test suggest an interesting contingent relationship between these variables, but the limited variance in complexity scores and sample size restricts our interpretation. Analyzing the results in terms of Poole and Roth’s (1989b) strategic rules may shed some light on their meanings. Poole and Roth found that an organized decision path was more likely when groups were faced with difficult tasks and unfavorable group characteristics. Their coordination rule states that when groups meet with internal or external obstacles such as altered deadlines or changes in membership, members devote energy to structuring the group to achieve its goals. At high levels of complexity, then, we would expect teams to expend effort on this type of structuring activity. In this study, four integrative teams were able to coordinate their activity on complex tasks (using conflict productively) as they achieved high levels of decision-making effectiveness. The two nonintegrative teams that encountered highly complex tasks did not make decisions effectively, suggesting that they did not structure their activity as effectively as teams that managed conflict integratively. Finally, although no integrative teams encountered low-complexity tasks, the five nonintegrative teams that encountered low-complexity tasks were split between high (two teams) and low (three teams) decision-making effectiveness.

These findings help us conclude that it is not simply the objective input features of the task that make a difference in decision making; rather, the way in which the group appropriates those features is a better descriptor of outcomes, as evidenced by the log-linear model. There, the input factor of task complexity did not influence decision-making effectiveness directly; rather, it influenced conflict style, which was then found to have a direct relationship with decision-making effectiveness. This finding encourages researchers to pay greater attention to process variables in understanding group outcomes.

Conflict management, a process variable, is one mode by which groups structure their work and determine the influence of inputs on their overall effectiveness. In short, decision-making effectiveness is largely determined communically, not merely through “objective” task inputs. This relationship, however, is likely a recursive one, as the outcomes of decision making “loop back” to influence exogenous variables and even communication processes.

As suggested above, this study also contributes to the development of a contingency theory of group decision making. Although no fully developed contingency theory has been advanced, Gladstein (1984), Hirokawa (1990), McGrath (1984), and Poole and Roth (1989a, b) have tested contingency models. This study contributes to this work in its examination of
task complexity as an exogenous variable and conflict management style as a key communication variable. It shows that task complexity may not be directly related to decision-making effectiveness, but may be manifest in a team’s conflict style, a finding that aligns with the functional perspective on group decision making.

The functional perspective is based on the belief that any group must satisfy certain conditions before it can successfully complete a task (Hirokawa, 1985). Hirokawa and Rost (1992) maintained that groups that remain vigilant in their reasoning, are clear on goals, are motivated to achieve those goals, have adequate resources, and are enabled by components of the structure are more likely to be successful. The findings in this study strongly support such associations between inputs, process characteristics, and decision-making effectiveness. Although it cannot pinpoint the causal factors—generative mechanisms—behind effective decision making, as Hirokawa and Keyton (1995) call for, this article enhances understanding of such factors and moves us closer to developing a contingency theory of group decision making.

Conclusions and Limitations

Conflict management plays both a task and maintenance function in groups; it is also clear that conflict characteristics are connected with group outcomes. It is possible that dual effects exist between conflict management and decision making: Each construct may affect the other in a complex relationship that is obscured by separating them in a study such as this. Instead of a particular conflict style producing effective decision-making outcomes, it may be the case that characteristics of integrative conflict management, as well as characteristics of good decision making, are part of a larger set of communicative behaviors practiced by effective groups. In other words, perhaps effective groups communicate in a way that is qualitatively different from ineffective groups. This idea is the premise of the “functional perspective” on group effectiveness, but further studies are needed to understand the intricacies of the determinants of effectiveness.

Future studies on conflict and decision making should consider groups’ awareness of deadlines. Several teams felt time pressures because of the quality processes, and some ABC teams were even presented with ultimatums by the QC. Changes in group development, including interaction patterns such as conflict management style, may be affected by a recognition of impending deadlines (Gersick, 1988), which should be considered in future research.
Limitations

Although this study contributes to our understanding of conflict and decision making in groups, it also has several limitations. First is the small size of the sample. Drawing on data from only 11 teams restricts our ability to generalize. In addition, groups worked on similar projects, so variance in tasks (and task complexity) was also low. There were also few observations of infrequent events, such as personal or emotional conflicts (observed in only two episodes).

A second limitation is the varied reliability scores on questionnaires used to assess task complexity and decision-making effectiveness. The conclusions using these measures were made with less conviction, but should not diminish the strong overall connection made between conflict management and decision-making effectiveness.

Third, the groups were taken from two large organizations in the midst of quality-improvement programs. Although it is important to study groups in their natural settings (Putnam & Stohl, 1990), these groups may have had characteristics not shared by other groups. For instance, training was provided to these teams on group interaction, and many of the teams had a facilitator for their meetings—resources not available to most groups.

In the end, this study contributes to theory on conflict management and group decision making. It highlights connections between communicative functions performed in conflict and decision-making effectiveness, realizing that “effectiveness” is a multifaceted concept. Through a detailed analysis of 11 teams, this study provides insight into conflict management and decision-making effectiveness. The results underscore the need to use a communicative approach to study group decision making, aiding in the formation of a contingency theory of group decision making. Its assertion that communication in conflict is central to understanding decision making, coupled with an understanding of important inputs to the overall task, should make its findings attractive to scholars from a variety of disciplines and theoretical stripe.

APPENDIX A

Group Reaction Questionnaire and Quick Poll
All questions were rated on 7-point Likert-type scales (1 = strongly disagree; 7 = strongly agree). Numbers refer to the number on the actual form given to raters. The following questions were reverse-coded: 3, 6, 9, 11, 12, 16, 17, 20, 21, 23, 27, and 29.

1. The group’s approach to this meeting was very structured
2. The group did very good work during this meeting
3. The group was not very efficient
4. The discussion helped members to understand each other’s positions
5. The group did not give all points of view fair consideration
6. The group was clear on its goals in this meeting
7. The group thoroughly considered and evaluated information and evidence bearing on the issues discussed today
8. Members didn’t really get at the important issues today
9. The group used valid reasoning processes to draw conclusions
10. This group was ineffective today
11. Members were confused about meeting procedures
12. All members were satisfied with the conclusions or decision the meeting came to
13. Participation in the group discussion was evenly distributed
14. Ideas expressed in the discussion were fully examined
15. The group was not very systematic in this meeting
16. This group needs stronger leadership
17. The group was very creative today
18. This group accomplished a lot in this meeting
19. People did not really respond to each others’ statements in this meeting
20. Members were defensive in the discussion
21. This was a well-run meeting
22. The meeting had a clear beginning and ending
23. The group made good use of time
24. The group gained its members’ commitment today
25. This group had very low energy today
26. There was a cooperative climate in this meeting
27. The group did not handle conflict well
28. The group considered an adequate number of alternative proposals or ideas
29. Overall, I was satisfied with the meeting today

The Quick Poll used a 5-point Likert-type scale (1 = terrible; 5 = excellent) on the following questions:
1. How satisfied are you with the overall progress of the group?
2. How satisfied are you with today’s meeting?

APPENDIX B

Ratings of Task Complexity
The questionnaire given to team members contained the following five questions, each of which was rated on a 7-point Likert-type scale and later dichotomized.
1. How much effort is required to complete the task? (1 = extremely easy; 7 = extremely difficult)
2. To what degree is there more than one acceptable solution to the task? (1 = few viable solutions; 7 = many viable solutions)
3. To what degree is the task interesting and motivating to members? (1 = extremely boring; 7 = extremely interesting)
4. To what degree is integrated action among group members required to complete the task? (1 = no cooperation needed; 7 = tight integration needed)
5. What is the ratio of mental to physical requirements in the task? (1 = high physical; 7 = high mental)
6. To what degree are group members experienced with this type of task? (1 = little member experience; 7 = extensive member experience)
NOTES

1. The study reported here was approved by the University of Minnesota’s Institutional Review Board as well as by the management of the organizations. Each individual member in these groups signed a subject consent form, as required for Human Subjects approval.

2. Cohen’s kappa is normally a measure of interpretive rather than unitizing reliability. However, following the suggestions of Folger, Hewes, and Poole (1984), we concluded that traditional measures of unitizing reliability were inappropriate for these purposes, as we desired unanimity across the three coders for each episode of conflict. As such, 49 episodes were examined, and two did not receive full agreement. These episodes were included in the reliability estimate reported here, but were discarded from the analysis.

3. The GWRCS codes seven different types of group behavior, but only four of these were employed in this study. The categories utilized were: (a) opposition: periods in which disagreements are expressed through the formation of opposing sides; (b) capitulation: the disagreement is resolved when one side gives in to the other; (c) tabling: the disagreement is dropped with no resolution by the parties; and (d) open discussion: the disagreement is resolved through problem-solving discussion, negotiation, or compromise.

A relevant point about our use of the GWRCS is the subtle but important difference between group argument and group conflict. Argument is coded as critical work, in which a group concentrates on the task at hand, often critically examining and critiquing each other’s contributions. In contrast, the GWRCS defines conflict as beginning with a period of opposition, in which members take sides and the group is faced with a choice among positions. Therefore, the sort of civilized disagreement people tend to regard as argument is coded as critical work, whereas disagreements in which positions are more clearly delineated and personalized mark conflict.

With these definitions, avoidance tactics may be difficult to discern. Although the GWRCS detects tabling, it may miss instances of avoidance in which opposition is never made explicit. Such cases undoubtedly occur in many decision-making contexts (Bachratz & Baratz, 1962), but these are outside our conceptual definitions of conflict and conflict management, which focus on observable behavior.

4. In some cases, an attempted mode of resolution would not end the conflict: The opposition would recur shortly after the resolution, continuing a discussion of the same topic. In such cases, coders continued to follow the opposition until it was finally resolved. If groups used two methods for resolving the opposition, both classifications were assigned to the episode (see Table 2).

5. The items on the GRQ are expected to be linearly related and to tap underlying constructs; therefore, Cronbach’s alpha was an appropriate means of evaluating its reliability. To test this, we performed regression analyses on members’ and facilitators’ GRQs. On the member GRQ, $R^2 = .57$ ($N = 754$); on the facilitator GRQ, $R^2 = .71$ ($N = 149$). Additionally, we visually inspected scatter plots of GRQ scores for members, facilitators, and observers, and concluded that these scores were positively related in a simple linear fashion. Taken together, this evidence indicates that the GRQ items are linearly related to one another, allowing us to be confident that the items can be combined linearly and that Cronbach’s alpha is an appropriate measure of internal consistency.

6. In this data set, all seven measures of effectiveness were not available for each of the 11 sessions. In the larger study from which these groups were sampled, members were asked to fill out quick polls every other meeting and GRQs after all others. However, because these instruments were self-administered, in some cases the groups neglected to complete them (often because of time shortages). Facilitators were not at all meetings, so facilitator GRQs were not available for some sessions. Additionally, member and facilitator oral comments on effectiveness were not always made. As Table 3 shows, however, all 11 decision-making sessions had at least four measures across at least two different sets of observers.
7. Although there is some misuse of the chi-square test in the literature (Howell, 1992), we argue that its important assumptions are met in this study. First, the test assumes normality (and therefore, continuity) of data; our table’s small expected frequencies violate this assumption. This violation is unlikely to be a factor in our results, however, as is explained in reference to Table 4. A second and more vital (Howell, 1992) assumption of chi-square is the independence of observations. As is explained above, this is plausible in our data, as the measures were taken at different points in time, by three sets of raters, and only the first author analyzed more than one variable.

8. A possible problem with the result for the first chi-square test is that the significant chi-square value is simply the result of the small sample. Howell (1992) recommends that the expected frequency in each cell be at least five, but notes that others have argued that this rule of thumb may be unnecessary. For instance, Bradley, Bradley, McGrath, and Cutcomb (1979) found that the possibility of Type I error in such cases is rarely greater than .06 (when alpha has been set at .05), stating that “this is true without any correction for continuity and regardless of the size and number of the small expected frequencies in the R x C table” (p. 1295). Howell concludes that “with small sample sizes, power is more likely to be a problem than inflated Type I error rates” (p. 141). Nevertheless, the possibility remains that these significant results are an artifact of the small sample size, so further analysis was conducted.

9. Additionally, Fisher’s Exact Test was computed on Table 5 because this test is designed specifically for 2 x 2 tables in which the sample size and the expected values are small. This test also achieved significance.

10. In conducting this analysis, we substituted .01 for the zero cells in our data. Although it is common in other statistical procedures to add .5 to zero cells, Agresti (1996) argues that doing so in log-linear modeling is inappropriate because it “smooths [sic] the data too much, causing havoc with the sampling distributions” (p. 192). As an alternative, Agresti (1990, 1996) suggests adding very small constants to zero cells, including numbers as small as 10-8.

11. This can also be seen by evaluating the difference between the two models as a chi-square value on one degree of freedom. Here, the difference is 1.456, nonsignificant at the .05 level.

REFERENCES


