Team conflict management and team effectiveness: the effects of task interdependence and team identification

ANIT SOMECH1*, HELENA SYNA DESIVILYA2
AND HELENA LIDOGOSTER1
1University of Haifa, Haifa, Israel
2Emek Yezreel College, Emek Yezreel, Israel

Summary
The present study explores the dynamics of conflict management as a team phenomenon. The study examines how the input variable of task structure (task interdependence) is related to team conflict management style (cooperative versus competitive) and to team performance, and how team identity moderates these relationships. Seventy-seven intact work teams from high-technology companies participated in the study. Results revealed that at high levels of team identity, task interdependence was positively associated with the cooperative style of conflict management, which in turn fostered team performance. Although a negative association was found between competitive style and team performance, this style of team conflict management did not mediate between the interactive effect of task interdependence and team identity on team performance. Copyright © 2008 John Wiley & Sons, Ltd.

Introduction
In modern organizations, teams have become the method of choice for responding quickly to technological and market changes and thus improving the organization’s chances of survival (Ilgen, Hollenbeck, Johnson, & Jundt, 2006; Richter, West, van Dick, & Dawson, 2006). Considerable research effort and human energy have been invested in understanding how to create and develop effective teams (e.g., Ilgen et al., 2006). Although research on teams within organizations has developed somewhat independently from research on organizational conflict, over the past 20 years an increasing number of studies have emphasized the impact of conflict on team dynamics and outcomes (De Dreu & Beersma, 2005; Tjosvold, Hui, & Yu, 2005). Conflicts are common within the interpersonal context of teams, as are attempts made to manage these conflicts (De Dreu & van de Vliert, 1997; Rahim, Magner, & Shapiro, 2000). In such conflicts, team members become aware of discrepancies, incompatible wishes, or incompatible desires (Jehn & Mannix, 2001). Among other issues, teams must contend with conflicts over how to distribute work and rewards effectively and fairly, how to cope with social loafing, and how best to accomplish their goals (Wageman, 1995).

Received 8 March 2007
Revised 18 February 2008
Accepted 9 March 2008

* Correspondence to: Anit Somech, Faculty of Education, University of Haifa, Mount Carmel, Haifa 31905, Israel.
E-mail: anits@construct.haifa.ac.il
Furthermore, research has shown that it is not simply the presence of conflict that affects teams; rather, how team members approach and manage their conflicts has a major impact upon whether the conflict is constructive or destructive (Ayoko, Hartel, & Cullen, 2002; De Dreu & van de Vliert, 1997).

In the literature, the individual is often the unit of analysis in the study of conflict in team and organizational settings (Kuhn & Poole, 2000). Moreover, most studies investigating conflict management have used ad hoc groups (usually students), whose members did not in fact belong to the same actual work group, nor had they been in any long-term relationship (Farmer & Roth, 1998; Sheppard, 1993). Consequently, most studies of conflict within groups have focused on the immediate outcomes of the conflict episode, such as decision quality or commitment to the solution (e.g., Pelled, Eisenhardt, & Xin, 1999). Finally, most studies have not considered specific team-related characteristics that have the potential to affect team members’ preferences for certain conflict-management patterns, which in turn influence team outcomes. These studies overlooked specific psycho-social and structural characteristics of teams that may conceivably be linked to intra-team processes and outcomes.

This study attempts to address these gaps in the literature. We considered conflict-management style at the team level as a typical interaction pattern employed by a team when members deal with oppositions and disagreements (Kuhn & Poole, 2000). The study examined teams that established a long-term relationship. Specifically, we investigated how team identity moderates the effect of task interdependence on team-conflict management (cooperative versus competitive). Then, we posited that team-conflict management would mediate those interactive effects on team outcome (team performance) (see Figure 1).

![Figure 1. The study model](image-url)
Conflict management and team performance

Conflict-management styles have generally been studied as individual characteristics or tendencies. An individual’s conflict style comprises a behavioral orientation and general expectations about his or her approach to conflict. This conception does not prevent an individual from changing styles or enacting behaviors not typically associated with a particular style. Rather, it contends that individuals choose (though often not consciously) a pattern of principles to guide them through episodes of conflict. Previous studies have shown the utility of identifying team-conflict styles (Kuhn & Poole, 2000; Poole & Roth, 1989a,b; Sambamurthy & Poole, 1992). For example, using observational data in a longitudinal design, Kuhn and Poole (2000) examined ongoing, naturally occurring workgroups in two large U.S. organizations. They concluded that 82 per cent of the teams exhibited a stable style of conflict management. Because conflict management is perceived and experienced by individuals, it is best investigated by analyzing individually manifested states, cognitions, and acts. Nevertheless, conflict management may be further understood by investigating how it is embedded in different contexts, such as the work group or the organization. Individuals who choose certain conflict management strategies do not do so in a vacuum, and the team or the organizational context most likely has an impact upon them (George & Jones, 1997). A team conflict management style that has emerged over time and is based upon interactions may affect relationships among members by influencing their communication climate as well as the roles they assume (De Dreu & Beersma, 2005).

Theoretical justification for studying conflict management in teams is provided by three types of literature. The first type includes studies on situation-specific factors that have been shown to influence the way individuals handle conflicts (Eisenberg & Fabes, 1988; George & Jones, 1997). The assumption that appears to underlie such an approach is that conflict management style is situationally specific and is influenced by a variety of contextual factors, such as organizational structure, organizational behavior, or work design (Eisenberg & Fabes, 1988). Hence, these behaviors are undoubtedly affected by the team or the organizational context in which are performed. The second set of studies focuses on the arena of group norms and workplace atmosphere. These studies suggest that teams may serve as powerful sources of norms for their members regarding how to handle disagreements (Ehrhart & Naumann, 2004). For example, Jehn (1997) found that in groups with acceptability (open) norms about conflict, members willingly discussed problems and openly displayed feelings of conflict. The third group of studies examines social learning theory, which suggests that people learn by observing the behavior of others (Bandura, 1986). The more a certain conflict management style is modeled on one’s team’s members, the more likely one will be to behave consistently with those models, particularly when that behavior is associated with positive social consequences (Podsakoff & MacKenzie, 1997).

Most studies on conflict-management strategies at the individual level have adopted the Dual Concern Model, which was originally proposed by Blake and Mouton (1964) and later adopted with some modifications by several scholars, among them Pruitt and Rubin (1986), Rahim (1983) and Thomas (1976). The basic premise of this model is that the mode an individual employs in managing conflicts derives from two underlying motives: concern for the self and concern for the other party. The first dimension explains the degree (high or low) to which an individual attempts to satisfy his or her own concerns. The second dimension explains the degree (high or low) to which an individual seeks to satisfy the concerns of others. Combining these two dimensions yields five specific styles of handling interpersonal conflict: integrating, obliging, dominating, avoiding, and compromising.

Tjosvold (1989) took a somewhat different theoretical approach in his extensive research. His theory rests on the fundamental assumption, advanced by Deutsch (1973), that the ways in which individuals perceive their goals in relation to those of their counterparts govern both their attitudes and their actual interactions in conflict situations. That is, according to these perceptions, individuals communicate
cooperative or competitive intentions to the other party in the conflict. In accordance with Tjosvold’s (1989) approach, in the current study we focus on two strategies for conflict management in teams: cooperative and competitive. Our decision is supported by three main arguments. First, the dual concern model outlined above highlights the individual motivational underpinnings of conflict management approaches. Therefore, its focus is on conflict resolution as the outcome, rather than on overall effectiveness (Rahim et al., 2000). Tjosvold’s approach, in contrast, underscores individual cognitions about whether the goal structure of the other parties to the conflict are distinct or mutual goals. Therefore, this approach is more appropriate for the study of teams in general, and particularly for team effectiveness (e.g., Alper, Tjosvold, & Law, 2000), which is the aim of this study. Second, studies that have adopted Tjosvold’s approach have stressed the critical role of contextual cues in shaping the chosen conflict style (e.g., Tjosvold et al., 2005). Finally, Tjosvold’s approach, which differentiates cooperative and competitive conflict management styles, is more parsimonious, hence seems more appropriate for this study.

Cooperative and competitive conflict management strategies are both active conflict-engaging patterns, but they reflect different levels of cooperativeness or concern for others. The cooperative style involves a high level of concern for the self as well as for the other party. This style has also been described as a problem-solving, collaborative, integrating, solution-oriented, win–win or positive-sum style. The competitive style, in contrast, involves a high level of concern for the self but a lower level of concern for the other party. It is also known as a competing, controlling, contending, win–lose, or zero-sum style (Rahim, 2001; Rahim et al., 2000). Studies that have extended the cooperative–competitive conflict management typology to organizational settings (e.g., Kuhn & Poole, 2000; Tjosvold, 1999; Tjosvold et al., 2005; Tjosvold, Morishoma, & Belsheim, 1999) have demonstrated that conflict dynamics and team outcomes are greatly affected by whether team members emphasize a cooperative or a competitive conflict-management approach. According to Deutsch’s (1973, 1980) theory of cooperation and competition, team members may choose to emphasize their common goals. In such a case, they tend to view conflict as a joint problem that needs common consideration and solution, and they recognize that the success of one member promotes the success of all the others. Reinforced by this mutual affirmation and success, team members are confident they can handle their conflicts and interpersonal difficulties successfully. They are able to make better decisions, which in turn improve team performance.

On the other hand, team members may also choose to emphasize their divergent goals. In this case, the success of one member distances the others from attaining their goals. They tend to view conflict as a win–lose struggle: if the others win, they lose. This emphasis on competitive interests leads to tough and closed-minded discussions. Competitive approaches frustrate communication and result in deadlocks or imposed solutions. Studies have shown that team members who try to outdo one another do not utilize each other’s ideas and resources, hide information, and block each other’s efforts, thus generating distrust. Because of the lack of psychological support and the disruptions in communication and exchange of ideas, competitive interaction results in poor team performance (Johnson, Maruyama, Johnson, Nelson, & Skon, 1981; Tjosvold, Hui, Ding, & Hu, 2003).

Similarly, Bottger and Yetton (1988) suggested that the cooperative approach, with its emphasis on knowledge, logical argument, and explanation, encourages team members to examine diverse knowledge bases and explore alternatives. In contrast, the competitive approach persuades team members to resolve differences of opinion by “I-win-you-lose” dominance games, or makes some participants reluctant to stand up for their opinions. Overall, the empirical literature indicates that a more cooperative conflict management style is likely to produce positive team outcomes, while a competitive style frequently results in conflict escalation and negative outcomes (e.g., Alper et al., 2000). Gobeli, Koenig, and Bechinger (1998) studied conflict in a new product development team; they found that cooperation was the effective approach to conflict resolution, whereas competition was
ineffective. Alper et al. (2000) showed that conflict management based upon mutual benefit predicted the degree to which team members believed they could tackle various conflicts, as well as their supervisor’s evaluations about their team’s effectiveness.

Based upon the above discussion, we posit the following hypotheses:

**Hypothesis 1a.** Team’s cooperative conflict management style will be positively associated with team performance.

**Hypothesis 1b.** Team’s competitive conflict management style will be negatively associated with team performance.

### The effect of task interdependence

Although the literature supports the advantage of the cooperative over the competitive style of conflict management in promoting team performance, fewer research studies have focused on identifying specific team-related characteristics that might influence teams to engage in a particular conflict-management style. In their review of research on team effectiveness, Cohen and Bailey (1997) drew attention to the antecedent role of task interdependence in conflict and other team processes. Task interdependence refers to the extent to which an individual team member needs information, materials, and support from other team members to be able to do his or her job (Brass, 1981; van der Vegt, van de Vliert, & Oosterhof, 2003).

Several studies have documented that task interdependence alters the course and consequences of conflict (e.g., Wilmot & Hocker, 2001). Some have asserted that because high task interdependence implies the need for intensive interactions among members, it creates more opportunities for conflict (e.g., Jehn, 1995; Wilmot & Hocker, 2001; Xie, Song, & Stringfellow, 1998). Research (e.g., Schopler, 1986) has shown that when organizational teams share resources (high task interdependence), competitive strategies may be used to acquire maximum resources and power. Others, however, have stated that although high task interdependence increases the amount of interaction among members, it provides an incentive for collaboration (Lam & Chin, 2004). When task interdependence is high, team members typically communicate more often, are closer physically, and support and influence each other regularly. Thus, task interdependence has a positive impact on the degree of communication among team members and on the level of collective planning necessary for teams to coordinate task integration (Gundlach, Zivnuska, & Stoner, 2006).

These contradictory findings highlight the need to examine the role of moderator variables that determine the direction of the relationship between task interdependence and team conflict-management style. Several factors may have an impact upon this relationship. In this study, we have chosen to focus on the role of team identity because previous research (e.g., Barreto & Ellemers, 2000; Dewitte & De Cremer, 2001) offers consistent evidence that degree of team identity determines how team members respond to the social context of task interdependence (e.g., Barreto & Ellemers, 2000; van der Vegt et al., 2003). The following discussion provides theoretical arguments as well as empirical support for the contention that team conflict management style is determined by the task interdependence/team identity contingency.

### Moderating effect of team identity

Team identification is defined as a personal, cognitive, emotional and behavioral bond between individual and team (Henry, Arrow, & Carini, 1999). Team identification is a particular type of social identification, representing the extent to which individual team members perceive a sense of “oneness” with a particular organizationally based team (Gundlach et al., 2006). According to the social identity theory (Hogg & Terry, 2000; Turner, 1985; van Knippenberg & van Schie, 2000), the process of
identification is thought to be motivated primarily by the need for defining oneself and creating meaning in one’s life. Team identification is an individual-level construct representing the extent to which an individual member identifies with the team. Lembke and Wilson (1998) introduced the term “team identity,” a group-level construct representing the collective level of team identification occurring across all members of a team. The group-level construct of team identity is driven by the individual-level construct of team identification (Gundlach et al., 2006).

Team identity determines whether people will be inclined to follow team norms and exert themselves on behalf of the team (e.g., Barreto & Ellemers, 2000; Haslam, 2001; Wegge & Haslam, 2003). We posit that team identity has a moderating effect on the relationship between task interdependence and team effectiveness. Task interdependence requires team members to work together in order to complete a task. Nevertheless, it presents them with the dilemma of whether to pursue their individual goals or the team’s goals (Kramer, 1991). According to Kramer (1991), when working as part of a team, people may experience a conflict between individual and collective motives. But in terms of social dilemmas this analysis suggests that rather than viewing team relations simply in terms of conflict, it might be better to consider them in respect of weight assigned to individual interests as against team interests. We suggest that in the case of high task interdependence, a high level of team identity encourages team members to collaborate and adopt a constructive and cooperative conflict management style because this style promotes the mutual goals of the team (De Cremer & van Vugt, 1999). In teams with a low level of team identity, however, team interests and personal interests are perceived as incompatible (Dewitte & De Cremer, 2001). Hence, we propose a positive link between task interdependence and a destructive and competitive team conflict management style.

Accordingly, we posit the following hypotheses:

Hypothesis 2. Team identity will moderate the relationship between task interdependence and team conflict-management style, such that:

2a. At low levels of team identity, task interdependence will be negatively related to a team’s cooperative conflict-management style, and positively related to its competitive conflict-management style.

2b. At high levels of team identity, task interdependence will be positively related to a team’s cooperative conflict-management style and negatively related to its competitive conflict-management style.

The mediating role of team conflict management

Based upon the above discussion, our third and final argument is that conflict-management style will mediate the relationship between the interactive effects of task interdependence and team identification on team performance. This model is consistent with previous team effectiveness models (e.g., Kirkman & Rosen, 1999; Campion, Papper, & Medsker, 1996). These input-process-output models separate objective job characteristics from effectiveness and internal responses to these characteristics. All these models involve a three-stage process: (1) leaders take various actions (inputs); (2) these actions affect workers’ experiences (process); and (3) important outcomes result from workers’ positive processes (outputs). Hackman and Morris (1975) noted that a team’s task design is one of the most potent determinants of what constitutes an effective process for promoting performance. Our model of team conflict management deviates from these models in that it also considers the moderating effect of team identity. Nevertheless, in keeping with input-process-output models, we suggest that task interdependence “sets the stage” for constructive team conflict management, thus enabling team
members to resolve conflicts effectively in order to maximize their performance (West, 2002). Consequently, we propose the following hypothesis:

*Hypothesis 3.* A team’s conflict-management style will mediate the interactive effect of task interdependence and team identity on team performance.

**Organizational Context**

**High-Technology Sector**
Over the last decade, the importance of the high-technology sector in the Israeli economy has increased sharply and has become a critical factor in economic growth. At the time of the study (2005), technology represented two-thirds of the 6 per cent growth. The high-technology sector also contributes to an increase in Israeli exports.

**Types of Companies**
The participating companies were firms in the high-technology sector. They specialize in telecommunications, computer software, computer hardware and semi-conductors. All companies provide solutions in different countries worldwide.

**Characteristics of Teams**
Teams conformed to the typical work design in high-technology firms. These teams are usually highly autonomous, and work on a wide variety of project types, from technical services projects to blue-sky research. Teams typically interacted regularly to achieve shared goals. They also depended on one another for knowledge and effort through several permanent structures, such as scheduled staff meetings, joint refresher workshops and more informal communication interactions.

**Characteristics of Employees**
High-technology employees are defined as those who have specialized training and education for complex jobs, and who are currently in a position to utilize their specialized training, knowledge, and experience. Characteristics of these employees include self-direction, valuing technical work and expertise, interest in challenging work, stimulating work environment, and professional growth.

**Methods**

*Sample and procedure*

Seventy-seven research and development (R&D) teams were recruited from high-technology companies specializing in telecommunication, computer software, computer hardware and semi-conductors. Each team leader was interviewed to ascertain that each team provided an appropriate setting for this study. All the interviewed team leaders stated that the members of their teams interacted regularly to achieve shared goals. Team members also depended upon one another for
knowledge and exerted joint efforts by means of several permanent arrangements, among them scheduled staff meetings, “brown bag” lunch meetings, and joint refresher workshops. For a team to be included in the final sample, at least three team members had to complete a questionnaire, and the team leader had to complete a separate questionnaire. Team size ranged from three to six members, with an average of 4.4 (SD = 0.83). The period team members had been working together ranged from 1 to 5.2 years, with an average of 3.4 years (SD 1.7). The sample consisted of 339 employees and their 77 corresponding team leaders. All participants were men, with an average age of 33.19 years (SD = 3.46). Their average time on the job was 7.89 years (SD = 3.74). All participants had at least a bachelor’s degree, 43 per cent in computer sciences and the rest in electronics; 14 per cent of the participants had a master’s degree.

Prior to collecting the data, we took several steps to address ethical concerns and to ensure participants’ commitment to the study. First, managers received a letter describing our research as a study of teamwork in organizations, and assuring them that our concern was not with specific employees but with the team. This ensured confidentiality and presumably fostered employee cooperation. Managers were encouraged to ask us questions and request clarifications. Next, the research assistants visited each selected team, explained the purpose of the study and distributed the questionnaires to the team members. The written instructions accompanying the questionnaires again included a brief explanation of the study’s purpose. To assure anonymity, employees were asked to place their completed questionnaire in a sealed envelope. The team members’ questionnaires included measures of team conflict-management patterns, team identity, and task interdependence. These measures were aggregated to the team level of analysis. The team leaders’ questionnaires included a measure of team performance. Each participant was asked to provide demographic information.

**Measures**

**Task interdependence**

Task interdependence is defined as the extent to which an individual team member needs information, materials and support from other team members to be able to carry out his or her job (van der Vegt et al., 2003). It was measured on a 5-item scale developed by van der Vegt et al. (2003) (e.g., “I have to work closely with my team members to do my work properly”). The respondents rated each statement on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Internal consistency reliability was 0.92.

**Team identity**

Team identity represents the collective level of team identification across all members of the team, obtained by aggregating the individual-level construct of team identification. Team identification was measured by the 12-item 7-point Likert-type inventory (7 = strongly agree, to 1 = strongly disagree) developed by Henry et al. (1999) (e.g., “I think of this team as part of who I am”). Internal consistency reliability was 0.92.

**Conflict management styles**

Rahim’s (1983) organizational conflict inventory form C (ROCI-II), reworded for the team level, was used to assess a team’s typical interaction pattern when its members confront objections and disagreements. The ROCI-II was originally designed to measure five orthogonal dimensions of conflict-management patterns, but for our purposes two subscales were applied: cooperative and competitive (see Appendix A). The cooperative scale (seven items) assesses the extent to which team
members adopt active collaboration among parties to reach a solution that satisfies all concerned (e.g., “Team members try to bring all our concerns out in the open so that the issues can be resolved in best possible way”). The competitive scale (five items) assesses the extent to which team members embrace a win–lose orientation and use coercive behaviors to get others to conform to their position (e.g., “Team members are generally firm in pursuing their side of the issue”). Each team member was asked to indicate how the team usually dealt with disputes, on a 5-point Likert scale (1 = strongly disagree and 5 = strongly agree). The internal consistency reliability was 0.83 for the cooperative scale, and 0.92 for the competitive scale.

Team performance
As in other research on work teams (Alper et al., 2000; Cohen & Ledford, 1994; Somech, 2006), in this study as well obtaining objective work outcome measures proved impossible, despite the willingness of the organization to provide such measures. The companies did not collect team-level productivity data. Therefore, we adapted an 18-item team performance scale (RATE) developed by Tjosvold, Leung, and Johnson (2000) (e.g., “Team members meet or exceed their productivity requirements.”). Team leaders rated each statement on a 5-point Likert scale (1 = strongly disagree, to 5 = strongly agree). Internal consistency reliability was 0.85.

Control variable
Frequency of meetings, relationship conflict, and task conflict were included as control variables because the literature has noted their effects on team processes and outcomes (e.g., Drach-Zahavy & Somech, 2002; Moye & Langfred, 2004). Frequency of meetings was measured by a 5-point Likert type scale adopted from West (1994) (e.g., “How frequently did the team meet during the last week?”). Participants rated four items regarding the extent of interaction and the frequency of team meetings. Internal consistency reliability was 0.87. Relationship conflict and task conflict were measured by a 5-point Likert type questionnaire developed by Jehn and Mannix (2001). A 3-item scale measured relational conflict (e.g., “How much tension is there in your work team?”) with internal consistency reliability of 0.80, and a 3-item scale measured task conflict (e.g., “How much conflict of ideas is there in your work team?”) with internal consistency reliability of 0.75.

Level of analysis
The unit of theory in the present study was the team, so team performance was measured at the team level by surveying the team leader. A team’s conflict-management styles of cooperation and competition, task interdependence, team identification, relationship conflict, task conflict, and frequency of meetings were represented by an aggregate of individual team members’ responses to the team level of analysis.

Thus, it was critical to demonstrate high within-team agreement to justify using the team average as an indicator of a team-level variable ($r_{agg}$; James, Demaree, & Wolf, 1993). A value of 0.70 or above is suggested as a “good” amount of within-group interrater agreement (James et al., 1993). In the current study, all scales exceeded this level. Values were 0.91, 0.88, 0.85, 0.82, 0.84, 0.87, and 0.92 respectively for team task interdependence, team identification, relationship conflict, task conflict, and frequency of meetings. These values are shown in Table 1 in the column $r_{agg}$. Also, in the team-level analyses, the aggregation of individual responses into a team score refers to team members as judges rating their environment. Therefore, team members must also be shown to “agree” before one can claim that a construct is a team-level variable (Bliese & Halverson, 1996).
The within-group agreement was estimated by two measures. ICC(1) provides an estimate of the reliability of an individual respondent’s rating and answers the following question: To what extent can variability in the measure be predicted from group membership? ICC(2) estimates the reliability of mean differences across teams (between group variance) and answers the question: How reliable are the group means within a sample (Bliese & Halverson, 1996)? As indicated by James (1982), ICC(1) generally ranges from 0 to 0.50 with a median of 0.12. There are, however, no definite guidelines for determining acceptable values. Values were ICC(1) = 0.11; ICC(2) = 0.54 for task interdependence; ICC(1) = 0.12; ICC(2) = 0.61 for team identification; ICC(1) = 0.14; ICC(2) = 0.53 for cooperative style of conflict management; ICC(1) = 0.14; ICC(2) = 0.45 for competitive style of conflict management, ICC(1) = 0.13; ICC(2) = 0.50 for relationship conflict; ICC(1) = 0.14; ICC(2) = 0.59 for task conflict; and ICC(1) = 0.10; ICC(2) = 0.63 for frequency of meetings. As indicated by Bliese (2000), ICC(1) generally ranges from 0 to 0.50 with a median of 0.12. In the current study, all scales slightly exceeded the median score.

Results

Table 1 shows the means, standard deviations, and intercorrelation matrix for the study variables. A close examination of the variable means revealed that the average cooperative score ($M = 4.27$) was higher than the average competitive score ($M = 2.47$). These findings indicated that, on average, team members assessed their use of the competitive style of conflict management as low (below the midpoint of the scale), while they assessed their used of the cooperative style as high (above the midpoint of the scale).

Testing the hypotheses

The first hypothesis stated that a team’s cooperative style of conflict management is positively associated with team performance, while competitive style is negatively associated with team
performance. Zero-order correlations provide an initial assessment of the hypothesis. Consistent with Hypothesis 1, the cooperative style correlated positively with team performance \((r = .30, p < .01)\), while the competitive style correlated negatively with team performance \((r = -.24, p < .05)\).

To test the hypothesis more thoroughly, we conducted a hierarchical analysis. The control variables (task conflict, relationship conflict, and frequency of meetings) were entered in the first step, and the team conflict management styles (cooperative and competitive) were entered in the second step. The analysis was conducted using standardized variables (Aiken & West, 1991) to facilitate interpretation and to minimize problems of multicollinearity. Specifically, the main effects of the team conflict management styles predicted 11 per cent of the variance in team performance \((\Delta F = 6.96; p < .01)\). As predicted in Hypothesis 1, the cooperative style related positively to team performance \((\beta = .37, p < .05)\), and the competitive style related negatively to team performance \((\beta = -.28, p < .05)\).

Hypothesis 2 concerned the moderating effect of team identity on the relationship between task interdependence and team conflict management. The hypothesis was tested using two hierarchical regression analyses for predicting the two-team conflict-management styles: cooperation and competition. The three control variables were entered in step 1, the main effects of task interdependence and team identity were entered in step 2, and the second-order interactive effect of task interdependence and team identity was entered in step 3. The results of the hierarchical regression analyses are presented in Table 2 in the columns marked “cooperative style” and “competitive style.”

Only the model for predicting the cooperative style of team conflict management proved significant. Specifically, the main effects of task interdependence and team identity predictors accounted for 10 per cent \((\Delta F = 7.54; p < .01)\) of this variance. The second-order interaction effect between task interdependence and team identity, entered in step 3, accounted for an additional 10 per cent of the variance in the cooperative style \((\Delta F = 8.61; p < .01)\). In line with Hypothesis 2, the interaction effect between task interdependence and team identity on cooperative style was significant \((\beta = .33, p < .05)\). Analysis of the simple effects revealed that when team identity was high, the cooperative style was significantly higher under the condition of high task interdependence than under low interdependence \((t = 3.41, p < .05)\). When team identity was low, however, no difference in cooperative style was found under high or low task interdependence \((t = 1.66, p > .05)\). Thus, team identity moderated the impact of task interdependence for the cooperative style of conflict management, in support of Hypothesis 2 (see Figure 2).

Finally, the mediating role of the cooperative style of team conflict management (Hypothesis 3) can be demonstrated only by testing the following arguments. (a) The antecedents are related to the consequence. Support for this argument was provided by examining and supporting Hypothesis 1. (b) The antecedents are related to the mediator. Support for this argument was provided by examining and supporting Hypothesis 2. (c) The relation between the antecedent and the consequence is eliminated when the mediator is controlled (Baron & Kenny, 1986). To test this argument, we conducted a hierarchical regression analysis to control for the cooperative style of team conflict management. The control variables were entered in the first step. The cooperative style of team conflict management was entered in step 2, the main effects of task interdependence and team identity were entered in step 3, and the interaction of task interdependence and team identity were entered in step 4. The results of the hierarchical regression analysis, presented in Table 3, show that the mediator (cooperation) remained significant \((\beta = .59, p < .01)\), while the interaction effect between task interdependence and team identity on team performance was not significant \((\beta = .14, p > .05)\). Taken together, the results suggest that the cooperative style of team conflict management mediated the relationship between the interactive effect of task interdependence and team identity on team performance. Hence, Hypothesis 3 was supported for the mediating role of the cooperative style of conflict management, but not for the competitive style.
Table 2. Results of hierarchical regression analyses for predicting team performance and team conflict management

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<th>Step variables</th>
<th>Team performance</th>
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<th>Team conflict management</th>
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<td>( \Delta \text{Adjusted } R^2 )</td>
<td>( \Delta F )</td>
<td>df</td>
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<td><strong>Step 1: control variable</strong></td>
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<tr>
<td>Relationship conflict</td>
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<td>Frequency of meetings</td>
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<td><strong>Step 2: main effects</strong></td>
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<td>Task conflict</td>
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<td>-.01 (0.05)</td>
<td>0.13 (9.69**)</td>
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<td>-.28 (0.09)</td>
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<tr>
<td>Frequency of meetings</td>
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<td>.01 (0.02)</td>
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<td></td>
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<tr>
<td>Task interdependence</td>
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<td>.01 (0.05)</td>
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<tr>
<td>Team identity</td>
<td>.39** (0.09)</td>
<td>52** (0.09)</td>
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<td><strong>Step 3: interactions</strong></td>
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<td></td>
</tr>
<tr>
<td>Task conflict</td>
<td>.02 (0.06)</td>
<td>-.07 (0.04)</td>
<td>0.04 (4.27**)</td>
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<td>Relationship conflict</td>
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<td>-.15 (0.09)</td>
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<td>Frequency of meetings</td>
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<td>.01 (0.02)</td>
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<tr>
<td>Task interdependence</td>
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<td>.22 (0.90)</td>
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<tr>
<td>Team identity</td>
<td>.23 (0.54)</td>
<td>.29 (0.89)</td>
<td></td>
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<tr>
<td>Task interdependence \times team identity</td>
<td>.29* (0.23)</td>
<td>.33* (0.21)</td>
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</table>

*p < .05; **p < .01.
Discussion

The results of this study highlight that a work team’s social context is important to the dynamics of conflict management in teams. Thus, OB researchers should be encouraged to pursue this line of analysis. The results also provide additional empirical support for the notion that conflict management styles can be evaluated using a team-level analysis. That is, teams differ in their general tendencies of handling intra-team conflicts, with some teams preferring certain modes of managing conflicts over others. This is an important finding, for a team-level analysis of conflict management shifts the focus from individual behaviors to the behavior of the unit as a whole and to what is considered the standard mode of behavior in the unit. The study augments and extends existing knowledge in the domain of intra-team conflict dynamics in several ways.

First, the results of this study are consistent with previous research (e.g., Alper et al., 2000) and underline the advantage of the cooperative conflict management style over the competitive style in promoting team performance. The results suggest that the way in which team members manage their conflicts can affect their overall team performance (Tjosvold et al., 2005). Teams that rely on the cooperative style tend to view a conflict as a mutual problem that needs common consideration and resolution to enable team members to accomplish their tasks effectively. Teams that adopt a competitive style can also view conflict as a clash of interests, where the success of one team member distances the others from attaining the goal. Alper et al. (2000) suggested that when conflict is handled cooperatively, team members are confident that others will reciprocate and work for mutually beneficial solutions. They understand they can pursue their own interests while at the same time pursuing those of others. These expectations lead to a genuine exchange of diverse ideas and perspectives that recombine into effective and mutually advantageous solutions, thus promoting team performance. In contrast, when teams tend to adopt the competitive pattern for handling conflict, the social context induces
individual team members to expect that others will fail to reciprocate and indeed will obstruct their own efforts as they pursue their incompatible interests. These doubts lead to biased communication and inflexibility and may result in decreasing team effectiveness.

Second, the findings also contribute to the conclusion that developing a cooperative style cannot simply stem from the objective input features of the task, namely task interdependence. Rather, the present model suggests that team identity represents an intervening construct that fosters a constructive team conflict management style of cooperation, which in turn promotes team performance. This finding emphasizes that the level of identification with the team determines how team members respond to the social context (Simons & Peterson, 2000). High task interdependence does imply a need for intensive interactions among team members and points to the importance of others to immediate performance. Yet only when team members develop a sense of team identity will they prefer to resolve internal differences in opinions and viewpoints by adopting solution-oriented or win–win strategies. Interdependence among resources and power (high task interdependence) plays an important role in transactions. Research has shown that when team members share scarce resources (high task interdependence), they may resort to competitive strategies to gain maximum resources and power (van der Vegt et al., 2003). But when team members develop a high sense of team identity, they experience solidarity, loyalty, and trust, which in turn reduce their readiness to exploit their teammates and increase their willingness to cooperate. These results are consistent with previous research on social identity traditions and illustrate the powerful impact of team identity on the salience of situational features (van der Vegt et al., 2003).

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### Table 3. Results of hierarchical regression analyses for predicting conflict management as a mediator of team performance

<table>
<thead>
<tr>
<th>Step variables</th>
<th>β (SE)</th>
<th>ΔAdjusted R²</th>
<th>ΔF</th>
<th>df</th>
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</thead>
<tbody>
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<td>.03</td>
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<td></td>
<td></td>
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<tr>
<td>Frequency of meetings</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Step 2: mediating variable</td>
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<td></td>
</tr>
<tr>
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<td>6.16*</td>
<td>4</td>
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<td>Relationship conflict</td>
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<tr>
<td>Frequency of meetings</td>
<td>−.01 (0.03)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Cooperative style</td>
<td>.44* (0.18)</td>
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<tr>
<td>Step 3: main effects</td>
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</tr>
<tr>
<td>Task conflict</td>
<td>.02 (0.05)</td>
<td>.19</td>
<td>121**</td>
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<tr>
<td>Relationship conflict</td>
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<td>Frequency of meetings</td>
<td>.01 (0.03)</td>
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<tr>
<td>Cooperative style</td>
<td>.59** (0.18)</td>
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<tr>
<td>Task interdependence</td>
<td>.17 (0.19)</td>
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<td></td>
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<tr>
<td>Team identity</td>
<td>−.32 (0.17)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Step 4: interactions</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task conflict</td>
<td>.02 (0.05)</td>
<td>0.001</td>
<td>0.23</td>
<td>7</td>
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<tr>
<td>Relationship conflict</td>
<td>.20 (0.15)</td>
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<td></td>
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<tr>
<td>Frequency of meetings</td>
<td>−.01 (0.30)</td>
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<td></td>
<td></td>
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<tr>
<td>Cooperative style</td>
<td>.59** (0.19)</td>
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<td></td>
<td></td>
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<tr>
<td>Task interdependence</td>
<td>−.29 (0.91)</td>
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<td></td>
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<tr>
<td>Team identity</td>
<td>−.30 (0.91)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Task interdependence × team identity</td>
<td>.14 (0.32)</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

*p < .05; **p < .01.
Nevertheless, it is important to note that, contrary to our hypothesis, the combination of task interdependence and team identity was not related to the competitive style of conflict management. This finding, combined with the low average competitive score found in the present study, may imply that members in intact work teams who must build long-term relationships prefer to avoid resolving conflicts by using the competitive style; otherwise, these teams may not survive. For example, Ayoko et al. (2002) found that team members exhibit competitive strategies only at the early stage of team development, while at later stages more constructive and cooperative interactions tend to evolve. This finding may suggest that in the context of organizational teams, research should differentiate between low and high cooperative style rather than between cooperative and competitive style in order to understand conflict management in teams. Further research should explore the developmental patterns of conflict-related interactions among team members. Moreover, studies should explore other contextual and team factors that might impact those relations. For example, several authors have argued that degree of task interdependence per se does not necessarily predict team processes and performance, and that their effects on team effectiveness closely depend on how they are combined with goal interdependence (e.g., van der Vegt et al., 2003).

Third, the present study supported the mediating role of team cooperative style of conflict management in the relationship between the interactive effects of task interdependence and team identity on team performance. In challenging the prevailing idea that task structure sets the stage for the conflict-management pattern, the present results are consistent with recent studies (e.g., Moye & Langfred, 2004), suggesting that organizational structure studies have overemphasized a direct link between job design characteristics and team outcomes without adequately describing intervening psychological and social constructs. The present findings indicate that task interdependence in itself does not lead team members to favor the cooperative pattern of conflict management, nor does it promote team performance. Team identity might serve as a catalyst or as a neutralizer, leading to different outputs that are sometimes productive and sometimes counterproductive.

Finally, while these findings are encouraging for research on team conflict dynamics and outcomes, there are also some methodological limitations inherent in our approach. First, the cross-sectional nature of our data limits the extent to which our logical explanations can be conclusively supported by the data. It is possible that the causal ordering is reversed, and that what encourages the cooperative pattern of team conflict management is increased team performance. Interestingly, such a finding would run counter to the conventional wisdom of existing research. Moreover, many of the relationships were probably reciprocally causal over time, for example, the relationship between the moderating effect of team identity on the relationship between task interdependence and team conflict management.

As mentioned in this section, the group development literature indicates that over time a team confronts different missions, tasks and goals, so different strategies may be required (Illgen et al., 2006; Gersick, 1988; Tuckman & Jensen, 1977), namely whether cooperative or competitive styles are adopted. Future longitudinal research in more controlled settings (but ideally with real, interacting teams) should be conducted before causal inferences regarding the relationships observed in the present study can be made with more certainty (Moye & Langfred, 2004). Moreover, considering conflict management at the team level raises some questions regarding the process of adopting and maintaining a particular stylistic choice, which might be more than a simple formulaic combination of individual styles (Kuhn & Poole, 2000). We suggest that further research address these questions and examine their implications for team performance. For example, what are the likely outcomes when the majority of team members use a competitive style? Can a powerful minority reverse such a potentially destructive strategic choice?

Second, the data were largely self-reported, and hence subject to bias. This aspect of the study does not differ from previous work (e.g., Tjosvold et al., 2003). Note that recent research suggests that self-reported data are not as limited as was previously believed and that people often accurately
perceive their social environment (Alper et al., 2000). In addition, in the present study the likelihood of common method variance was low because the criterion variable (team performance) was obtained from a different source (team leader) (Podsakoff & Organ, 1986). Still, we have no data to show that this perceptual measure of team performance is the predictor of an “objective” measure of performance. Furthermore, De Dreu et al. (2001) criticized the psychometric qualities of Rahim’s (1983) Organizational Conflict Inventory (ROCI II), which was used in the present study. Future research should use other sources and methods for evaluating team performance (Lovelace, Shapiro, & Weingart, 2001; Oldham & Cummings, 1996), as well as conflict management (Ayoko et al., 2002).

A third limitation pertains to the uniqueness of the sample, which was composed of R&D teams in high technology organizations whose tasks might be characterized as having relatively high interdependence. Moreover, different types of team may have different sets of contingencies, such as the nature of the task, short- or long-term viability, or size. Therefore, it is important to assess whether the present findings can be generalized to other types of teams and organizations. Finally, the generalizability of the present findings should be also examined in other contexts. Previous studies have shown that even taking into consideration the role of other team-related variables, individualism-collectivism still demonstrates a significant and unique influence on team identity processes and on team performance (Gundlach et al., 2006).

Managerial implications

Developing effective ways of managing conflict may have a markedly beneficial effect on team performance. As suggested by our results, organizational teams that rely on cooperative approaches to conflict seem to be good candidates for making effective use of their teamwork for themselves and the organization. Training can be provided to develop key conflict skills and to socialize members to adopt a cooperative approach, especially for teams rated low on cooperative conflict management (Tjosvold et al., 2003). Previous research provides guidance for developing cooperative conflict management skills (Tjosvold, 1993). Team members are trained to express their ideas, positions and feelings directly and without animus. They cease defending their own views long enough to ask each other for more information and arguments. They work to resolve the conflict so that everyone benefits, not just themselves, and they combine the best ideas to create new solutions (Tjosvold, 1997).

The results provide important evidence that team identity serves as a key mechanism in helping teams translate the benefits of task interdependence into significant achievements. One of the major managerial practices to enhance team identification is to increase team member participation in decision-making processes. Active participation enhances involvement, commitment, and a sense of belonging, which in turn lead to a higher level of team identification (Tyler & Blader, 2003). The relationship between task interdependence and team identity may also be enhanced by creating high goal interdependence among team members (van der Vegt et al., 2003). Team members’ perceptions of goal interdependence can be modified by their being jointly encouraged to formulate common team objectives and seek mutual feedback through reflection on their actions (Argyris & Schön, 1996). By creating the right match of task and goal interdependence, managers may enhance team identity and cooperation.

Author biographies

Anit Somech is the head of Educational Leadership & Policy Department at the University of Haifa, Israel. She received her Ph.D. degree in the Department of Industrial Engineering and Management, at
the Technion, the Israel Institute for Technology, with an emphasis on Behavioral Sciences and Management (1994). Her research is in the areas of Teamwork, Management (Participative Management), and Work Motivation (OCB).

Helena Syna Desivilya is a professor in the departments of sociology and anthropology and behavioural sciences at the Emek Yezerel College, Israel. Her research includes conflict management processes in various contexts such as organizations, communities and the inter-group arena. She also engages in action research on public and third sector organizations.

Helena Lidogoster received her MA in educational administration from the University of Haifa, Israel. Her research interests include conflict management processes and team effectiveness.

References


Appendix: Team Conflict Management

Please rate the extent to which your team usually handles disputes as described in the following.

**In my team:**

**Cooperative style:**

1. Team members try to investigate an issue to find a solution acceptable to us.
2. Team members try to investigate ideas to come up with a decision jointly.
3. Team members work to find solutions to a problem that satisfy our expectations.
4. Team members exchange accurate information to solve problems together.
5. Team members try to bring all our concerns out in the open so that the issues can be resolved in the best possible way.
6. Team members collaborate to come up with decisions acceptable to us.
7. Team members work for a proper understanding of a problem.

**Competitive style:**

1. Team members use their influence to get their ideas accepted.
2. Team members use their authority to make decisions in their favor.
3. Team members use their expertise to make a decision in their favor.
4. Team members are generally firm in pursuing their side of the issue.
5. Team members sometimes use their power to win in a competitive situation.